Federal Motor Carrier Safety Administration (FMCSA)

Medical Examiner Handbook

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Introduction

This handbook provides information and guidance to the medical examiner who performs the commercial driver medical examination. Determining driver medical fitness for duty is a critical element of the FMCSA safety program. Specialists, such as cardiologists and endocrinologists, may perform additional medical evaluation, but it is the medical examiner who decides if the driver is medically qualified to drive.

Part I – The Federal Motor Carrier Safety Administration (FMCSA)

About the FMCSA

On December 9, 1999, President Clinton signed into law the Motor Carrier Safety Improvement Act of 1999. This act transferred the Office of Motor Carriers from the Federal Highway Administration (FHWA) to establish the Federal Motor Carrier Safety Administration (FMCSA). FMCSA is one of nine U.S. Department of Transportation administrations. To learn more, visit the DOT Agencies Web page at http://www.dot.gov/DOTagencies.htm.

FMCSA is headquartered in Washington, DC and employs people in all 50 States and the District of Columbia. FMCSA is led by an Administrator, Deputy Administrator, and Chief Safety Officer. The Office of Medical Programs is located under the Associate Administrator for Policy and Program Development.

FMCSA partners and customers are serviced by field organizations. The organizations consist of Field Operations, Service Centers, and State-level motor carrier division offices.

FMCSA activities contribute to ensuring safety in motor carrier operations through strong enforcement of safety regulations; targeting high-risk carriers and commercial motor vehicle drivers; improving safety information systems and commercial motor vehicle technologies; strengthening commercial motor vehicle equipment and operating standards; and increasing safety awareness.

FMCSA Mission Statement

"The Federal Motor Carrier Safety Administration (FMCSA) is focused on reducing crashes, injuries, and fatalities involving large trucks and buses."

In carrying out its safety mandate to reduce crashes, injuries, and fatalities involving large trucks and buses, FMCSA:

- Develops and enforces data-driven regulations that balance motor carrier (truck and bus companies) safety with industry efficiency.
- Harnesses safety information systems to focus on higher-risk carriers in enforcing safety regulations.
- Targets educational messages to carriers, commercial drivers, and the public.
- Partners with stakeholders including Federal, State, and local enforcement agencies, the motor carrier industry, safety groups, and organized labor on efforts to reduce bus and truck-related crashes.

To learn more about FMCSA, visit http://www.fmcsa.dot.gov/about/aboutus.aspx.

About the Office of Medical Programs

The Office of Medical Programs Mission Statement

"The mission of the Office of Medical Programs is to promote the safety of America's roadways through the promulgation and implementation of medical regulations, guidelines and policies that ensure commercial motor vehicle drivers engaged in interstate commerce are physically qualified to do so."

To promote safety, the Office of Medical Programs:

- Oversees the national medical certification process for commercial motor vehicle drivers who operate in interstate commerce.
- Develops and implements medical regulations, policies, and procedures.
- Oversees and supports the Medical Review Board in accordance with the Federal Advisory Committee Act.
- Develops and implements the national registry program — a national medical examiner system and a linked national driver medical reporting system.
- Conducts and oversees the Agency's medical exemption and certificate programs.
- Serves as the lead Federal agency for the regulation of commercial motor vehicle driver health and safety and conducts relevant medical research.

To learn more about the Office of Medical Programs, visit http://www.fmcsa.dot.gov/rules-regulations/topics/medical/medical.htm.

About the National Registry of Certified Medical Examiners

The National Registry of Certified Medical Examiners Mission Statement

"The primary mission of the National Registry of Certified Medical Examiners is to improve highway safety by producing trained, certified medical examiners who can effectively determine if a commercial motor vehicle driver's health meets Federal Motor Carrier Safety Administration standards."

FMCSA has begun the rulemaking process for proposing the National Registry of Certified Medical Examiners (NRCME) program.

The certified medical examiner would:

- Demonstrate an understanding of FMCSA physical qualification requirements and the demands of commercial driving, driver tasks, and the work environment.
- Perform driver certification examinations in accordance with FMCSA physical qualification requirements and medical guidelines.

To learn more about the National Registry of Medical Examiners, visit https://nationalregistry.fmcsa.dot.gov.

The Medical Examiner

The Federal Motor Carrier Safety Regulations identify a person who can be a medical examiner by two criteria: professional licensure and scope of practice that includes performing physical examinations.

Medical examiner means a person who is licensed, certified, and/or registered, in accordance with applicable State laws and regulations, to perform physical examinations. The term includes, but is not limited to, doctors of medicine and osteopathy, advanced practice nurses, physician assistants and chiropractors.

When the Federal Motor Carrier Safety Administration (FMCSA) completes the notice-and-comment rulemaking for the proposed National Registry of Certified Medical Examiners, healthcare professionals will be required to be trained and certified and listed on a national registry to perform physical examinations of truck and bus drivers. At this time, FMCSA does not endorse any medical examiner

training, education or certification programs, and healthcare professionals are not required to be listed on a registry or other database to perform driver physical examinations.

Medical Certification

Medical certification in accordance with Federal Motor Carrier Safety Administration (FMCSA) physical qualification standards is required when the driver is operating a commercial vehicle in interstate commerce that:

- Has a combined gross vehicle weight or weight rating of 10,001 lbs. or more.
- Is designed or used to transport 9-15 passengers (including the driver) for compensation.
- Is designed or used to transport 16 or more passengers (including the driver) whether for compensation or not.
- Transports hazardous materials in quantities that require placarding under the hazardous materials regulations.

When a driver returns from an illness or injury that interferes with driving ability, the driver must undergo a medical examination even if the medical examiner's certificate has not expired.

The medical examiner is responsible for certifying only drivers who meet the physical qualification standards. Certification cannot exceed 2 years, and at the discretion of the FMCSA medical examiner, may be less than 2 years. The Federal Vision and Diabetes Exemption Programs require annual medical certification.

The medical examiner's certificate expires at midnight of the day, month, and year written on the certificate. There is no grace period on the expiration. The driver must be re-examined and recertified to continue to drive legally.

Privacy and the Medical Examination

Regulatory requirements take precedence over the Health Insurance Portability and Accountability Act (HIPAA) of 1996. There are potential subtle interpretations that can cause significant problems for the medical examiner. What information must or can be turned over to the carrier is a legal issue, and if in doubt, the examiner should obtain a legal opinion.

Medical Examination Report Form

Although the Federal Motor Carrier Safety Regulations do not require the medical examiner to give a copy of the Medical Examination Report form to the employer, the Federal Motor Carrier Safety Administration does not prohibit employers from obtaining copies of the Medical Examination Report form. Medical examiners should have a release form signed by the driver if the employer wishes to obtain a copy of the Medical Examination Report form.

Employers must comply with applicable State and Federal laws regarding the privacy and maintenance of employee medical information.

For information about the provisions of the Standards for Privacy of Individually Identifiable Health Information (the Privacy Rule) contact the U.S. Department of Health & Human Services, Office of Civil Rights at http://www.hhs.gov/ocr/hipaa/. The HIPAA toll-free information line is: 1-866-627-7748.

Medical Examiner's Certificate

49 CFR 391.43(g) addresses the distribution of the medical examiner's certificate. If the medical examiner finds that the driver is physically qualified to drive a commercial motor vehicle in accordance with §391.41(b), the medical examiner shall complete a medical examiner's certificate and furnish one copy to the driver and one copy to the motor carrier that employs the driver. A release form is not required. The motor carrier is required to keep a copy of the certificate in the driver qualification file.

The medical examiner should also keep a copy of the medical examiner's certificate on file. The driver may request a replacement copy of the certificate from the medical examiner or get a copy of the certificate from the motor carrier.

To view 49 CFR 391.43(g), visit http://www.fmcsa.dot.gov/rules-regulations/administration/fmcsr/fmcsrruletext.aspx?reg=391.43#49CFR391.43(g)

MEDICAL EXAMINER'S CERTIFICATE

I certify that I have examined Cameron Pike In accordance with the Federal Motor Carrier Safety Regulations (49 CFR 391.41-391.49) and with knowledge of the driving duties, I find this person is qualified; and, if applicable, only when:

- [x] wearing corrective lenses
- [x] wearing hearing aid
- [ ] accompanied by a _____ waiver exemption
- [ ] driving within an exempt intracity zone (49 CFR 391.62)
- [ ] accompanied by a Skill Performance Evaluation Certificate (SPE)
- [ ] Qualified by operation of 49 CFR 391.64

The information I have provided regarding this physical examination is true and complete. A complete examination form with any attachment embodies my findings completely and correctly, and is on file in my office.

SIGNATURE OF MEDICAL EXAMINER	TELEPHONE	DATE
Jamie L. Wilson, PA	801-222-1111	06/06/06

MEDICAL EXAMINER'S NAME (PRINT)	
Jamie L. Wilson, PA	[ ] MD [ ] DO [ ] Chiropractor [ ] Advanced Practice Nurse [x] Physician Assistant

MEDICAL EXAMINER'S LICENSE OR CERTIFICATE NO./ISSUING STATE
ME12345 / UT

SIGNATURE OF DRIVER	DRIVER'S LICENSE NO.	STATE
Cameron Pike	987654321	UT

ADDRESS OF DRIVER
123 Main Street, Any Town, UT 84003

MEDICAL CERTIFICATE EXPIRATION DATE
June 6, 2008

Figure 1 - Medical Examiner's Certificate

Medical Regulations Summary

Code of Federal Regulations — LAW

The Code of Federal Regulations (CFR) is the codification of the general and permanent rules published in the Federal Register by the executive departments and agencies of the Federal government. It is divided into 50 titles that represent broad areas subject to Federal regulation. Title 49 is Transportation.

Each title is divided into chapters, which usually bear the name of the issuing agency. Chapter III of Title 49 is "Federal Motor Carrier Safety Administration, Department of Transportation."

Each chapter is further subdivided into parts that cover specific regulatory areas. Part 391 is Qualifications of Drivers and Longer Combination Vehicle (LCV) Driver Instructors. Large parts may be subdivided into subparts. Subpart E of Part 391 is Physical Qualifications and Examinations.

Parts are organized in sections. Citations for the CFRs include the title, part, and section numbers (e.g., 49 CFR 391.41). When the title is understood, the citation may just include the part and section (e.g., §391.41).

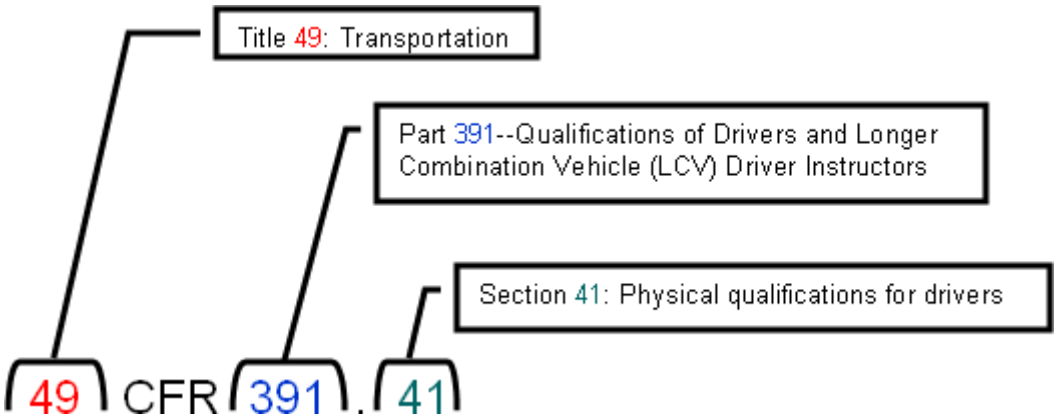


Figure 2 - CFR Citation

Regulations are law and must be followed.

Medical Standards/Advisory Criteria/Guidelines

Standards or Federal Motor Carrier Safety Regulations (FMCSRs) are legal requirements for interstate commercial vehicles, drivers, and motor carriers.

FMCSA provides medical guidelines or advisory criteria to assist in the evaluation of medical fitness to operate a commercial bus or truck. These guidelines are based on expert review and considered best practice. The examiner may or may not choose to use these recommended guidelines. When the certification decision does not conform to the recommendations, the reason(s) for not following the medical guidelines should be included in the documentation.

Medical Regulations Summary Table

The medical examiner should be familiar with the regulations listed in the following table:

Regulation	Description
49 CFR 391.41	Describes the physical qualification requirements for drivers. The 13 standards are used to determine driver medical fitness for duty. Four of the standards: vision, hearing, epilepsy, and diabetes mellitus have objective disqualifiers that do not depend on medical examiner clinical interpretation. These standards are the "non-discretionary" standards. For the other nine "discretionary" standards, the medical examiner makes a clinical judgment in accordance with the physical qualification requirements for driver certification.

49 CFR 391.43	Describes the responsibilities of the medical examiner, including general instructions for performing the medical examination, a description of driver tasks and work environment, medical advisory criteria, the sample Medical Examination Report form, and the medical examiner's certificate.
49 CFR 391.45	Identifies who must have the commercial motor vehicle (CMV) driver physical examination.
49 CFR 391.47	Describes the process for conflict resolution when there is a disagreement between the primary care provider for the driver and the medical examiner for the motor carrier concerning driver qualifications.
49 CFR 391.49	Describes the Skill Performance Evaluation (SPE) Certification Program, which is an alternative physical qualification standard for the driver with a fixed musculoskeletal deficit of an extremity who cannot physically qualify to drive under §391.41(b)(1) or (b)(2). The driver must be otherwise qualified to drive a CMV and meet the provisions of the alternate standard. The first program to address fixed musculoskeletal deficits was created and administered by the Interstate Commerce Commission (ICC) in 1964 and was known as the Handicapped Driver Waiver Program. For more information, see Skill Performance Evaluation Certification Program (SPE) History at http://www.fmcsa.dot.gov/rules-regulations/topics/medical/spe-history.htm.
49 CFR 391.62	Describes limited exemptions for intra-city zone drivers.
49 CFR 391.64	Describes grandfathering for certain drivers who participated in vision and diabetes waiver study programs. These drivers may be certified as long as they continue to meet the provisions outlined in 49 CFR 391.64 and continue to meet all other qualification standards.
49 CFR 390	Includes general information and definitions.
49 CFR 40	Includes regulations for medical review officers and substance abuse professionals, including drug and alcohol testing procedures.

Table 1 - Medical Regulations Summary Table

To view the regulations in the Medical Regulations Summary Table, visit: http://www.fmcsa.dot.gov/rules-regulations/administration/fmcsr/fmcsrguide.aspx?section_type=A.

Exemptions

An exemption provides temporary regulatory relief from one or more of the FMCSRs for commercial drivers. Relief from a regulation is for 2 years and may be renewed. Currently, FMCSA has two medical Driver Exemption Programs:

- Federal Vision Exemption Program (1998).
- Diabetes Exemption Program (September 2003).

The medical examiner cannot issue an exemption. The role of the medical examiner is to determine if the driver is "otherwise qualified." As part of the application procedure, the driver must obtain a medical examination, whereby the medical examiner determines whether the driver is "otherwise qualified" if accompanied by the Federal vision or diabetes exemption. Both Federal exemptions require the driver to have an annual medical examination for maintenance and renewal of the exemption.

There currently are no FMCSA medical waiver programs.

Important Definitions

Regulation Definitions

The medical examiner should become familiar with frequently used terms in the context of the Federal Motor Carrier Safety Regulations and the medical examiner role. Select terms from 49 CFR 390.5 and 49 CFR 40 follow.

Definitions from Regulation 49 CFR 390.5

Commercial Motor Vehicle:

Commercial motor vehicle means any self-propelled or towed motor vehicle used on a highway in interstate commerce to transport passengers or property when the vehicle:

1. Has a gross vehicle weight rating or gross combination weight rating, or gross vehicle weight or gross combination weight, of 4,536 kg (10,001 pounds) or more, whichever is greater; or

2. Is designed or used to transport more than 8 passengers (including the driver) for compensation; or

3. Is designed or used to transport more than 15 passengers, including the driver, and is not used to transport passengers for compensation; or

4. Is used in transporting material found by the Secretary of Transportation to be hazardous under 49 U.S.C. 5103 and transported in a quantity requiring placarding under regulations prescribed by the Secretary under 49 CFR, subtitle B, chapter I, subchapter C.

Driver:

Driver means any person who operates any commercial motor vehicle.

Interstate Commerce:

Interstate commerce means trade, traffic, or transportation in the United States:

1. Between a place in a State and a place outside of such State (including a place outside of the United States);

2. Between two places in a State through another State or a place outside of the United States; or
3. Between two places in a State as part of trade, traffic, or transportation originating or terminating outside the State or the United States.

Intrastate Commerce:

Intrastate commerce means any trade, traffic, or transportation in any State which is not described in the term "interstate commerce."

Medical Examiner:

Medical examiner means a person who is licensed, certified, and/or registered, in accordance with applicable State laws and regulations, to perform physical examinations. The term includes, but is not limited to, doctors of medicine and osteopathy, advanced practice nurses, physician assistants and chiropractors.

Motor Carrier:

Motor carrier means a for-hire motor carrier or a private motor carrier. The term includes a motor carrier's agents, officers, and representatives as well as employees responsible for the hiring, supervising, training, assigning, or dispatching of drivers and employees concerned with the installation, inspection, and maintenance of motor vehicle equipment and/or accessories. For purposes of subchapter B, this definition includes the terms "employer" and "exempt motor carrier."

For additional definitions from 49 CFR 390.5, visit http://www.fmcsa.dot.gov/rules-regulations/administration/fmcsr/fmcsrruletext.asp?rule_toc=759&section=390.5&section_toc=1739.

49 CFR 40.3 - What Do the Terms Used in This Regulation Mean?

The Omnibus Transportation Employee Testing Act of 1991 requires drug and alcohol testing of safety-sensitive transportation employees in aviation, trucking, railroads, mass transit, pipelines, and other transportation industries. The Department of Transportation (DOT) publishes rules on who must conduct drug and alcohol tests, how to conduct those tests, and what procedures to use when testing. There are times when a medical examiner may have interactions with healthcare professionals who perform services in the drug and alcohol testing program.

Medical Review Officer (MRO):

A person who is a licensed physician and who is responsible for receiving and reviewing laboratory results generated by an employer drug testing program and evaluating medical explanations for certain drug test results.

Substance Abuse Professional (SAP):

A person who evaluates employees who have violated DOT drug and alcohol regulations and makes recommendations concerning education, treatment, follow-up testing, and aftercare.

For additional definitions from 49 CFR 40, visit http://www.dot.gov/ost/dapc/NEW_DOCS/part40.html?proc.

Part II - The Job of Commercial Driving

FMCSA Regulates Interstate Commercial Operation

The Federal Motor Carrier Safety Administration (FMCSA) regulates interstate commercial operations, including the drivers, the trucks and buses the drivers operate, the motor carrier, and the transportation of hazardous materials in a quantity requiring placards. A safety risk in any one or more of these commercial operations components can endanger the safety and health of the public.

Drivers

Approximately 6 to 7 million commercial motor vehicle (CMV) drivers are required by law to comply with FMCSA physical qualification standards. Thus, an estimated 3 to 4 million physical examinations must be performed annually, with the demand increasing every year.

In addition to medical fitness for duty certification, other regulations affecting the CMV driver include drug and alcohol testing, record keeping, hours of service, and more.

Vehicles

CMVs include trucks and buses subject to regulations governing inspection, repair, and maintenance.

Truck and Bus Companies

Motor carriers, both for-hire and private, must comply with FCMSA regulations governing their drivers and minimum levels of financial responsibility.

In the Federal Motor Carrier Safety Regulations (FMCSR), the term "motor carrier" refers to:

- Agents for motor carriers.
- Officers.
- Representatives.
- Employees responsible for the hiring, supervising, training, assigning, and dispatching of drivers.
- Employees concerned with the installation, inspection, and maintenance of motor vehicle equipment and accessories.
- Employer.
- Exempt motor carrier.

Motor carriers are responsible for ensuring that the driver meets the general qualification requirements of 49 CFR 391.11. The driver must:

- Be at least 21 years old.
- Speak and read English well enough to:
    - Converse with the general public.
    - Understand highway/traffic signals.
    - Respond to official questions.
    - Make legible entries on reports.
- Be capable of safely operating the CMV.

- Have a current Medical Examiner's Certificate on file.
- Have only one valid CMV operator's license.
- Have provided the motor carrier with required background and violations information.
- Not be subject to disqualification to drive a CMV under the rules in 49 CFR 391.15.
- Have successfully completed a driver's road test or equivalent.

Commercial driver medical fitness for duty records must include all Federal physical qualification requirements found on the Medical Examination Report form. Truck and bus companies may also have additional medical requirements, such as a minimum lifting capability. The driver could fail a motor carrier pre-employment driver certification examination and still meet the Federal physical qualification requirements for certification and issuance of a Medical Examiner's Certificate.

Stat Regulations

States regulate intrastate commerce and commercial drivers who are not subject to Federal regulations. They are required, at a minimum, to adopt Federal physical qualification requirements and may even have additional, different, or more stringent requirements. Medical examiners are responsible for knowing the driver regulations for the State or States in which they practice.

The Driver and the Job of Commercial Driving

The Driver

Driver Certification

49 CFR 391 Qualifications of drivers and longer combination vehicle (LCV) driver instructors establishes the minimum qualifications for persons who drive a CMV. There are seven subparts. As a medical examiner, you should be knowledgeable regarding the physical qualification requirements of the driver specified in Subpart E — Physical qualifications and examinations.

You are responsible for ensuring that only the driver who meets the Federal physical qualification requirements is issued a Medical Examiner's Certificate. When you issue a Medical Examiner's Certificate, you are certifying that the driver is medically fit for duty and can perform the driver role that is described in the Medical Examination Form. You may certify the driver for a maximum of 2 years. You may also, at any time, certify the driver for less than 2 years when examination indicates more frequent monitoring is required to ensure medical fitness for duty.

The driver is responsible for maintaining medical certification and carrying the Medical Examiner's Certificate while operating a CMV.

The Average Driver

The driver population exhibits characteristics similar to the general population, including an aging work force. Aging means a higher risk exists for chronic diseases, fixed deficits, gradual or sudden incapacitation, and the likelihood of comorbidity. All of these can interfere with the ability to drive safely, thus endangering the safety and health of the driver and the public.

The profile of the average truck or bus driver:

- Male.
- More than 40 years of age.

- Sedentary.
- Overweight.
- Smoker.
- Poor eating habits.

The medical profile:

- Less healthy than the average person.
- More than two medical conditions.
- Cardiovascular disease prevalent.

The Job of Commercial Driving

Stress Factors Associated with Commercial Driving

Many factors contribute to making commercial driving a stressful occupation.

- **Types of routes** — Turn-around or short relay routes allow the driver to return home each evening. A long relay route requires driving 9 to 11 hours, followed by at least a 10-hour, off-duty period. Several days may elapse before the driver returns home. With a straight through haul or cross-country route, the driver may spend a month on the road, dispatched from one load to the next. The driver usually sleeps in the truck and returns home for only 4 or 5 days before leaving for another extended period on the road. In team operation, drivers share the driving by alternating 5-hour driving periods with 5-hour rest periods.

- **Schedules** — Abrupt schedule changes and rotating work schedules may result in irregular sleep patterns and a driver beginning a trip already fatigued. Tight pickup-and-delivery schedules require both day and night driving. Failure to meet schedules may result in a financial loss for the driver. Long hours and extended time away from family and friends may result in a lack of social support.

- **Environment** — The driver may be exposed to excessive vehicle noise, vibration, and extremes in temperature. The driver may encounter adverse road, weather, and traffic conditions that cause unavoidable delays.

- **Types of cargo** — The driver of a bus is responsible for passenger safety. Transporting passengers also demands effective social skills. Loss of or shifting cargo while driving can result in serious accidents. Transporting hazardous materials, including explosives, flammables, and toxics, increases the risk of injury and property damage extending beyond the accident site.

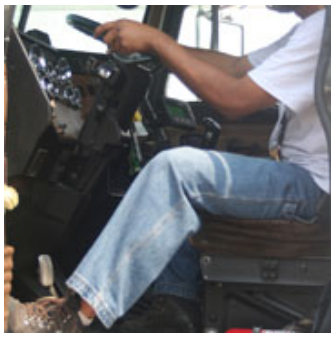
Driving and Other Tasks

- **Stay alert when driving** — This demands sustained mental alertness and physical endurance that is not compromised by fatigue or sudden, incapacitating symptoms. Required cognitive skills include problem solving, communication, judgment, and appropriate behavior in both normal and emergency situations. Driving requires the ability to judge the maximum speed at which vehicle control can be maintained under changing traffic, road, and weather conditions.

- **Use side mirrors** — Mirrors on both sides of the vehicle are used to monitor traffic that can move into the blind spot of the driver. Mirrors are also used in backing up trucks to loading and unloading areas. Sufficient lateral cervical mobility is needed for effective use of side mirrors.

- **Control steering wheel** — Steering wheels of large trucks and buses are oversized. The act of steering can be simulated by offering resistance, while having the driver imitate the motion pattern necessary to turn a 24-inch steering wheel.

- **Manipulate dashboard switches and controls** — Large trucks and buses are complex vehicles with multiple dashboards, switches, and knobs. Use of these components requires adequate reach, prehension, and touch sensation in hands and fingers.

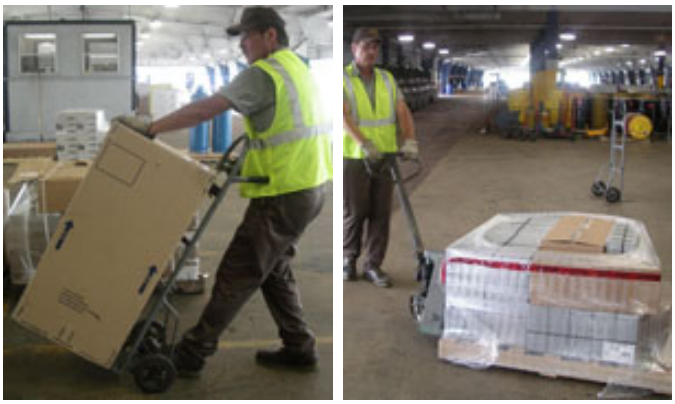


- **Shift gears** — The manual transmission of a large truck may have more than 20 gears. This requires the driver to repeatedly perform reciprocal movements of both legs coordinated with right arm and hand movements.

- **Enter and exit vehicle** — The driver may have to enter and exit the vehicle similar to the same way an individual climbs a ladder: by maintaining three points of contact for safety. Full overhead extension may be required to reach the hand holds. Hip angle and knee flexion may both have to exceed 90°.

- **Coupling and uncoupling the trailers** — Multiple sub-tasks are performed in the process of coupling and uncoupling the trailer, including raising and lowering the trailer supports, connecting air lines and electrical cables, and checking the height of the trailer kingpin. Physical demands include grip strength, upper body strength, range of motion, balance, and flexibility.

- **Load, secure, and unload cargo** — Federal Motor Carrier Safety Administration (FMCSA) guidelines do not specify the number of pounds a driver must be able to lift. However, the Centers for Disease Control and Prevention (CDC) table of General Physical Activities Defined by Level of Intensity lists "loading and unloading a truck" as an example of a vigorous activity that requires the individual to exert greater than 6.0 metabolic equivalents (MET) in performance of the activity.



- **Perform vehicle checks** — Grip strength, upper and lower body strength, range of motion, balance, and flexibility are required to inspect the engine, brakes, and cargo. Vision and hearing are used to identify and interpret changes in vehicle performance.

FMCSA Commercial Driving Facts and Research

Office of Analysis, Research, and Technology

The Federal Motor Carrier Safety Administration (FMCSA) Office of Analysis, Research, and Technology (ART) provides the transportation industry and the public with analytical reports on trends, costs, fatalities, and injuries in large truck and bus crashes. ART research and data help identify factors that contribute to crashes. FMCSA uses this information to develop effective countermeasures that will reduce the occurrence and severity of crashes.

ART prepares all economic and environmental analyses for FMCSA rulemakings to ensure that changes to motor carrier regulations are based on sound data and analysis.

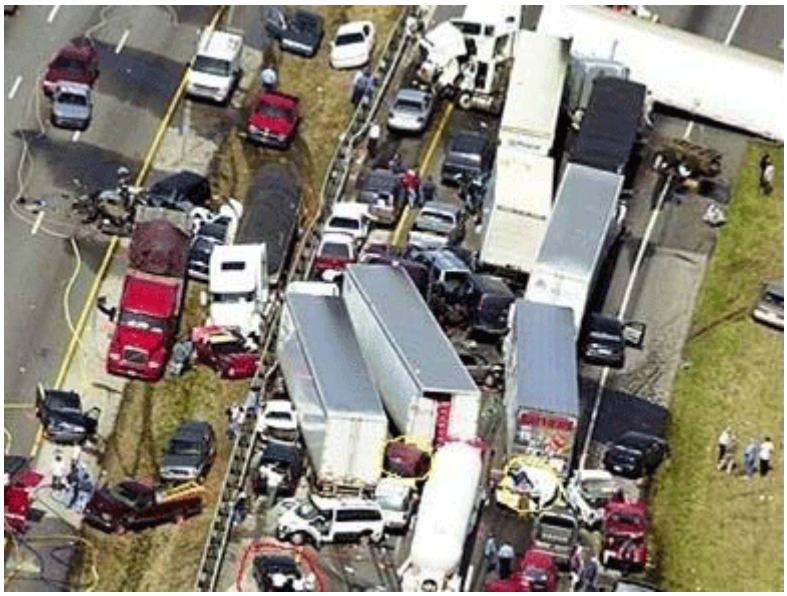
Statistics, facts, publications, and reports resulting from ART studies can be accessed on the FMCSA Web site at http://www.fmcsa.dot.gov/facts-research/art.aspx.

Crashes, Injuries, and Fatalities

FMCSA is dedicated to lowering the rate of crashes, injuries, and fatalities involving large trucks and buses. When a fatal crash involves at least one large truck, regardless of the cause, the occupants of passenger vehicles are more likely to sustain serious injury or die than the occupants of the large truck.

Why are the death rates of occupants in passenger vehicles so high? The answer is found in basic physics: injury severity equals relative velocity change. The greater the mass, the less relative velocity change. The crash of a vehicle having twice the mass with a lighter vehicle equals a six-fold risk of death

to persons in the lighter vehicle. A sport utility vehicle (SUV) weighs approximately 4,000 pounds. A loaded semi-truck weighs roughly 80,000 pounds. The truck has 20 times the mass of the SUV.



In addition to the grievous toll in human life and survivor suffering, the economic cost of these crashes is exceedingly high.

Part III - Medical Examination Guidelines

About 49 CFR 391.43

49 CFR 391.43 Medical examination; certificate of physical examination describes your responsibilities as a Federal Motor Carrier Safety Administration (FMCSA) medical examiner: determine medical fitness for duty and issue Medical Examiner's Certificates to commercial motor vehicle (CMV) drivers who meet the physical qualification standards.

Visit the FMCSA Medical Program Page Link to Responsibilities of Medical Examiners at http://www.fmcsa.dot.gov/rules-regulations/topics/medical/medical.htm. You can access 391.43 by going to the FMCSA Web site, entering "391.43" in the "RULES & REGULATIONS" text box, and selecting "Go."

From the same area of the Web site, you can also access 391.43 by selecting the "Medical Program" link and then the "Responsibilities of Medical Examiners" link.

Purposeof Interstate Commercial Drive Physical Examination

FMCSA describes the periodic physical qualification examination of the interstate CMV driver to be a "medical fitness for duty" examination. The purpose of the physical examination is to detect the presence of any physical, mental, or organic conditions of such character and extent as to affect the ability of the driver to operate a CMV safely.

As a medical examiner, your fundamental obligation is to establish whether a driver has a disease, disorder, or injury resulting in a higher than acceptable likelihood for gradual or sudden incapacitation or sudden death, thus endangering public safety.

Driver/Medical Examiner Relationship

Purpose of Physical Examination

The general purpose of the history and physical examination is to detect the presence of physical, mental, or organic conditions of such character and extent as to affect the ability of the driver to operate a commercial motor vehicle (CMV) safely. This examination is for public safety determination and is considered by the Federal Motor Carrier Safety Administration (FMCSA) to be a “medical fitness for duty" examination.

The Issue Is Risk

As a medical examiner, your fundamental obligation during the physical assessment is to establish whether a driver has a disease or disorder that interferes with the ability to safely operate a CMV, increases the risk for sudden death, or increases the risk for the onset of gradual or sudden incapacitation, thus endangering public safety.

Risk is the probability of an event occurring within a certain period of time. Determining "acceptable risk" is both a medical and societal decision.

Does the Driver Pose a Risk to Public Safety?

As a medical examiner, any time you answer "yes" to this question, you should not certify the driver as medically fit for duty.

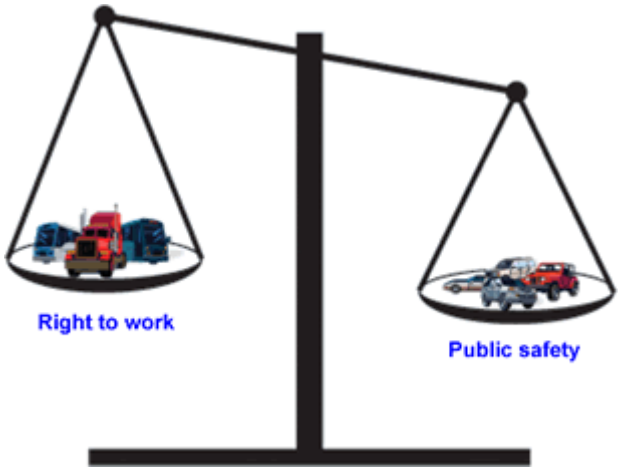


Figure 3 - Right to Work vs. Public Safety

Consider Safety Implications

As you conduct the physical examination to determine if the driver is medically fit to perform the job of commercial driving, you must consider:

- **Physical condition**
  - Symptoms — Does a benign underlying condition with an excellent prognosis have symptoms that interfere with the ability to drive (e.g., a benign supraventricular arrhythmia that causes syncope)?
  - Incapacitation — Is the onset of incapacitating symptoms so rapid that symptoms interfere with safe driving, or can the driver stop the vehicle safely before becoming incapacitated? Is the onset of incapacitating symptoms so gradual that the driver is unaware of diminished capabilities, thus adversely impacting safe driving?
- **Mental condition**
  - Cognitive — Can the driver process environmental cues rapidly and make appropriate responses, independently solve problems, and function in a dynamic environment?
  - Behavior — Are the driver interactions appropriate, responsible, and nonviolent?
- **Medical treatment**
  - Effects — Does treatment allow the driver to perform tasks safer than without treatment?
  - Side effects — Do side effects interfere with safe driving (e.g., drowsiness, dizziness, orthostatic hypotension, blurred vision, and changes in mental status)?

Medical Examiner Do's

As the medical examiner, you are examining for medical fitness for duty, not diagnosing and treating personal medical conditions. Nonetheless, you have a responsibility to educate and refer the driver for

further evaluation if you suspect an undiagnosed or worsening medical problem. Keep the following in mind—

DO:

- Comply with FMCSA regulations.
- Seek further testing/evaluations for those medical conditions of which you are unsure.
- Refer the driver to his/her personal health-care provider for diagnosis and treatment of potential medical conditions discovered during your examination.
- Promote public safety by educating the driver about:
    - Side effects caused by the use of prescription and/or over-the-counter medications.
    - Medication warning labels and how to read them.
    - The importance of seeking appropriate intervention for non-disqualifying conditions, especially those that, if neglected, could result in serious illness and possible future disqualification.

Medical Examination Report Form - Overview

As a medical examiner, you must perform the driver physical examination and record the findings in accordance with the instructions on the Medical Examination Report form. You may use an equivalent medical examination report form, as long as all the elements of the Medical Examination Report form posted in 49 CFR 391.41 are included.

Driver certification is determined based on whether or not the driver meets the requirements of the Federal Motor Carrier Safety Administration (FMCSA) physical qualification standards cited in 49 CFR 391.41.

The purpose of this overview is to familiarize you with the sections and data elements on the Medical Examination Report form, including, but not limited to:

- Organization of the form.
- Required signatures.
- Minimum documentation.

Part IV — Physical Qualification Standards elaborates on clinical assessment of driver medical fitness for duty.

You are encouraged to have a copy of the Medical Examination Report form for reference as you review the remaining topics. Visit http://www.fmcsa.dot.gov/documents/safetyprograms/Medical-Report.pdf to access a copy of the Medical Examination Report form.

Driver Information The

Driver completes section 1:

Medical Examination Report
FOR COMMERCIAL DRIVER FITNESS DETERMINATION

649-F (6045)

1. DRIVER'S INFORMATION Driver completes this section						
Driver's Name (Last, First, Middle) Jones, Jordan Ryan	Social Security No. 123-45-6789	Birthdate 05/10/1950 M / D / Y	Age 57	Sex ☒ M ☐ F	New Certification ☐ Recertification ☒ Follow-up ☐	Date of Exam 04/06/2008
Address 123 Main Street	City, State, Zip Code Any Town, UT 84003	Work Tel: ( ) 301-456-1234 Home Tel: ( ) 301-123-4567	Driver License No. 123567-987	License Class ☐ A ☒ C ☐ B ☐ D ☐ Other		State of Issue Utah

Figure 4 - Medical Examination Report Form: Driver's Information

Driver Information — Data Fields

The driver completes this section, but you, as the medical examiner, must review the data to be sure information is legible and the section is completed.

- **Driver Name (Last, First, Middle) - Verify that the order is correct.**
- **Social Security Number (SSN) - Verify the identification of the driver.**
- **Birthdate (Month, Day, Year) - Verify that the order is correct.**
- **Age - Verify that the birthdate agrees with the age given.**

NOTE: *The motor carrier is responsible for ensuring that the driver meets the 21 years of age requirement before driving an interstate commercial motor vehicle (CMV). You can administer the driver physical to anyone who requests the examination.*

- **Sex (Gender) - Self-explanatory.**
- **Type of Certificate - A complete physical examination is required for both a "New Certification" and "Recertification."**

"Follow-up" is used if further information is needed before you can make your driver certification determination. It is a continuation of your original new or recertification examination. You need not perform the entire physical examination again.

- **Date of Exam - The medical examiner's certificate expiration date is calculated from the date of the "New Certification" or "Recertification" examination, not the date of any subsequent "Follow-up" examination.**
- **Address - Self-explanatory.**
- **Telephone Numbers - Self-explanatory.**
- **Driver License No., License Class, and State of Issue - Self-explanatory.**

As a medical examiner, you are responsible for determining medical fitness for duty and driver certification status.

The motor carrier is responsible for ensuring that the driver meets the commercial driver's license (CDL) requirements before driving an interstate CMV.

Health History

The Driver completes and signs section 2, and the Medical Examiner reviews and adds comments:

2. HEALTH HISTORY Driver completes this section, but medical examiner is encouraged to discuss with driver.

Yes	No		Yes	No		Yes	No	
X		Any illness or injury in the last 5 years?		X	Lung disease, emphysema, asthma, chronic bronchitis		X	Fainting, dizziness
	X	Head/brain injuries, disorders or illnesses		X	Kidney disease, dialysis	X		Sleep disorders, pauses in breathing while asleep, daytime sleepiness, loud snoring
	X	Seizures, epilepsy		X	Liver disease		X	Stroke or paralysis
		☐ medication_____	X		Digestive problems		X	Missing or impaired hand, arm, foot, leg, finger, toe
	X	Eye disorders or impaired vision (except corrective lenses)		X	Diabetes or elevated blood sugar controlled by:		X	Spinal injury or disease
	X	Ear disorders, loss of hearing or balance			☐ diet			Chronic low back pain
	X	Heart disease or heart attack, other cardiovascular condition			☐ pills		X	Regular, frequent alcohol use
		☐ medication_____			☐ insulin		X	Narcotic or habit forming drug use
	X	Heart surgery (valve replacement/bypass, angioplasty, pacemaker)		X	Nervous or psychiatric disorders, e.g., severe depression			
	X	High blood pressure ☐ medication_____		X	medication_____			
		Muscular disease		X	Loss of, or altered consciousness			
X		Shortness of breath						

For any YES answer, indicate onset date, diagnosis, treating physician's name and address, and any current limitation. List all medications (including over-the-counter medications) used regularly or recently.

09/23/2004 - 22 stic,John B. Doe hes right leg. Get winded hiking in mts, past 8 years after 45 pound wt. gain Turns 8-12/day. Wife says I snore. Dr. Briggs, 100 E. Center, Provo, UT. 801-864-2323

I certify that the above information is complete and true. I understand that inaccurate, false or missing information may invalidate the examination and my Medical Examiner's Certificate.

Driver's Signature John B. Doe Date 04/06/2008

Medical Examiner's Comments on Health History (The medical examiner must review and discuss with the driver any "yes" answers and potential hazards of medications, including over-the-counter medications, while driving. This discussion must be documented below.)

Hunting accident - flesh wound, healed with no residual impairement. Has not seen PCP since leg injury. Denies any angina, bloody stools, or sleep disturbances. No daytime sleepiness. Recommended seeing PCP for diet and wt. management and evaluation of gastric upset.

Figure 5 - Medical Examination Report Form: Health History

Health History — Driver Instructions

The driver is instructed to indicate either an affirmative or negative history for each statement in the health history by checking either the "Yes" or "No" box.

The driver is also instructed to provide additional information for "Yes" responses, including:

- Onset date.
- Diagnosis.
- Treating provider contact information.
- Any limitations resulting from a current or past medical condition.
- Medications used regularly or recently, including prescriptions, over-the-counter, and herbal supplements.

Health History — Driver Signature

Verify that the Driver signs Medical Examination Report Form:

I certify that the above information is complete and true. I understand that inaccurate, false or missing information may invalidate the examination and my Medical Examiner's Certificate.

Driver's Signature Pat Jones Date 06/06/08

Figure 6 - Medical Examination Report Form: Driver Signature

By signing the Medical Examination Report form, the driver:

- Certifies that information is “complete and true.”
- Acknowledges that providing inaccurate or false information or omitting information could:
    - Invalidate the examination and any certificate issued based on it.
    - Result in the levy of a civil penalty against the driver under 49 U.S.C. 521(b)(2)(B).

Health History — Medical Examiner Responsibilities

The purpose of the health history is to obtain information relevant to detecting the presence of physical, mental, or organic conditions of such character and extent as to affect the ability of the driver to operate a commercial motor vehicle (CMV) safely.

Regulations — You must review and discuss with the driver any "Yes" answers

For each "Yes" answer:

- Ask about history, diagnosis, treatment, and response to treatment.
- Explore underlying cause, precipitating events, and other pertinent facts.
- Obtain additional tests or consultations, as necessary, to adequately assess the medical fitness of the driver.
- Review and discuss driver response to treatment and medications currently or recently used, including over-the-counter medications, and discuss any potential effects and side effects that may interfere with driving. As needed, you should also educate the driver regarding drug interactions with other prescription and nonprescription drugs and alcohol.
- Write all information on the Medical Examination Report form.

For information on a specific medical condition, see Part IV - Physical Qualification Standards of this handbook.

Recommendations — Questions that you may ask include:

Does the driver have:

- Symptoms that interfere with safe driving because of:
    - Frequency?
    - Duration?
    - Severity?
    - Rapid onset?
- Limitations that interfere with safe driving because of:
    - Degree of limitation present?
    - Likelihood of progressive limitation?
- Medications that when used have effects and side effects that interfere with driving ability, such as:
    - Visual disturbances.
    - Drowsiness.
    - Hypotension.
    - Behavioral changes.

Health History (Column 1) — Overview

In addition to the guidance provided in the section above, directions specific to each category in Column 1 for each "Yes" answer are listed below. Feel free to ask other questions to help you gather sufficient information to make your qualification/disqualification decision.

Any illness or injury in the last 5 years

A driver must report any condition for which he/she is currently under treatment. The driver is also asked to report any illness/injury he/she has sustained within the last 5 years, whether or not currently under treatment.

For information on specific medical conditions, see Part IV *of this handbook.*

Head/brain injuries, disorders, or illnesses

Ask questions that help you determine if the driver has recurring episodes of illness or any residual physical, cognitive, or behavioral effects that interfere with the ability to safely operate a CMV.

Seizures, epilepsy

Ask questions to ascertain whether the driver has a diagnosis of epilepsy (two or more unprovoked seizures), or whether the driver has had one seizure. Gather information regarding type of seizure, duration, frequency of seizure activity, and date of last seizure.

REMEMBER*: According to regulation, a driver with an established medical history or clinical diagnosis of epilepsy does not meet qualification standards and cannot be certified.*

Eye disorders or impaired vision (except corrective lenses)

Ask about changes in vision, diagnosis of eye disorder, and diagnoses commonly associated with secondary eye changes that interfere with driving. Complaints of glare or near-crashes are driver responses that may be the first warning signs of an eye disorder that interferes with safe driving.

REMEMBER*: The requirements for vision screening are regulatory.*

Ear disorders, loss of hearing or balance

Ask about changes in hearing, ringing in the ears, difficulties with balance, or dizziness. Loss of balance while performing nondriving tasks can lead to serious injury of the driver.

REMEMBER*: The requirements for screening for hearing loss are regulatory.*

Heart disease or acute myocardial infarction, other cardiovascular conditions

Ask about history and symptoms of cardiovascular disease (CVD), syncope, dyspnea, congestive heart failure, angina, etc.

NOTE: *If the driver reports symptoms consistent with undiagnosed CVD, you should refer the driver to a specialist for further evaluation prior to certification. If a driver reports current CVD, consult with the driver health care provider and obtain documentation prior to certification.*

Heart surgery

Ask about history of heart surgery, bypass, valve replacement, pacemaker, angioplasty, and whether the driver has an implantable cardioverter defibrillator (ICD). Obtain heart surgery information, including such pertinent operative reports as copies of the original cardiac catheterization report,

stress tests, worksheets, and original tracings, as needed, to adequately assess medical fitness for duty.

NOTE: *If a driver gives a "Yes" answer to the question regarding heart surgery, obtain documentation from the cardiologist before certifying. Also, FMCSA medical guidelines recommend not to certify the driver who has an ICD, due to risk of syncope and gradual or sudden incapacitation while driving a CMV. This includes a dual pacemaker/ICD, even if the ICD has not been activated.*

High blood pressure

Ask about the history, diagnosis, and treatment of hypertension. In addition, talk with the driver about his/her response to prescribed medications.

Hypertension alone is unlikely to cause sudden collapse. The likelihood increases, however, when there is target organ damage, particularly cerebral vascular disease. Recommending specific therapy is beyond the scope of the physical examination. As a medical examiner, though, you are concerned with the blood pressure response to treatment, and whether the driver is free of any effects or side effects that could impair job performance.

Muscular disease

Ask the driver about history, diagnosis, and treatment of musculoskeletal conditions, such as rheumatic, arthritic, orthopedic, and neuromuscular diseases. Does the diagnosis indicate that the driver is at risk for sudden, incapacitating episodes of muscle weakness, ataxia, paresthesia, hypotonia, or pain? Does the diagnosis indicate a degenerative process that over time will restrict movements and eventually interfere with the ability to safely operate a CMV?

NOTE: *In addition to driving, CMV driver duties include such rigorous activity as coupling and uncoupling trailers, loading and unloading trailers, inspecting the vehicle, lifting, installing tire chains, climbing ladders, getting in and out of the cab, etc. Musculoskeletal diseases may adversely impact the CMV driver's muscle strength and agility needed to perform these nondriving tasks.*

Shortness of breath (SOB)

Ask what activities precipitate the episodes, nature, and characteristics of SOB. Does the driver experience SOB only with exertion or also when at rest?

NOTE: *According to guidelines, many drivers may experience SOB while performing the nondriving aspects of their work (e.g., loading and unloading, etc.). However, most commercial drivers are not short of breath while driving their vehicles. SOB while driving should trigger a more detailed evaluation of the driver that can include consulting with an appropriate medical specialist.*

Health History (Column 2) — Overview

In addition to the guidance provided in the section above, directions specific to each category in Column 2 are listed below for each "Yes" answer. Feel free to ask other questions to help you gather sufficient information to make your qualification/disqualification decision.

Lung disease, emphysema, asthma, chronic bronchitis

Ask about emergency room visits, hospitalizations, supplemental use of oxygen, use of inhalers and other medications, risk of exposure to allergens, etc.

NOTE: *Since a driver must be alert at all times, any change in mental state is in direct conflict with highway safety. Even the slightest impairment in respiratory function under emergency conditions (when greater oxygen supply is necessary for performance) may be detrimental to safe driving.*

Kidney disease, dialysis

Ask about the degree and stability of renal impairment, ability to maintain treatment schedules, and the presence and status of any co-existing diseases.

***REMEMBER**: If the driver is on dialysis, he/she cannot drive.*

Digestive problems

Refer to the guidance found in Regulations - You must review and discuss with the driver any "Yes" answers.

Diabetes or elevated blood glucose controlled by diet, pills, or insulin

Ask about treatment, whether by diet, oral medications, Byetta, or insulin.

***REMEMBER**: Drivers with insulin-treated diabetes mellitus who are otherwise qualified may apply for a Federal exemption. To do so, the medical examiner must complete the examination and check* the following boxes:

- *Meets standards but periodic monitoring required due to (write in: insulin treatment).*
- *One year.*
- *Accompanied by (write in: Federal Diabetes) waiver/exemption (circle: exemption).*

Nervous or psychiatric disorders (e.g., severe depression)

Refer to the guidance found in Regulations - You must review and discuss with the driver any "Yes" answers.

Loss of or altered consciousness

Loss of consciousness while driving endangers the driver and the public. Your discussion with the driver should include cause, duration, initial treatment, and any evidence of recurrence or prior episodes of loss of or altered consciousness. You may, on a case-by-case basis, obtain additional tests and/or consultation to adequately assess driver medical fitness for duty.

Health History (Column 3) — Overview

In addition to the guidance provided in the section above, directions specific to each category in Column 3 are listed below for each "Yes" answer. Feel free to ask other questions to help you gather sufficient information to make your qualification/disqualification decision.

Fainting, dizziness

Note whether the driver checked “Yes” due to fainting or dizziness. Ask about episode characteristics, including frequency, factors leading to and surrounding an episode, and any associated neurologic symptoms (e.g., headache, nausea, loss of consciousness, paresthesia).

Sleep disorders, pauses in breathing while asleep, daytime sleepiness, loud snoring

Ask the driver about sleep disorders. Also ask about such symptoms as daytime sleepiness, loud snoring, or pauses in breathing while asleep. When indicated, you should screen for sleep disorders.

Stroke or paralysis

Note any residual paresthesia, sensory deficit, or weakness as a result of stroke and consider both time and risk for seizure.

Missing or impaired hand, arm, foot, leg, finger, toe

Determine whether the missing limb affects driver power grasping, prehension, or ability to perform normal tasks, such as braking, clutching, accelerating, etc.

NOTE: *The Skilled Performance Evaluation (SPE) is designed for fixed deficits of the extremities and cannot be used for deficits caused by progressive disorders.*

Spinal injury or disease

Refer to the guidance found in Regulations - You must review and discuss with the driver any "Yes" answers.

Chronic low back pain

Ask about the degree of pain. How does the pain affect the ability of the driver to perform driving and nondriving tasks? What does the driver do to alleviate pain? Does the treatment interfere with safe driving?

Regular, frequent alcohol use

Ask about driver consumption of alcohol, including quantity and frequency, or use such tools as the CAGE questionnaire to screen for possible alcohol-use problems. You should refer the driver who shows signs of a current alcoholic illness to a specialist.

Narcotic or habit-forming drug use

Explore the use of the medication, whether or not it is prescribed, and the medication's effect on driver reaction time, ability to focus, and concentration. Ask whether the medication causes drowsiness, fatigue, or sleepiness.

NOTE: *The medical examiner has the authority to disqualify a driver if he/she believes that the medication the driver is taking adversely impacts the ability to safely operate a CMV.*

Health History — Medical Examiner Comments Overview

At a minimum, your comments should include:

- Nature of a positive history and the effect on driving ability.
- Discussion about medication and/or treatment effects and side effects that might interfere with driving ability.

Include a copy of any supplementary medical reports obtained to complete the health history.

Vision

The Medical Examiner completes section 3:

TESTING (Medical Examiner completes Section 3 through 7) Name: Last, Jones First, Jordan Middle, Ryan

3. VISION **Standard: At least 20/40 acuity (Snellen) in each eye with or without correction. At least 70 degrees peripheral in horizontal meridian measured in each eye. The use of corrective lenses should be noted on the Medical Examiner's Certificate.**

INSTRUCTIONS: When other than the Snellen chart is used, give test results in Snellen-comparable values. In recording distance vision, use 20 feet as normal. Report visual acuity as a ratio with 20 as numerator and the smallest type read at 20 feet as denominator. If the applicant wears corrective lenses, these should be worn while visual acuity is being tested. If the driver habitually wears contact lenses, or intends to do so while driving, sufficient evidence of good tolerance and adaptation to their use must be obvious. ***Monocular drivers are not qualified.***

Numerical readings must be provided.

ACUITY	UNCORRECTED	CORRECTED	HORIZONTAL FIELD OF VISION
Right Eye	20/ 20	20/	Right Eye 120 °
Left Eye	20/ 20	20/	Left Eye 120 °
Both Eyes	20/ 20	20/	

Applicant can recognize and distinguish among traffic control signals and devices showing standard red, green, and amber colors? ☒ Yes ☐ No

Applicant meets visual acuity requirement only when wearing: ☐ Corrective Lenses

Monocular Vision: ☐ Yes ☒ No

Complete next line only if vision testing is done by an opthalmologist or optometrist

April 4, 2008	Dr. Jessie Smith	801-999-8765	ME56789 / UT	Jessie Smith, MD.
Date of Examination	Name of Ophthalmologist or Optometrist (print)	Tel. No.	License No / State of Issue	Signature

Figure 7 - Medical Examination Report Form: Vision

Vision — Medical Examiner Instructions

To meet the Federal vision standard, the driver must meet the qualification requirements for vision with both eyes.

Regulations — driver must have:

- Distant visual acuity of at least 20/40 (Snellen) in each eye, with or without corrective lenses.
- Distant binocular visual acuity of at least 20/40 (Snellen) in both eyes, with or without corrective lenses.
- Field of vision of at least 70° in the horizontal meridian in each eye.
- Ability to recognize and distinguish among the colors of traffic signals and devices showing the standard red, amber, and green.

Administer Vision Screening Tests

- Use the Snellen chart for testing or give results in Snellen-comparable values.
- Have drivers who wear corrective lenses for driving wear corrective lenses for testing.
- Evaluate drivers who wear contact lenses for good tolerance and adaptation to contact lens usage.
- Assess the ability to recognize and distinguish among red, amber, and green traffic signals (true color perception deficiencies are rarely disqualifying).
- If needed, request a vision examination by a specialist using advanced vision testing equipment to evaluate driver vision adequately.

NOTE: Trained assistive personnel may perform vision screening tests and record results. However, the Medical Examiner must sign the Medical Examination Report form. By signing the Medical Examination Report form, you are taking responsibility for and attesting to the validity of all documented test results.

Disqualifying Vision

- Monocular vision.

- Use of contact lenses when one lens corrects distant visual acuity and the other lens corrects near visual acuity.
- Use of telescopic lenses.
- Failure to meet any part of the vision testing criteria with one eye or both eyes.

NOTE: Some drivers with monocular vision may be able to be certified if otherwise medically fit for duty and are granted a Federal vision exemption certificate.

Specialist Vision Certification

The vision testing and certification may be completed by an ophthalmologist or optometrist. A specialist vision examination may be:

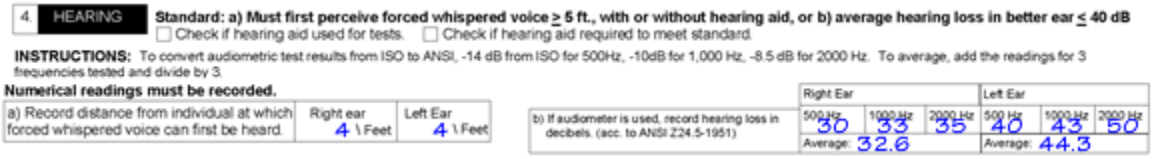
- A requirement for obtaining and renewing a medical exemption.
- Necessary to obtain adequate evaluation of vision with specialized diagnostic equipment.

When the vision test is done by an ophthalmologist or optometrist, that provider must fill in the date, name, telephone number, license number, and State of issue, and sign the examination form. Additionally, ensure that any attached specialist report includes all required examination and provider information listed on the Medical Examination Report form.

NOTE: *Vision is the only portion of the driver physical examination that can be performed and certified by a provider other than a medical examiner.*

Hearing

The Medical Examiner completes section 4:


4 HEARING **Standard: a) Must first perceive forced whispered voice ≥ 5 ft., with or without hearing aid, or b) average hearing loss in better ear ≤ 40 dB**

☐ Check if hearing aid used for tests. ☐ Check if hearing aid required to meet standard.

INSTRUCTIONS: To convert audiometric test results from ISO to ANSI, -14 dB from ISO for 500Hz, -10dB for 1,000 Hz, -8.5 dB for 2000 Hz. To average, add the readings for 3 frequencies tested and divide by 3.

Numerical readings must be recorded.

	Right ear	Left Ear
a) Record distance from individual at which forced whispered voice can first be heard.	4 \ Feet	4 \ Feet

	Right Ear			Left Ear		
b) If audiometer is used, record hearing loss in decibels. (acc. to ANSI Z24.5-1951)	500 Hz	1000 Hz	2000 Hz	500 Hz	1000 Hz	2000 Hz
	30	33	35	40	43	50
	Average: 32.6			Average: 44.3		

Figure 8 - Medical Examination Report Form: Hearing

Hearing — Medical Examiner Instructions

To meet the Federal hearing standard, the driver must successfully complete one hearing test with one ear.

Regulations — driver must:

- First perceive a forced, whispered voice **in one ear** at not less than five feet,

OR

- Not have an average hearing loss **in one ear** greater than 40 decibels (dB) at 500 hertz (Hz), 1,000 Hz, and 2,000 Hz.

Administer Hearing Test or Tests

- Administer either hearing test first (*see* Part IV of this handbook for more information about Hearing Tests):
    - Forced whisper test.
    - Audiometric test.

- Complete the test in both ears.
- If the driver ***passes*** the initial hearing test:
    - **Do not** administer the other test.
    - Rationale: test results show that hearing meets the standard.
- If the driver ***fails*** the initial hearing test:
    - **Do** administer the other hearing test.
    - Rationale: test results from only one test are insufficient to determine whether or not hearing meets the standard.

Hearing Aid

A driver may use a hearing aid to meet the standard.

NOTE: *The driver will usually have to go to an audiologist or hearing aid center for testing with appropriate equipment because the audiometer used in most non-ear-specialty practices is not designed to test a person who is wearing a hearing aid.*

Record use of a hearing aid:

- If the driver uses a hearing aid while testing, mark the "Check if hearing aid used for tests" box.
- If the driver must use a hearing aid to meet standard, mark the "Check if hearing aid required to meet standard" box.

  NOTE: *A driver who must use a hearing aid to qualify is required to use a hearing aid while driving a commercial motor vehicle (CMV).*

Record Hearing Tests Results

- Forced whisper test — Record the distance, in feet, at which a whispered voice is first heard.
- Audiometric test — Record hearing loss in dB for 500 Hz, 1,000 Hz, and 2,000 Hz according to the American National Standards Institute (ANSI).

NOTE: *Convert International Organization for Standardization (ISO) audiometric test results to ANSI by:*

- Subtracting 14 dB from ISO for 500 Hz.
- Subtracting 10 dB from ISO for 1,000 Hz.
- Subtracting 8.5 dB from ISO for 2,000 Hz.

NOTE: *Trained assistive personnel may perform hearing tests and record results. However, the Medical Examiner must sign the Medical Examination Report form. By signing the Medical Examination Report form, you are taking responsibility for and attesting to the validity of all documented test results.*

Hearing — Hearing Test Example

In the example above, the examiner has documented the test results for both hearing tests. The forced whisper test was administered first, and hearing measured by the test failed to meet the minimum five feet requirement in both ears. Therefore, the medical examiner also administered an audiometric test, resulting in:

- Right ear 30 + 33 + 35 = 98/3 = 32.6 = PASS
- Left ear 40 + 43 + 50 = 133/3 = 44.3 = FAIL

The hearing standard is met because the average hearing loss in the right ear is less than 40 dB when measured with an audiometer.

This driver passed one hearing test in one ear.

Blood Pressure/Pulse

The Medical Examiner completes section 5:

5. BLOOD PRESSURE/ PULSE RATE **Numerical readings must be recorded. Medical Examiner should take at least two readings to confirm BP.**

Blood Pressure	Systolic	Diastolic
	136	84

Driver qualified if ≤140/90.

Pulse Rate: ☒ Regular ☐ Irregular

Record Pulse Rate: 76

Reading	Category	Expiration Date	Recertification
140-159/90-99	Stage 1	1 year	1 year if ≤140/90. One-time certificate for 3 months if 141-159/91-99.
160-179/100-109	Stage 2	One-time certificate for 3 months.	1 year from date of exam if ≤140/90
≥180/110	Stage 3	6 months from date of exam if <140/90	6 months if <140/90

Figure 9 - Medical Examination Report Form: Blood Pressure/Pulse Rate

Blood Pressure/Pulse Rate — Medical Examiner Instructions

Regulations — You must measure:

Blood Pressure (BP)

- Only BP readings taken during the driver physical or follow-up examinations may be used for certification decisions.
- BP greater than 139/89 must be confirmed with a second measurement taken later during the examination.
- Record additional BP measurement in your comments on the Medical Examination Report form.

Pulse

- Document pulse rhythm by marking the “Regular” or “Irregular” box.
- Record pulse rate.
- Record additional pulse characteristics in your comments on the Medical Examination Report form.

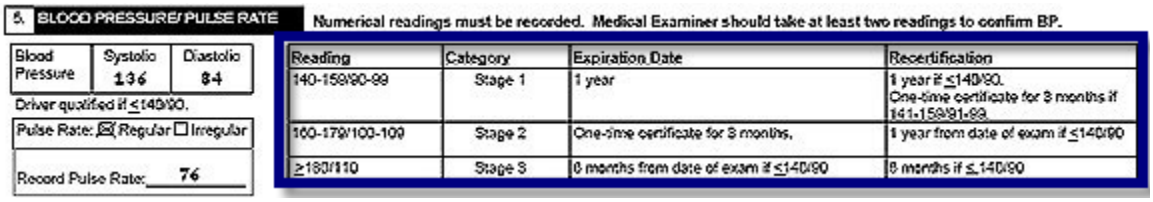
NOTE: *Trained assistive personnel may take and record the BP and pulse. When BP, pulse rate, or both are significant factors in your decision not to certify a driver, it is prudent for you to measure the readings yourself. However, the Medical Examiner must sign the Medical Examination Report form. By signing the Medical Examination Report form, you are taking responsibility for and attesting to the validity of all documented test results.*

Blood Pressure/Pulse Rate — Stages of Hypertension Guidelines Table

The instructions for medical examiners found in 49 CFR 391.43 Blood pressure (BP) stipulate that more frequent monitoring is appropriate when a driver has hypertension at examination time or is being medicated for hypertension. The Blood Pressure/Pulse Rate section of the Medical Examination Report form has a table that summarizes the medical guidelines for BP measurements and is equivalent to three stages of hypertension.

A one-time, three-month medical certificate is granted in two cases: where the driver has a BP that is equivalent to Stage 2 hypertension, or a driver that was certified with Stage 1 hypertension has not achieved a BP less than or equal to 140/90 at recertification. This three-month certificate is a one-time issuance for the recertification period and is not intended to mean once in the driver’s lifetime.

NOTE: *These are recommendations. The medical examiner may use his/her clinical expertise and results of the individual driver examination to determine the length of time between recertification examinations.*



5. BLOOD PRESSURE/ PULSE RATE — Numerical readings must be recorded. Medical Examiner should take at least two readings to confirm BP.

Blood Pressure	Systolic	Diastolic
	136	84

Driver qualified if ≤140/90.

Pulse Rate: ☒ Regular ☐ Irregular

Record Pulse Rate: 76

Reading	Category	Expiration Date	Recertification
140-159/90-99	Stage 1	1 year	1 year if ≤140/90. One-time certificate for 3 months if 141-159/91-99
160-179/100-109	Stage 2	One-time certificate for 3 months.	1 year from date of exam if ≤140/90
≥180/110	Stage 3	6 months from date of exam if ≤140/90	6 months if ≤140/90

Figure 10 - Medical Examination Report Form: Blood Pressure/Pulse Rate Recommendation Table

The following table corresponds to the first two columns of the recommendation table in the Medical Examination Report form. Column one has the blood pressure readings, and column two has the category classification.

Reading	Category
140-159/90-99	Stage 1 hypertension
160-179/100-109	Stage 2 hypertension
greater than or equal to 180/110	Stage 3 hypertension

Table 2 - Blood Pressure/Pulse Rate Recommendation Table Columns 1 and 2

When a BP reading is a value where the individual systolic and diastolic readings are in different stages, you should classify the reading by the higher stage. For example, 168/94 and 148/104 are both examples of Stage 2 hypertension.

The next table corresponds to columns three and four of the recommendation table in the Medical Examination Report form. Use the Expiration Date and Recertification columns to assist you in determining driver certification decisions.

Expiration Date	Recertification
1 year	1 year if less than or equal to 140/90
One-time certificate for 3 months	1 year from date of examination if less than or equal to 140/90
6 months from date of examination if less than or equal to 140/90	6 months if less than or equal to 140/90

Table 3 - Blood Pressure/Pulse Rate Recommendation Table Columns 3 and 4

A driver with Stage 3 hypertension (greater than or equal to 180/110) is at an unacceptable risk for an acute hypertensive event and should be disqualified. You may reconsider the driver for certification following effective treatment for hypertension evidenced by BP stabilized at less than or equal to 140/90.

The 6-month expiration and recertification dates apply to the driver with a known history of Stage 3 hypertension, who has an acceptable BP at examination time, and who tolerates treatment with no side effects affecting safe operation of a commercial motor vehicle (CMV).

Urinalysis

The Medical Examiner Completes section 6:

6. LABORATORY AND OTHER TEST FINDINGS **Numerical readings must be recorded.**

Urinalysis is required. Protein, blood or sugar in the urine may be an indication for further testing to rule out any underlying medical problem.

Other Testing (Describe and record) _____

URINE SPECIMEN	SP. GR.	PROTEIN	BLOOD	SUGAR
	1.020	Neg	Neg	Neg

Table 4 - Medical Examination Report Form: Laboratory and Other Test Findings

Laboratory and Other Test Findings — Medical Examiner Instructions

Regulations — You must perform a urinalysis (dip stick)

Test for:

- Specific gravity.
- Protein (proteinuria).
- Blood (hematuria).
- Glucose (glycosuria).

NOTE: *Trained assistive personnel may obtain urine specimens and record test results. However, the Medical Examiner must sign the Medical Examination Report form. By signing the Medical Examination Report form, you are taking responsibility for and attesting to the validity of all documented test results.*

Additional Tests and/or Evaluation from a Specialist

Abnormal dip stick readings may indicate a need for further testing. As a medical examiner, you should evaluate the test results and other physical findings to determine the next step. For example, glycosuria may prompt you to obtain a blood glucose test. If the urinalysis, combined with other medical findings, indicates the potential for renal dysfunction, you should obtain additional tests and/or consultation to adequately assess driver medical fitness for duty.

Document all additional test results and include the results in your comments, including whether or not the health of the driver affects the ability to safely operate a commercial motor vehicle (CMV). Attach any additional medical reports obtained to the Medical Examination Report form.

NOTE: *Testing for controlled substances is not a part of the physical qualifications for the driver examination process. Testing for controlled substances falls under a different regulation. However, if you suspect a need for drug/alcohol testing, contact the Federal Motor Carrier Safety Administration (FMCSA), or the motor carrier directly, for information on controlled substances and alcohol testing under Part 382 of the Federal Motor Carrier Safety Regulations (FMCSR). Specific questions may be directed to the FMCSA Field Office in your State or call FMCSA at 1-800-832-5660.*

Physical Examination

The Medical Examiner completes section 7:

7. PHYSICAL EXAMINATION Height: 70 (in.) Weight: 262 (lbs.) Name: Last, First, Middle,

The presence of a certain condition may not necessarily disqualify a driver, particularly if the condition is controlled adequately, is not likely to worsen or is readily amenable to treatment. Even if a condition does not disqualify a driver, the medical examiner may consider deferring the driver temporarily. Also, the driver should be advised to take the necessary steps to correct the condition as soon as possible particularly if the condition, if neglected, could result in more serious illness that might affect driving.

Check YES if there are any abnormalities. Check NO if the body system is normal. Discuss any YES answers in detail in the space below, and indicate whether it would affect the driver's ability to operate a commercial motor vehicle safely. Enter applicable item number before each comment. If organic disease is present, note that it has been compensated for. See *Instructions to the Medical Examiner* for guidance.

BODY SYSTEM	CHECK FOR:	YES*	NO	BODY SYSTEM	CHECK FOR:	YES*	NO
1. General Appearance	Marked overweight, tremor, signs of alcoholism, problem drinking, or drug abuse.	X		7. Abdomen and Viscera	Enlarged liver, enlarged spleen, masses, bruits, hernia, significant abdominal wall muscle weakness.		X
2. Eyes	Pupillary equality, reaction to light, accommodation, ocular motility, ocular muscle imbalance, extraocular movement, nystagmus, exophthalmos. Ask about retinopathy, cataracts, aphakia, glaucoma, macular degeneration and refer to a specialist if appropriate.		X	8. Vascular System	Abnormal pulse and amplitude, carotid or arterial bruits, varicose veins.		X
				9. Genito-urinary System	Hernias.		X
3. Ears	Scarring of tympanic membrane, occlusion of external canal, perforated eardrums.		X	10. Extremities- Limb impaired. Driver may be subject to SPE certificate if otherwise qualified.	Loss or impairment of leg, foot, toe, arm, hand, finger, Perceptible limp, deformities, atrophy, weakness, paralysis, clubbing, edema, hypotonia. Insufficicent grasp and prehension in upper limb to maintain steering wheel grip. Insufficient mobility and strength in lower limb to operate pedals properly.		X
4. Mouth and Throat	Irremediable deformities likely to interfere with breathing or swallowing.		X				
5. Heart	Murmurs, extra sounds, enlarged heart, pacemaker, implantable defibrillator.		X	11. Spine, other musculoskeletal	Previous surgery, deformities, limitation of motion, tenderness.		X
6. Lungs and chest, not including breast examination	Abnormal chest wall expansion, abnormal respiratory rate, abnormal breath sounds including wheezes or alveolar rales, impaired respiratory function, cyanosis. Abnormal findings on physical exam may require further testing such as pulmonary tests and/ or xray of chest.		X	12. Neurological	Impaired equilibrium, coordination or speech pattern; asymmetric deep tendon reflexes, sensory or positional abnormalities, abnormal patellar and Babinki's reflexes, ataxia.		X

*COMMENTS:

(1) Markedly overweight male, rest of examination unremarkable - does not interfere with ability to drive.

Figure 11 - Medical Examination Report Form: Physical Evaluation

Physical Examination — Record Driver Height and Weight

Regulations — You must measure and record driver height (inches) and weight (pounds)

The physical qualification standards do not include any maximum or minimum height and weight requirements. You should consider height and weight factors as part of the overall driver medical fitness for duty.

NOTE: *Trained assistive personnel may measure height and weight. However, the Medical Examiner must sign the Medical Examination Report form. By signing the Medical Examination Report form, you are taking responsibility for and attesting to the validity of all documented test results.*

Physical Examination — Medical Examiner Responsibilities

The general purpose of the physical examination is to detect the presence of physical, mental, or organic conditions of such character and extent as to affect the driver ability to operate a commercial motor vehicle (CMV) safely. This examination is for public safety determination and is considered by the Federal Motor Carrier Safety Administration (FMCSA) to be a "medical fitness for duty" examination.

Regulations — You must perform the described physical examination

The physical examination should be conducted carefully and must, at a minimum, be as thorough as the examination of body systems outlined in the Medical Examination Report form. For each body system, mark "Yes" if abnormalities are detected, or "No" if the body system is normal.

You must document abnormal findings on the Medical Examination Report form, even if not disqualifying.

Start your comments using the number to indicate the body system (e.g., 2 for eyes or 8 for vascular system). Your comments should:

- Indicate whether or not the abnormality affects driving ability.
- Indicate if additional evaluation is needed to determine medical fitness for duty.
- Include a copy of any supplementary medical evaluation obtained to adequately assess driver health.
- Document your discussion with the driver, which may include advice to seek additional evaluation of a condition that is not disqualifying but could, if neglected, worsen and affect driving ability.
- Indicate whether or not the body has compensated for an organic disease adequately to meet physical qualification requirements.

Body System (Column 1) — CHECK FOR: Overview

1. General Appearance

Observe and note on the Medical Examination Report form any abnormalities with posture, limps, or tremors. Also observe and note driver affect and overall appearance. Note driver demeanor and whether responses to questions indicate potential adverse impact on safe driving.

Is the driver markedly overweight? If yes, what are the clinical and safety implications when integrated with all other findings?

Are there signs of current alcohol or drug abuse? If yes, refer the driver to a specialist for evaluation. After successful counseling and/or treatment, a driver may be considered for certification, as long as no residual limitations exist that could interfere with the ability to safely operate a CMV.

2. Eyes

At a minimum, you must check for pupillary equality, reaction to light and accommodation, ocular motility, ocular muscle imbalance, extraocular movement, nystagmus, and exophthalmos.

Does your examination find any abnormality that interferes with driving ability? Is an eye abnormality an indicator that additional evaluation, perhaps by a specialist, is needed to assess the nature and severity of the underlying condition?

NOTE: *Special diagnostic equipment may be needed to adequately assess a driver with a known diagnosis or who is at risk for retinopathy, cataracts, aphakia, glaucoma or macular degeneration. Referral to a vision specialist may be required.*

3. Ears

You should check for evidence of any aural disease or condition. At a minimum, you must check for scarring of the tympanic membrane, occlusion of the external canal, and perforated eardrums.

Does your examination of the ear find abnormalities that might account for hearing loss or a disturbance in balance? Should the driver consult with a primary care provider or hearing specialist for possible treatment that might improve hearing test results?

The presence of some hearing disorders, such as Meniere's disease, may interfere significantly with driving ability and the performance of other CMV driver tasks. In this case, guidelines recommend not to certify the driver.

4. Mouth and Throat

Does the condition or treatment require long-term follow-up and monitoring to ensure that the disease is stabilized, and the treatment is effective and well tolerated?

5. Heart

You must examine the heart for murmurs, extra sounds, enlargement, and a pacemaker or implantable cardioverter defibrillator. Check the lower extremities for pitting edema and other signs of cardiac disease.

Does your examination find any abnormalities that indicate the driver may have a current cardiovascular disease accompanied by and/or likely to cause symptoms of syncope, dyspnea, collapse, or congestive cardiac failure?

Can the condition be corrected surgically or managed well by pharmacological treatments? Is the disease progressive?

Does the condition or treatment require long-term follow-up and monitoring to ensure that the disease is stabilized and treatment is effective and well-tolerated?

NOTE: *There are no work restrictions permitted. The commercial driver must be able to perform all job-related tasks, including lifting, to be certified.*

6. Lungs and Chest, Not Including Breast Examination

You must examine the lungs and chest for abnormal chest wall expansion, respiratory rate, and breath sounds including wheezes or alveolar rales. You must check for impaired respiratory function and cyanosis. Be sure to examine the extremities to check for clubbing of the fingers and other signs of pulmonary disease.

Does your examination detect a respiratory dysfunction that in any way could interfere with the ability of the driver to safely operate a CMV? The driver may need to have additional pulmonary function tests and/or have a specialist evaluation to adequately assess respiratory function.

Body System (Column 2) — CHECK FOR: Overview

7. Abdomen and Viscera

You must check for enlarged liver and spleen, masses, bruits, hernia, and significant abdominal wall muscle weakness. Check for tenderness and auscultate for bowel sounds.

Does an abnormal finding suggest a condition that might interfere with safe CMV operation? You should not make a certification decision until the etiology is confirmed, and treatment has been shown to be adequate/effective and safe.

8. Vascular System

You must check for abnormal pulse and amplitude, carotid or arterial bruits, and varicose veins. Check for pedal pulses.

The diagnosis of arterial disease should prompt you to evaluate for the presence of other cardiovascular diseases. Adequate evaluation may require additional testing and/or specialist examination.

9. Genitourinary System

You must check for hernias. You should evaluate any hernia that causes the driver discomfort to determine the extent to which the condition might interfere with the ability of the driver to operate a CMV safely. Obtain further testing and evaluation as required.

An abnormal urinalysis indicates further testing to rule out underlying medical problems.

NOTE: *You cannot certify a driver who has not provided a urine specimen.*

10. Extremities-Limb Impaired. Driver may be subject to Skill Performance Evaluation (SPE) certificate if otherwise qualified.

Check for fixed deficits of the extremities caused by loss, impairment, or deformity of an arm, hand, finger, leg, foot, or toe. Does the driver have a perceptible limp?

Does the driver have sufficient grasp and prehension in the upper limbs to maintain steering wheel grip? Does the driver have sufficient mobility and strength in lower limbs to operate pedals properly?

Does the driver have signs of progressive musculoskeletal conditions, such as atrophy, weakness, or hypotonia?

Does the driver have clubbing or edema that may indicate the presence of an underlying heart, lung, or vascular condition?

NOTE: *If you find a driver is medically qualified EXCEPT FOR a fixed deficit of an extremity caused by the loss or functional impairment of a limb, you can qualify the driver, subject to obtaining an SPE certificate. The SPE program is intended only for individuals with fixed deficits of the extremities (not for individuals with progressive diseases).*

11. Spine, Other Musculoskeletal

You must check the entire musculoskeletal system for previous surgery, deformities, limitations of motion, and tenderness. Does the driver have a diagnosis or signs of a condition known to be associated with acute episodes of transient muscle weakness, poor muscular coordination, abnormal sensations, decreased muscular tone, and/or pain? What is the:

- Nature and severity of the condition?
- Degree of limitation present?
- Likelihood of progressive limitation?
- Likelihood of gradual or sudden incapacitation?

12. Neurological

You must examine the driver for impaired equilibrium, coordination, and speech pattern. Does the driver have ataxia? Are deep tendon reflexes asymmetric? Are patellar reflexes normal? Is Babinski's reflex negative or normal? Are there any sensory or positional abnormalities?

Does an abnormal finding suggest a condition that might interfere with safe CMV operation? You should not make a certification decision until the etiology is confirmed, and treatment has been shown to be adequate/effective and safe.

Determine Certification Status

Determine Certification Status — Medical Examiner Responsibility

The Federal Motor Carrier Safety Administration (FMCSA) relies on you, the medical examiner, to assess and determine if the commercial motor vehicle (CMV) driver meets the physical qualification requirements cited in 49 CFR 391.41. In some cases, you will also consider any reports and recommendations from the primary care provider and/or specialists treating the driver to supplement your examination and ensure adequate medical assessment.

As a medical examiner, you are responsible for making the certification decision and signing the Medical Examination Report form. You issue a Medical Examiner's Certificate to the drivers you determine to be medically fit for duty.

Your certification decision is limited to the certification and disqualification options printed on the Medical Examination Report form. The maximum time for which you can certify a driver is 2 years. You can, however, certify for a period of time less than 2 years.

Certification Status

When you determine that a driver is medically fit to drive and also able to perform non-driving responsibilities, you will certify the driver and issue a Medical Examiner's Certificate.

When you determine that a driver has a health history or condition that does not meet physical qualification standards, you must not certify the driver. However, you should complete the examination to determine if the driver has more than one disqualifying condition. Some conditions are reversible, and the driver may take actions that will enable him/her to meet qualification requirements if treatment is successful.

Discussion Regarding Certification Decision

You must discuss your certification decision with the driver.

Ensure that the driver understands the certification decision. When you:

Certify — discussion may include:

- Reason for periodic monitoring and shortened examination interval.
- Additional requirements associated with certification.
- Medical Examiner's Certificate expiration information:
    - Occurs at midnight on the expiration date.
    - Has no grace period.

Disqualify — discussion may include:

- Reason for disqualification.
- Steps that can be taken to meet certification standards.
- Temporary disqualification.
    - Reason (condition or medication).
    - Length of waiting period.
    - Conditions that could restart the waiting period.
    - List of any documentation the driver is to provide to the medical examiner.

NOTE: *A driver is certified from the date of examination. If only the disqualifying condition, e.g., blood pressure, is evaluated at the next examination following temporary disqualification, the date of the initial examination is used to calculate the certification period. If the examiner performs a complete physical examination, then the certification period is calculated from the date of this examination.*

Determine Certification Status — Record-keeping Responsibility

Regulations — You must document the driver physical examination

You must record the results of every driver physical examination, substantially in accordance with the Medical Examination Report form and the instructions cited in 49 CFR 391.43.

Medical Examination Report Form

- You are to retain the driver medical records for a minimum of 3 years.
- You will need to provide a copy to the driver who is applying for, or renewing, a:
    - Skill Performance Evaluation (SPE) certificate.
    - Diabetes exemption certificate.
    - Vision exemption certificate.

Medical Examiner's Certificate

- Provide the original to the driver you examined and found medically fit for duty.
- You must retain a copy of the driver medical records, including the certificate, for a minimum of 3 years.
- You may provide a copy to a prospective or current employer upon request.
- The driver must carry the Medical Examiner's Certificate while operating a CMV. The certificate may be:
    - The original certificate.
    - A copy of the original certificate.
    - A reduced-size copy of the original certificate (e.g., wallet size).

Certify

As a medical examiner, you determine when a driver meets physical qualification requirements. The only requirements you can stipulate when certifying a driver are those in the "Note certification status here" section of Medical Examination Report form and on the Medical Examiner's Certificate. You also determine when the driver must repeat the physical examination for continuous certification. Although you cannot exceed the maximum certification period, you are never required to certify a driver for a certification interval longer than what you deem necessary to adequately monitor driver medical fitness for duty.

Certify — Determine Certification Interval Overview

Regulations — Maximum certification 2 years

Qualify for 2-Year Certificate

Note certification status here. See Instructions to the Medical Examiner for guidance.

☒ Meets standards in 49 CFR 391.41; qualifies for 2 year certificate
☐ Does not meet standards
☐ Meets standards, but periodic monitoring required due to _____
Driver qualified only for: ☐3 months ☐6 months ☐1 year ☐ Other

Temporarily disqualified due to (condition or medication):_____

Return to medical examiner's office for follow up on _____

Figure 12 - Medical Examination Report: 2 Year Certification

When your examination finds that the driver meets all physical qualification standards, you can certify the driver for the maximum 2 years.

- Mark the "Meets standards in 49 CFR 391.41; qualifies for 2 year certificate" box.
- Verify that the expiration date is 2 years from the date of the physical examination.

Qualify — With Periodic Monitoring (less than 2 years)

Note certification status here. See Instructions to the Medical Examiner for guidance.

☐ Meets standards in 49 CFR 391.41; qualifies for 2 year certificate
☐ Does not meet standards
☒ Meets standards, but periodic monitoring required due to Stage 2 Hypertension
Driver qualified only for: ☒3 months ☐6 months ☐1 year ☐ Other

Temporarily disqualified due to (condition or medication):_____

Return to medical examiner's office for follow up on _____

Figure 13 - Medical Examination Report: Certification with Periodic Monitoring

You will certify for less than 2 years when a need exists to monitor the medical fitness for duty of the driver more frequently. Some of the Federal Motor Carrier Safety Administration (FMCSA) medical guidelines include recommendations for maximum certification intervals 1 year or less. Recommended maximum certification periods are considered best practices. You are never required to certify a driver for a certification interval longer than what you deem necessary to adequately monitor driver medical fitness for duty.

- Mark the "Meets standards, but periodic monitoring required due to _____" box.
- Note the reason for periodic monitoring.
- Indicate the length of certification by checking 3 or 6 months, 1 year, or Other and write in the time frame (e.g., 1 month).
- Calculate the expiration date from the date of the initial physical examination, not a follow-up examination date.

Certify — Require Driver to Wear Corrective Lenses and/or Hearing Aid

Regulations — Maximum certification 2 years with corrective lenses and/or hearing aid

Qualify – With Requirement to Wear Corrective Sensory Perception Device

- [x] Wearing corrective lense
- [x] Wearing hearing aid
- [ ] Accompanied by a _____ waiver/ exemption. Driver must present exemption at time of certification.
- [ ] Skill Performance Evaluation (SPE) Certificate
- [ ] Driving within an exempt intracity zone (See 49 CFR 391.62)
- [ ] Qualified by operation of 49 CFR 391.64

Medical Examiner's signature *Jamie L. Wilson, PA*
Medical Examiner's name Jamie L. Wilson, PA.
Address 189 North State, Salt Lake City, UT 84001
Telephone Number 801-555-5555

Figure 14 – Medical Examination Report: Certification with Requirement to Wear Corrective Sensory Perception Device

As a medical examiner, you must specify, as a requirement for certification, that a driver wear corrective lenses and/or a hearing aid when that driver has to use one or both to meet the vision and/or hearing physical qualification requirements.

- Mark the "Wearing corrective lenses" and/or "Wearing hearing aid" option to indicate that the driver must wear the sensory perception correction device while driving.
- You can combine a requirement to wear a sensory perception correction device with a 2-year certification, periodic monitoring certification, and/or any of the other four listed options.

Certify — Require Driver to Meet Alternate Standard 49 CFR 391.49

Regulations — Maximum certification 2 years when driver must meet alternate standard

Qualify – Skill Performance Evaluation (SPE) Certificate

- [ ] Wearing corrective lense
- [ ] Wearing hearing aid
- [ ] Accompanied by a _____ waiver/ exemption. Driver must present exemption at time of certification.
- [x] Skill Performance Evaluation (SPE) Certificate
- [ ] Driving within an exempt intracity zone (See 49 CFR 391.62)
- [ ] Qualified by operation of 49 CFR 391.64

Medical Examiner's signature *Jamie L. Wilson, PA*
Medical Examiner's name Jamie L. Wilson, PA.
Address 189 North State Salt Lake City, UT 84001
Telephone Number 801-555-5555

Figure 15 - Medical Examination Report: Certification When Driver Must Meet Alternate Standard

By marking the SPE option, you certify that the driver:

- Fails to meet one or more of the limb requirements of 49 CFR 391.41(b)(1) or (2).
- Meets all other physical requirements cited in 49 CFR 391.41(b).
- Must have both a valid SPE certificate and Medical Examiner's Certificate to drive.

As a medical examiner, you start the SPE program application process by first determining if the driver is otherwise medically qualified. The SPE certificate is issued for 2 years. A copy of the Medical Examination Report form is required with initial and renewal SPE applications.

NOTE: *The driver with an SPE certificate meets an alternative qualification standard for 49 CFR 391.41(b)(1) or (2).*

Certify — Require Driver To Have a Federal Exemption

Regulations — Maximum certification 1 year

Qualify – With a Federal Exemption

☐ Wearing corrective lense
☐ Wearing hearing aid
☒ Accompanied by a Federal Diabetes waiver/exemption. Driver must present exemption at time of certification.
☐ Skill Performance Evaluation (SPE) Certificate
☐ Driving within an exempt intracity zone (See 49 CFR 391.62)
☐ Qualified by operation of 49 CFR 391.64
Medical Examiner's signature Jamie L. Wilson, PA
Medical Examiner's name Jamie L. Wilson, PA.
Address 189 North State Salt Lake City, UT 84001
Telephone Number 801-555-5555

Figure 16 - Medical Examination Report: Certification with Federal Exemption

There are two Federal medical exemption programs for drivers:

- The Diabetes Exemption Program allows some drivers with diabetes mellitus who use insulin replacement therapy to drive a commercial motor vehicle (CMV).
- The Vision Exemption Program allows some drivers with monocular vision to drive a CMV.

To learn more about the Federal medical exemption programs, visit http://www.fmcsa.dot.gov/rules-regulations/topics/medical/exemptions.htm.

As a medical examiner, you start the exemption program application process by first determining if the driver is otherwise medically qualified except for monocular vision or the use of insulin. A copy of the Medical Examination Report form is required with both the initial and renewal Federal exemption applications.

By marking “Accompanied by a _____ waiver/exemption,” circling "exemption," and writing in the Federal program name, you certify that the driver:

- Fails to meet the insulin use requirement of 49 CFR 391.41(b)(3) or the monocular vision requirement of 49 CFR 391.41(b)(10).
- Meets all other physical requirements cited in 49 CFR 391.41(b).
- Must also have a valid Federal medical exemption certificate to drive.

Qualify – By Operation of 49 CFR 391.64

- Applies to a small number of individuals who participated in the FMCSA studies conducted prior to the implementation of the medical exemption programs.
- By checking the "By Operation of 49 CFR 391.64," option, you certify that the driver:
  - Presented documentation of participation in a study.
  - Continues to meet 49 CFR 391.64 requirements.
  - Is otherwise medically fit for duty.

Qualify – Driving Within an Exempt Intracity Zone

- Intracity zones are geographical areas defined in the regulations.
- By checking the "Driving within an exempt intracity zone (See 49 CFR 391.62)" option, you certify that the driver:
  - Is otherwise medically fit for duty except for the exempted condition.
  - The exempted condition remains stable.
  - Remains in medical compliance with the requirements of section 391.62.

Disqualify

As a medical examiner, you must disqualify the driver who does not meet one or more of 49 CFR 391.41 physical qualification standards. You should complete the physical examination of the driver and discuss with him/her the reason(s) for disqualification and any steps that can be taken to meet certification standards.

Disqualify — Discuss and Document Decision

Regulations — Disqualify driver who does not meet standards

As a medical examiner, you must disqualify the driver who:

- Fails to meet a physical qualification requirement cited in the standards (e.g., vision test result, hearing loss test result, epilepsy, or insulin use).
- You believe has a medical condition that endangers the health and safety of the driver and the public.

Disqualify (Does Not Meet Standards)

Note certification status here. See Instructions to the Medical Examiner for guidance.

☐ Meets standards in 49 CFR 391.41; qualifies for 2 year certificate
☒ Does not meet standards
☐ Meets standards, but periodic monitoring required due to _____
Driver qualified only for: ☐3 months ☐6 months ☐1 year ☐ Other

Temporarily disqualified due to (condition or medication):_____

Return to medical examiner's office for follow up on _____

Figure 17 - Medical Examination Form: Disqualify

Document the decision to disqualify on the Medical Examination Report form.

- Mark the "Does not meet standards" box.
- Note the reason for disqualification.
- Document the discussion with the driver explaining the rationale for the decision to disqualify.

NOTE: *DO NOT issue a medical examiner's certificate.*

Before a disqualified driver can return to commercial motor vehicle (CMV) driving, a medical examiner must find the driver to be medically fit for duty.

Disqualify Temporarily

Note certification status here. See Instructions to the Medical Examiner for guidance.

☐ Meets standards in 49 CFR 391.41; qualifies for 2 year certificate
☒ Does not meet standards
☐ Meets standards, but periodic monitoring required due to _____
Driver qualified only for: ☐3 months ☐6 months ☐1 year ☐ Other

Temporarily disqualified due to (condition or medication): Post-CABG 6 weeks (1/15/2008)
Return to medical examiner's office for follow up on or after 4/16/2008 3 mo waiting period

Figure 18 - Medical Examination Form: Disqualify Temporarily

When the disqualifying condition or treatment has a clinical course likely to restore driver medical fitness for duty, you may complete the:

- "Temporarily disqualified due to (condition or medication):_____" line.
- "Return to medical examiner's office for follow up on _____" line.

When a recommended waiting period is applicable, the date:

- Should be greater than or equal to the waiting period.
- Should be greater than or equal to the longest waiting period when the driver has multiple medical conditions.

NOTE: *DO NOT issue a medical examiner's certificate.*

REMEMBER*: The driver is disqualified and not allowed to operate a CMV until a medical examiner finds the driver to be medically fit for duty.*

Regulations — Medical examiner issues certificate to medically qualified driver

When you find that the driver examined is medically qualified to operate a commercial motor vehicle (CMV) in accordance with 49 CFR 391.41(b), you should complete a certificate as prescribed in 49 CFR 391.43(h) and furnish the original to the person who was examined. You may provide a copy to a prospective or current employer requesting one.

Issue Medical Examiner's Certificate

When you find that the driver examined is medically qualified to operate a commercial motor vehicle (CMV) in accordance with 49 CFR 391.41(b), you should complete a certificate as prescribed in 49 CFR

391.43(h) and furnish the original to the person who was examined. You may provide a copy to a prospective or current employer requesting one.

MEDICAL EXAMINER'S CERTIFICATE

I certify that I have examined _____ in accordance with the Federal Motor Carrier Safety Regulations (49 CFR 391.41-391.49) and with knowledge of the driving duties, I find this person is qualified; and, if applicable, only when:

- ☐ wearing corrective lenses
- ☐ wearing hearing aid
- ☐ accompanied by a _____ waiver exemption
- ☐ driving within an exempt intracity zone (49 CFR 391.62)
- ☐ accompanied by a Skill Performance Evaluation Certificate (SPE)
- ☐ Qualified by operation of 49 CFR 391.64

The information I have provided regarding this physical examination is true and complete. A complete examination form with any attachment embodies my findings completely and correctly, and is on file in my office.

SIGNATURE OF MEDICAL EXAMINER	TELEPHONE	DATE

MEDICAL EXAMINER'S NAME (PRINT)

☐ MD ☐ DO ☐ Chiropractor ☐ Physician Assistant ☐ Advanced Practice Nurse

MEDICAL EXAMINER'S LICENSE OR CERTIFICATE NO./ISSUING STATE

SIGNATURE OF DRIVER	DRIVER'S LICENSE NO.	STATE

ADDRESS OF DRIVER

MEDICAL CERTIFICATE EXPIRATION DATE

Figure 19 - Medical Examiner's Certificate

Regulations — Medical examiner issues certificate to medically qualified driver

1. Ensure that the name of the driver matches the name on the Medical Examination Report form.
2. Mark any certification requirement that applies:
    - wearing corrective lenses
    - wearing hearing aid
    - accompanied by a _____ waiver or exemption
    - driving within an exempt intracity zone (49 CFR 391.62)
    - accompanied by a Skill Performance Evaluation (SPE) Certificate qualified by operation of 49 CFR 391.64
3. Write “Federal vision” or “Federal diabetes” when exemption certificate is required.
4. Sign the certificate and complete medical examiner information.
5. Write the date of the medical examination.
6. Have the driver sign the certificate and compare this with the information provided by the driver.
7. Verify that the expiration date does not exceed the certification interval (maximum certification period is 2 years).

Part IV - Physical Qualification Standards and Advisory Criteria

Physical Qualification Standards (Regulations) versus Advisory Criteria (Medical Guidelines)

As a medical examiner, it is important for you to distinguish between medical standards and medical guidelines. Regulations/standards are laws and must be followed. Whereas guidelines, such as advisory criteria and medical conference reports, are recommendations. While not law, the guidelines are intended as best practices for medical examiners.

Guidelines have been issued by the Federal Motor Carrier Safety Administration (FMCSA) to provide you with additional information and are based on medical literature. If you choose not to follow the guidelines, the reason(s) for the variation should be documented. You are responsible for determining if the commercial motor vehicle (CMV) driver is medically qualified and is safe to drive under the Federal Motor Carrier Safety Regulations (FMCSRs).

The physical qualification regulations for CMV drivers in interstate commerce are found at http://www.fmcsa.dot.gov/rules-regulations/administration/fmcsr/fmcsrruletext.asp?section=391.41#r49CFR391.41-b (Section 391.41(b) of the FMCSRs).

The advisory criteria under 391.41 are recommendations to help you as a medical examiner perform medical examinations and determine the medical fitness for duty of a driver. They are accessible on the FMCSA Web site at http://www.fmcsa.dot.gov/rules-regulations/administration/medical.htm.

Ongoing Standards and Guidelines Review Process

FMCSA has an ongoing process for reviewing all Federal medical standards and guidelines used to determine driver medical fitness for duty.

To ensure that these regulations and guidelines are evidence-based, FMCSA uses a number of methods for gathering medical data, including, but not limited to:

- Agency expert analyses of Federal data and other relevant international, national, and State data.
- Interagency, national, and international regulatory analyses.
- Evidence reports.
- Medical Expert Panels (MEPs).
- Medical Review Board (MRB), a committee established in accordance with the Federal Advisory Committee Act.

First, FMCSA formulates questions relating to a specific medical condition and the associated impact on driving. FMCSA then gathers information through a systematic review of the available scientific literature. The findings are summarized in evidence reports that reflect current diagnostic and therapeutic medical advances.

For some topics, FMCSA convenes an MEP. The members of the MEP vary according to the specific topic and panel expertise. The task of the MEP is to provide an opinion for consideration by FMCSA.

Evidence reports, executive summaries, and MEP opinions are posted on the FMCSA Web site at http://www.fmcsa.dot.gov/rules-regulations/topics/mep/mep-reports.htm.

The MRB meets three to four times each year on specific topics. The MRB independently reviews evidence reports and if an MEP was convened, also reviews the MEP opinion. The MRB deliberates and proposes recommendations for consideration by FMCSA.

FMCSA considers the evidence reports, the MEP opinion, and the recommendations from the MRB when reviewing medical standards and guidelines. FMCSA also considers other factors such as feasibility and impact. FMCSA posts information regarding proposed changes to the current standards and guidelines on the FMCSA Medical Program Web page at http://www.fmcsa.dot.gov/rules-regulations/topics/medical/medical.htm. Proposed changes to guidelines will accompany the standards as guidance and are subject to public notice-and-comment rulemaking.

This Medical Examiner Handbook will be updated as new standards and guidelines are approved by FMCSA.

About 49 CFR 391.41

49 CFR 391.41 Physical qualifications for drivers describes the medical fitness for duty qualification standards that an individual must meet in order to be qualified to operate an interstate commercial motor vehicle (CMV).

You can access 391.41 on the FMCSA Web site at http://www.fmcsa.dot.gov/ by entering "391.41" in the "RULES & REGULATIONS" text box, and selecting "Go." From the same area of the Web site, you can also access 391.41 by selecting the "Medical Program" link and then the "Physical Qualifications" link.

The driver medical qualification standards describe requirements that are critical to evaluation of medical fitness for duty in commercial drivers. Your knowledge of the physical and mental demands of commercial driving and your medical judgment determine whether a particular condition interferes with driver ability of the person to operate a CMV safely.

Vision

Adequate central and peripheral vision are necessary for safe driving.

The driver must perceive the relative distance of objects, and react appropriately to vehicles in adjacent lanes or reflected in the mirrors, to pass, make lane changes, and avoid other vehicles on the road.

The visual demands of driving are magnified by vehicles that have larger blind spots, longer turning radiuses, and increased stopping times.

Vision Regulation 4 CF 391.41(b)(10)

Regulation 49 CFR 391.41(b)(10)

"A person is physically qualified to drive a commercial motor vehicle if that person —

Has distant visual acuity of at least 20/40 (Snellen) in each eye without corrective lenses or visual acuity separately corrected to 20/40 (Snellen) or better with corrective lenses, distant binocular acuity of at least 20/40 (Snellen) in both eyes with or without corrective lenses, field of vision of at least 70º in the horizontal meridian in each eye, and the ability to recognize the colors of traffic signals and devices showing standard red, green, and amber."

- The required tests measure visual acuity, peripheral horizontal visual fields, and color.
- Visual acuity is measured in each eye individually and both eyes together.

- Distant visual acuity of at least 20/40 (Snellen) in each eye, with or without corrective lenses.
- Distant binocular visual acuity of at least 20/40 (Snellen) in both eyes, with or without corrective lenses.
- Field of vision of at least 70° in the horizontal meridian in each eye.
- Color vision must be sufficient to recognize traffic signals and devices showing the standard red, amber, and green traffic signal colors.
- When corrective lenses are used to meet vision qualification requirements, the corrective lenses must be used while driving.
- A medical examiner, ophthalmologist, or optometrist may perform and certify vision test results. The medical examiner determines driver certification status.
- Monocular vision is disqualifying.

Health History and Physical Examination

Health History

Here are the vision questions that are asked in the health history. Yes responses require clarification and documentation.

- Eye disorders?
- Impaired vision (do not include corrective lenses)?

Here are important vision questions to ask.

- Symptoms related to or caused by eye diseases?
- Use of ophthalmic preparations that have side effects that can affect safe driving?

Physical Examination

Examine the eyes for:

- Pupillary equality.
- Reaction to light and accommodation.
- Ocular motility.
- Ocular muscle imbalance.
- Extraocular movements.
- Nystagmus.
- Exophthalmos.

Note abnormal findings. Discuss the value of regular vision examinations in early detection of eye diseases.

Ask about:

- Retinopathy.
- Cataracts.
- Aphakia.

- Glaucoma.
- Macular degeneration.

Medical examiners cannot diagnose these diseases or conditions because most do not have the equipment necessary to diagnose them.

Required Tests

Required vision screening tests include central visual acuity, peripheral vision, and color vision.

Central visual acuity

The Snellen chart or the Titmus Vision Tester measures static central vision acuity. The requirement for central distant visual acuity is at least 20/40 in each eye and distant binocular visual acuity of at least 20/40. Test results must be recorded in Snellen-comparable values.

Eyeglasses or contact lenses may be worn to meet distant visual acuity requirements. When corrective lenses are worn to meet vision qualification requirements, corrective lenses must be worn while driving.

Snellen Distant Acuity Test

The Snellen chart is widely used for measuring central visual acuity.

- The Snellen wall chart should be 20 feet away from the driver.
    - Measure distance.
    - Mark testing location.
- The chart should be illuminated with white light.
- The driver may wear corrective lenses during the examination.
- When the driver is reading larger lines easily, the medical examiner may ask the driver to skip to smaller lines.

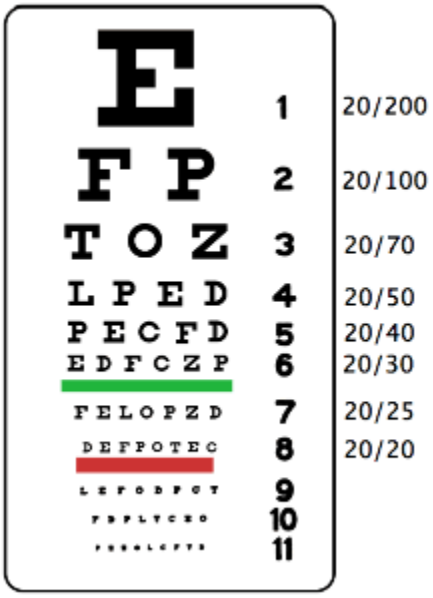


Figure 20 - Snellen Chart

Snellen chart is illustrative only and not suitable for vision testing

Visual Acuity Test Results

The Snellen eye test results use 20 feet as the norm, represented by the numerator in the Snellen test result. The number of the last line of type the driver read accurately is recorded as the denominator in the Snellen test result.

The minimum qualification requirement is distant visual acuity of at least 20/40 in each eye and distant

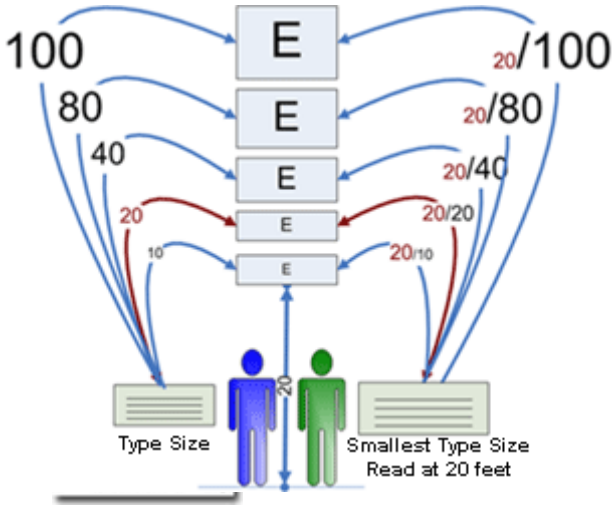


Figure 22- Visual Acuity Test Results

binocular acuity of at least 20/40.

If a test other than the Snellen is used to test visual acuity, the test results should be recorded in Snellen-equivalent values.

Types of Snellen charts

There are versions of the Snellen chart that compensate for failure to read letters because of limited English reading skill, not because of poor eyesight. One example is the "Snellen Eye Chart - Illiterate" that requires the individual to indicate the orientation of the letter "E" on the chart.

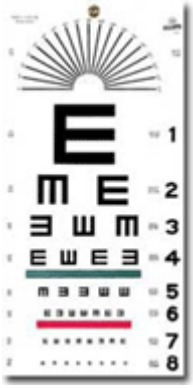


Figure 21 - Snellen Eye Chart – Illiterate

Snellen chart is illustrative only and not suitable for vision testing

Peripheral vision

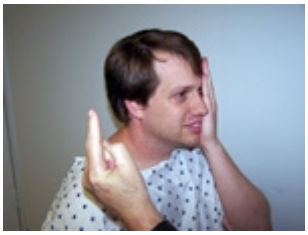
The requirement for peripheral vision is at least 70° in the horizontal meridian for each eye. In the clinical setting, some form of confrontational testing is often used to evaluate peripheral vision. When test results are inconclusive, the evaluation should be performed by a specialist with equipment capable of precise measurements.

Protocol for Screening the Visual Field

The driver must have at least 70° in the horizontal meridian for each eye. Some form of confrontational testing that tests vision of selected horizontal points is generally used in the clinical setting.

A "Protocol for Screening the Visual Field Using a Confrontation Method" is found in Appendix E of the Visual Requirements and Commercial Drivers report.

Right eye examination



1. Stand or sit approximately two feet in front of the driver so that your eyes are at about the same level as the eyes of the driver.
2. Instruct the driver to use the palm of the left hand to cover the left eye.
3. Ask the driver to fixate on your left eye.
4. Extend your arms forward and position your hands halfway between yourself and the driver. Position your right hand one foot to the right of the straight-ahead axis and six inches above the horizontal plane. Position your left hand one-and-a-half feet to the left of the straight-ahead axis and six inches above the horizontal plane.
5. Ask the driver to confirm when a moving finger is detected. Repeat the procedure with your hands positioned six inches below the horizontal meridian.

Left eye examination

Repeat the procedure for the left eye (steps 2 through 5), making sure the driver fixates on your right eye and the hand placement is appropriately reversed.

When test results are inconclusive, obtain specialist evaluation for precise measurement of peripheral vision.

Color vision

The color vision requirement is met by the ability to recognize and distinguish among red, amber, and green, the standard colors of traffic control signals and devices. True color perception is not required.

Additional Evaluation and/or Ancillary Tests

Eye trauma and ophthalmic disease can adversely impact visual performance and interfere with safe driving. Some ophthalmic diseases are seen more frequently with increased age or are secondary to other diseases such as diabetes mellitus or atherosclerosis.

The clinical setting may not provide the necessary equipment to evaluate ophthalmic diseases adequately. The medical examiner determines if the vision symptoms and signs or underlying disease require evaluation by an ophthalmologist or optometrist. The medical examiner then considers the documented results and the specialist opinion when determining if the vision meets qualification requirements.

Certification and Documentation

The qualified driver meets all of the following requirements:

- Distant acuity of at least 20/40 in each eye,
- Binocular acuity of at least 20/40,
- Horizontal field of vision of at least 70° measured in each eye, and
- The ability to recognize and distinguish among traffic control signals and devices showing standard red, amber, and green colors.

The medical examiner may certify the driver for up to 2 years.

The driver who wears corrective lenses to meet the vision qualification requirements must wear corrective lenses while driving. The medical examiner marks the "wearing corrective lenses" checkbox on both the Medical Examination Report form and the medical examiner's certificate. The examiner should advise the

driver to carry a spare set of eyeglasses. The driver avoids both stress and delay when lost or damaged eyeglasses or uncomfortable contact lenses can be replaced immediately.

Monocular vision

Monocular vision occurs when the vision requirements are met in only one eye, with or without the aid of corrective lenses, regardless of cause or degree of vision loss in the other eye. In low illumination or glare, monocular vision causes deficiencies in contrast recognition and depth perception compared to binocular vision. Monocular vision is disqualifying.

The medical examiner should complete the certification examination of the driver with monocular vision and determine if the driver is otherwise qualified. The driver with monocular vision who is otherwise qualified may want to apply for a Federal vision exemption.

The otherwise medically qualified driver with a Federal vision exemption

At the annual recertification examination, the driver presents a valid vision exemption and a copy of the specialist eye examination report before receiving the medical examiner's certificate. Certify the driver for up to 1 year. Mark the "accompanied by" exemption checkbox and write "vision" to identify the type of Federal exemption.

The otherwise medically qualified driver applying for a Federal vision exemption

The driver applying for a vision exemption should include a copy of the Medical Examination Report form and the medical examiner's certificate with the application to the Federal Vision Exemption Program.

Certify the driver for up to 1 year. Mark the "accompanied by" exemption checkbox and write "vision" to identify the type of Federal exemption. Provide the driver with a copy of the Medical Examination Report.

The medical examiner does not issue a Federal vision exemption. Both the medical examiner's certificate and Federal vision exemption are required before the driver with monocular vision can legally drive a commercial vehicle in interstate commerce.

See the Federal Vision Exemption Program section of this handbook.

Ophthalmic Preparations

Determine if the treatment is having the desired effect of preserving vision that meets qualification requirements without any visual and/or systemic side effects that interfere with safe driving (e.g., stinging, blurring, decreased night vision, sensitivity to glare, headache, or allergic reaction).

Categories include:

Age-related Macular Degeneration

Classifications of agents used to treat age-related macular degeneration include:

- Antioxidants and zinc.
- Vascular endothelial growth factor (VEGF) inhibitors.

Anti-allergy (Allergic Conjunctivitis)

Classifications of anti-allergy agents used to treat allergic conjunctivitis include:

- Oral and topical antihistamines.
- Topical decongestants.
- Antihistamine/decongestant combinations.

- Mast cell stabilizers.
- Topical nonsteroidal anti-inflammatory.

Antiglaucoma Agents

Classifications of agents used to treat glaucoma include:

- Prostaglandin analogs.
- Beta adrenergic blocking agents.
- Carbonic anhydrase inhibitors.
- Alpha agonists.
- Cholinergic agonists.
- Osmotic agents.
- Combinations.

Anti-infective Agents (Bacterial Conjunctivitis)

Classifications of anti-infective agents used to treat bacterial conjunctivitis include oral and topical antibiotics.

Dry Eyes

Classifications of agents used to treat dry eyes include:

- Lubricants.
- Nonsteroidal anti-inflammatory.
- Topical cyclosporine.

Ophthalmic Diseases

Cataracts

Cataracts are a common cause of visual disturbances in the adult population. The slow, progressive opacification of the crystalline lens of the eye distorts the optical passage of light to the retina resulting in diminished visual acuity. Cataract formation can be accelerated by a number of conditions, including injury, exposure to radiation, gout, certain medications (steroids), and the presence of diabetes mellitus.

Glare, particularly during night driving in the face of oncoming headlights, may be an early symptom of cataracts. Glare, diminished overall acuity, contrast, and color resolution are compounded by the light-scattering effect of the cataracts.

Treatment for cataracts is surgical removal and placement of an intraocular lens.

Glaucoma

Glaucoma can cause deficits in peripheral vision. The abnormal regulation of intraocular pressure can result in gradual progressive atrophy of optic nerve cells. The development of chronic elevated intraocular pressure is generally painless, and the gradual loss of peripheral visual field can progress significantly before symptoms are noticed.

Glaucoma may also affect a number of subtler visual functions, such as redirection of visual attention, night vision, and color vision. With glaucomatous damage, Snellen acuity test results may not be affected, but peripheral field test results may show deficits. Specialist examination may result in early detection and treatment before the occurrence of possibly disqualifying vision loss.

Vision loss caused by glaucoma cannot be restored.

A therapeutic goal is to lower intraocular pressure to a level that preserves the existing neuronal cells and prevents further loss of the peripheral visual field deficit. Strict and ongoing compliance with prescribed ophthalmic preparations is required for successful treatment; however, antiglaucoma agents may have side effects that impact vision and interfere with safe driving.

Macular Degeneration

Macular degeneration is a leading cause of untreatable legal blindness in the United States. Macular degeneration describes many ophthalmic diseases that impact the macula function and interfere with detailed, central vision. These diseases increase in prevalence with age, affecting some 30% of all Americans by age 70. For the majority of cases, macular degeneration is a slow process resulting in subtle visual defects; however, approximately 10% of cases are a "malignant" form of the disease and cause rapid loss of central vision.

Peripheral vision is generally spared in macular degeneration. Therapeutic options are limited.

Macular degeneration causes noticeable signs and symptoms. Visual acuity drops, recovery from bright lights is lengthened, and eventually a partial or total scotoma develops in the direction of attempted gaze. Snellen-type acuity testing will detect diminishing central acuity.

Telescopic lenses redirect unaffected peripheral vision to compensate for lost central acuity, resulting in a reduced peripheral field of vision. The use of telescopic lenses is not acceptable for commercial driving.

Retinopathy

Noninflammatory damage to the retina of the eye has many causes. The most common cause of retinopathy is diabetes mellitus. Background retinopathy with microaneurysms and intraretinal hemorrhages is common after 5-7 years with diabetes mellitus. In many cases, the retinopathy does not progress beyond this stage; however, fluid leakage near the macula (diabetic macular edema) can create partial scotomas in central vision or cause gross hemorrhage in the eye which can obscure vision and eventually lead to retinal detachment and blindness. Subtler visual modalities such as contrast sensitivity, flicker fusion frequency, and color discrimination may also be affected.

Strict control of blood glucose, as well as medical control of comorbid diseases (e.g., hypertension, renal disease, cardiac disease), may prevent or delay development of retinopathy.

Medical guidelines for the driver with diabetes mellitus include:

- Annual medical examination.
- Annual ophthalmologist or optometrist eye evaluation.
- Disqualification for a diagnosis of unstable proliferative retinopathy.

Other diseases can cause retinopathy. Carcinoma-associated retinopathy is characterized by rapid onset of blindness caused by retinal degeneration, usually of photoreceptors. Proliferative retinopathy can be a complication of sickle cell disease and sickle cell-thalassemia disease. A rare but characteristic finding of systemic lupus erythematosus is retinal exudates, usually near the disk.

Hearing

Hearing plays a role in safe driving. Hearing warning sounds, such as horns, train signals, and sirens may allow the driver to react to a potential hazard before it is visible. An auditory alarm or changes in the usual sound of the engine or vehicle carriage may be the first indication that the vehicle may require maintenance.

Hearing loss can interfere with communication between the driver and other people such as dispatchers, loading dock personnel, passengers, and law enforcement officers.

Balance is required for safe driving and task performance (e.g., vehicle inspections, securing loads) and when getting into, and out of, trucks and buses.

Hearing Regulation 4 CF 391.41(b)(11)

"A person is physically qualified to drive a commercial motor vehicle if that person —

First perceives a forced whispered voice in the better ear at not less than 5 feet with or without the use of a hearing aid or, if tested by use of an audiometric device, does not have an average hearing loss in the better ear greater than 40 decibels at 500 Hz, 1,000 Hz, and 2,000 Hz with or without a hearing aid when the audiometric device is calibrated to American National Standard (formerly ASA Standard) Z24.5–1951."

The required tests screen for hearing loss in the range of normal conversational tones. Two tests are used to screen hearing: a **forced whisper** test AND/OR an **audiometric** test.

- Either test may be administered first.
- Test both ears.
- Administration of the second test may be omitted when the test results of the initial test meet the hearing requirement for that test.

Hearing requirements are:

- First perceive a forced whispered voice, in one ear, at not less than five feet.
- OR
- Have an average hearing loss, in one ear, less than or equal to 40 decibels (dB).
- When a hearing aid is used to meet the hearing qualification requirement, the hearing aid must be used while driving.
- Disqualify when both the forced whisper test AND the audiometric test are failed.

Health History and Physical Examination

Health History

Here are the hearing questions that are asked in the health history. Yes responses require clarification and documentation.

- Ear disorders?
- Loss of hearing?
- Loss of balance?

Here are important questions to ask.

- Symptoms related to or caused by ear disease?
- Use of otic preparations?

Physical Examination

Examine the ears for:

- Scarring of the tympanic membranes.
- Occlusion of the external ear canal.
- Perforated eardrums.

Note and discuss abnormal findings, including the impact on driving and certification. Hearing loss can be a symptom of a disease rather than a discrete disorder. In some cases, hearing loss may be treated and reversed.

Required Tests

The forced whisper test and audiometry are used to determine certification. These tests measure hearing loss using the frequencies found in normal conversation. Either test can be administered first. Administration of both tests is required only when the initial test results for both ears fail to meet the hearing requirement.

A hearing aid may be used during forced whisper testing. When a driver who wears a hearing aid is unable to pass a forced whisper test, referral to an audiologist, otolaryngologist, or hearing aid center is required.

Forced whisper test

- First perceives a forced whispered voice.
- In one ear.
- At not less than five feet.

A hearing aid may be worn while testing. When a hearing aid is used to qualify, the hearing aid must be worn while driving.

The testing area should be free from noise that could interfere with a valid test. Measure and mark the five-foot passing distance.

Right Ear Examination:

1. Have the driver cover the left ear.
2. Stand to the side or behind the driver to eliminate visual cues.
3. From the measured five-foot distance from the right ear, exhale fully and then whisper a sequence of words, numbers, or letters. (Avoid using only s-sounding words.)
4. Ask the driver to repeat the whispered sequence.
5. To pass, the driver must respond correctly.

Left Ear Examination:

Repeat the procedure for the left ear, making sure that the right ear is covered and that you are positioned the measured five-foot distance from the left ear.

Complete the forced whisper test for both ears, whether or not the initial test result meets the hearing requirement.

Audiometric Test

The hearing qualification requirement for the Audiometric test:

- Has an average hearing loss (average of test results for 500 hertz (Hz), 1,000 Hz, and 2,000 Hz).
- In one ear.
- Less than or equal to 40 dB.

The hearing requirement for an audiometric test is based on hearing loss only at the 500 Hz, 1,000 Hz, and 2,000 Hz frequencies that are typical of normal conversation.

The test results are for an audiometer calibrated to the American National Standards Institute (ANSI) Z24.5-1951 standard. When an audiometer that is calibrated to a different standard is used, the test results must be converted to the ANSI standard. To convert International Organization for Standardization (ISO) test results to the ANSI standard, subtract from the ISO test results: 14 dB for 500 Hz, 10 dB for 1,000 Hz, and 8.5 dB for 2,000 Hz.

The area selected for testing should be free from noise that could interfere with a valid test.

1. **Record hearing test results for each ear at 500 Hz, 1,000 Hz, and 2,000 Hz (ANSI standard).**
2. **Average the readings for each ear by adding the test results and dividing by 3.**
3. **To pass, one ear must show an average hearing loss that is less than or equal to 40 dB.**

Hearing aid

When a hearing aid is to be worn during audiometric testing, an audiologist or hearing aid center should perform the test using appropriate audiometric equipment.

Additional Evaluation and/or Ancillary Tests

Ear trauma and otic disease can adversely impact hearing and/or balance and interfere with safe driving and performance of related tasks. When findings are inconclusive regarding medical fitness for duty, ancillary tests and/or additional evaluation by a specialist, usually an audiologist or otolaryngologist, may be required to obtain sufficient medical information to determine certification status.

Certification and Documentation

The qualified driver, with or without the use of a hearing aid:

- First perceives a forced whispered voice, in one ear, at not less than five feet.

OR

- Has an average hearing loss, in one ear, less than or equal to 40 dB at 500 Hz, 1,000 Hz, and 2,000 Hz.

The medical examiner may certify the driver for up to 2 years.

The driver who uses a hearing aid to qualify must wear a hearing aid while driving. The medical examiner marks the "wearing hearing aid" checkbox on both the Medical Examination Report form and the medical examiner's certificate. The examiner should advise the driver to carry a spare power source for the hearing aid.

Advisory Criteria/Guidance

Otic Preparations

Determine if the treatment is having the desired effect of preserving hearing, reducing inflammatory disorders causing pain, and/or controlling dizziness causing loss of balance. Determine if the treatment has any effects and/or side effects that interfere with safe driving (e.g., drug, food, and/or alcohol interactions, excessive drowsiness, or allergic reaction).

Categories include:

Anti-acute Benign Positional Vertigo

Classifications of agents used to treat acute vertigo include:

- Antihistaminic antiemetics.
- Benzodiazepines.
- Anticholinergics.
- Sympathomimetics.

Anti-infective/Anti-inflammatory Agents

Infection and inflammation can be of the external auditory canal (EAC) and/or the middle ear. Classifications of topical drops used to treat EAC include:

- Antibiotics.
- Steroids.
- Antibiotic-steroid combinations.

Classification of oral drugs used to treat infections and inflammation of the middle ear (otitis media) include:

- Antibiotics.
- Steroids.

Otic Disease and Conditions

Meniere's Disease

The *Conference on Neurological Disorders and Commercial Drivers* report recommends disqualification when there is a diagnosis of Meniere's disease.

Vertigo

Vertigo is generally caused by an inner ear abnormality. Uncontrolled vertigo is disqualifying.

The *Conference on Neurological Disorders and Commercial Drivers* report recommends that the driver may be certified after completing at least 2 months symptom free with a diagnosis of:

- Benign positional vertigo.
- Acute and chronic peripheral vestibulopathy.

Labyrinthine Fistula

The *Conference on Neurological Disorders and Commercial Drivers* report recommends disqualification when there is a diagnosis of labyrinthine fistula.

Nonfunctioning Labyrinth

The *Conference on Neurological Disorders and Commercial Drivers* report recommends disqualification when there is a diagnosis of nonfunctioning labyrinth.

To review the Conference of Neurological Disorders and Commercial Drivers report, visit: http://www.fmcsa.dot.gov/facts-research/research-technology/publications/medreports.htm.

Hypertension

Americans With Hypertension

According to the Third National Health and Nutrition Examination Survey, 29% of all U.S. adults 18 years and older have BP greater than or equal to 140/90 or are taking medication for hypertension. The prevalence of hypertension is nearly equal for men and women. Among adults with hypertension, 78% are aware of their condition, 68% are treated with antihypertensive medication, and 64% achieve BP less than 140/90 with treatment.

Risks Associated With Hypertension

Hypertension alone is unlikely to cause sudden collapse; however, hypertension is a potent risk factor for the development of more serious cardiovascular disease (CVD), peripheral vascular disease, and chronic renal insufficiency. BP greater than or equal to 140/90 is deemed high for most individuals without other significant cardiovascular risk factors.

In individuals ranging from 40 to 89 years of age, for every 20 mm Hg systolic or 10 mm Hg diastolic increase in BP, there is a doubling of mortality from both ischemic heart disease and stroke. The relationship between BP and risk of a CVD event is continuous, consistent, and independent of other risk factors. Both elevated systolic and diastolic BP are risk factors for coronary heart disease (CHD).

Commercial Drivers at Greater Risk for Developing Hypertension

Once in the profession, commercial motor vehicle (CMV) drivers have a greater propensity to develop hypertension than their peers in other professions. The Cardiovascular Advisory Panel Guidelines for the Medical Examination of Commercial Motor Vehicle Drivers includes data from Ragland, et al., demonstrating that the percentage of drivers with hypertension increased from 29% in drivers with fewer than 10 years of driving experience, to 32% in drivers with 10-20 years of experience, and to 39% in drivers with more than 20 years of driving experience. As the years of experience rise, part of the increase in hypertension may relate to accompanying aging, increase in body mass, or decline in physical activity.

Effective Treatment Reduces Risk

High BP can be a modifiable CVD risk factor. Lifestyle modification and pharmacotherapy are the mainstays of antihypertensive treatment regimens. Effective hypertension management reduces cardiovascular morbidity and mortality. The Chicago Heart Association Detection Project in Industry found that antihypertensive therapy reduces the incidence of stroke, myocardial infarction, and heart failure.

Contemporary medical therapies are effective in lowering BP, reducing complications, and are generally regarded as safe.

Blood Pressure (BP) Regulations 4 CF 391.41(b)(6) an 4 CF 391.43(f)

49 CFR 391.41(b)(6)

"A person is physically qualified to drive a commercial motor vehicle if that person —

Has no current clinical diagnosis of high blood pressure likely to interfere with his/her ability to operate a commercial motor vehicle safely."

49 CFR 391.43(f) Blood Pressure (BP)

"If a driver has hypertension and/or is being medicated for hypertension, he or she should be recertified more frequently. An individual diagnosed with Stage 1 hypertension (BP is 140/90–159/99) may be certified for one year. At recertification, an individual with a BP equal to or less than 140/90 may be certified for one year; however, if his or her BP is greater than 140/90 but less than 160/100, a one-time certificate for 3 months can be issued. An individual diagnosed with Stage 2 (BP is 160/100-179/109) should be treated and a one-time certificate for 3-month certification can be issued. Once the driver has reduced his or her BP to equal to or less than 140/90, he or she may be recertified annually thereafter. An individual diagnosed with Stage 3 hypertension (BP equal to or greater than 180/110) should not be certified until his or her BP is reduced to 140/90 or less, and may be recertified every 6 months."

Health History and Physical Examination

General Purpose of Health History and Physical Examination

The general purpose of the history and physical examination is to detect the presence of physical, mental, or organic conditions of such character and extent as to affect the ability of the driver to operate a CMV safely. This examination is for public safety determination and is considered by the Federal Motor Carrier Safety Administration (FMCSA) to be a “fitness for duty" examination.

As the medical examiner, your fundamental obligation is to establish whether a driver has high BP that is likely to interfere with the ability to operate a CMV safely, thus endangering public safety.

The examination is based on information provided by the driver (history), objective data (measuring BP and physical examination), and additional testing requested by the medical examiner. Your assessment should reflect physical, psychological, and environmental factors.

Medical certification depends on a comprehensive medical assessment of overall health and informed medical judgment about the impact of single or multiple conditions on the whole person.

Key Points for High BP/Hypertension Medical Examination

During the physical examination, you should ask the same questions that you would for any individual who is being assessed for high BP and/or with a current clinical diagnosis of hypertension.

A current diagnosis of hypertension exists when one or more antihypertensive agents are used to control high BP. When antihypertensive medication is used to treat an underlying condition other than high BP, certification is based on the underlying condition and tolerance to the medication.

The FMCSA Medical Examination Report form includes questions about the health history of the driver and requires measuring BP. Additional questions should be asked to supplement the information requested on the Medical Examination Report form. You may ask about symptoms of hypertension and use of antihypertensive medications. It is generally not the role of the medical examiner to determine treatment for the disease.

You should evaluate for other clinical cardiovascular diseases, including CHD, heart failure, and left ventricular hypertrophy, as well as stroke or transient ischemic attack, peripheral artery disease, retinopathy, nephropathy, and other target organ damage.

Regulations — You must review and discuss with the driver any "yes" answers

Does the driver:

- Have high BP?
- Take medication?

Recommendations — Questions that you may ask include

Does the driver have:

- Contact information for the treating provider and a medical release form?
- Symptoms related to or caused by high BP?
- Limitations resulting from the disease or treatment?
- Lifestyle risk factors, particularly modifiable behaviors and conditions (e.g., smoking, obesity, and/or lack of exercise)?
- Uncontrolled hypertension while using three or more antihypertensive medications at close to maximum dosages? If the response is “yes,” an evaluation for secondary hypertension may be appropriate.

Regulations — You must evaluate

For every certification and recertification examination you must:

- Measure BP.
- Confirm BP greater than 139/89 with a second measurement taken later during the examination.
- Check pulse rate, strength, and rhythm.

NOTE: *Under the supervision of the medical examiner, trained assistive personnel may measure and record the BP; however, it is prudent for the medical examiner to confirm disqualifying BP personally.*

Measure Blood Pressure and Check Pulse

Measure Blood Pressure

Because of the prevalence of hypertension in the commercial driving population, this routine test is an essential tool as part of the physical examination to determine the medical fitness for duty of the driver. Blood pressure (BP) should be measured in a standardized fashion using equipment that meets certification criteria.

BP levels aid in evaluating the risk of an acute hypertensive event while driving and assist you as you make certification decisions that allow a driver who does not present an immediate safety risk to continue working while obtaining primary care provider evaluation and implementing a primary care provider treatment plan.

REMEMBER: *You are the medical examiner and not the treating provider. The purpose of the examination is medical fitness for duty, not diagnosis and treatment of the underlying disease.*

NOTE: *Under the supervision of the medical examiner, trained assistive personnel may measure and record BP; however, it is prudent for the medical examiner to confirm disqualifying BP personally.*

Check Pulse

Check the pulse and note rate, strength, and rhythm.

Confirm Elevated BP

Confirm BP higher than or equal to 140/90 with a second measurement taken later during the examination. BP, especially systolic pressure, will fluctuate in a short time from normal to elevated and back to normal as a response to many factors, including:

- Circadian cycle.
- Emotional and physical states.
- Transient hypertension (e.g., "white coat syndrome").
- Use of left versus right arm during BP measurement.
- Problems with technique, such as:
    - Placing the BP cuff over clothing instead of on the skin.
    - Using an inappropriately-sized BP cuff.
    - Positioning the arm incorrectly.

Regulations — You must document discussion with the driver about

- Any affirmative history, including if available:
    - Onset date and diagnosis.
    - Medication(s), dose, and frequency.
    - Any current limitation(s).
- Potential negative effects of medication used while driving, including over-the-counter medications.
- Any abnormal finding(s), noting:
    - Effect on driver ability to operate a CMV safely.
    - Necessary steps to correct the condition as soon as possible, particularly if the untreated condition could result in more serious illness that might affect driving.
- Any additional tests and evaluation.

REMEMBER: *Medical fitness for duty includes the ability to perform strenuous labor. Overall requirements for commercial drivers as well as the specific requirements in the job description of the driver should be deciding factors in the certification process.*

Advisory Criteria/Guidance

Essential Hypertension

The Sixth Report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure established three stages of hypertension that define the severity of hypertension and guide therapy. To review the report, visit: http://www.ncbi.nlm.nih.gov/books/NBK8632/.

49 CFR 391.43(f) Blood Pressure (BP) was amended to include the use of BP readings equivalent to the stages of hypertension to determine driver certification status. The complete text of the amendment may be accessed at http://www.fmcsa.dot.gov/rules-regulations/administration/rulemakings/03-24736miscellaneous-amendments09-30-03.pdf.

When you determine certification for the driver with high BP in the ranges of stage 1 or stage 2 hypertension (BP greater than 140/90 but less than 180/100), consider these additional factors:

- Type of examination (certification or recertification).
- Current certification interval (1-2 years or 3 months).
- Treatment (lifestyle changes, use of medication).
- Severity of hypertension prior to treatment (particularly if history of stage 3 hypertension).

The purpose of the one-time, 3-month certificate is to allow the driver with high BP that is an absolute indication for antihypertensive drug therapy to continue to drive while taking steps to lower the elevated BP. It is not intended as a means to indefinitely extend driving privileges for a driver with a condition that is associated with long-term risks.

For the driver with high BP or hypertension to maintain continuous certification, the driver must demonstrate at examination BP at or less than 140/90.

NOTE: *"One-time" means you cannot issue consecutive 3-month certificates for BP greater than 140/90. It does not mean once in a lifetime.*

Stage 1 Hypertension

Stage 1 hypertension is usually asymptomatic, and blood pressure (BP) in this range is considered a low risk for hypertension-related acute incapacitation. However, all hypertensive drivers should be strongly encouraged to pursue consultation with a primary care provider to ensure appropriate therapy and healthcare education.

BP measurement greater than or equal to 140/90 and less than 160/100.

Waiting period

No recommended time frame

NOTE: *The driver who is disqualified for the presence of high BP/uncontrolled hypertension should not be considered for recertification until the BP is stabilized at less than or equal to 140/90. Treatment should be well tolerated before considering certifying a driver with a history of stage 3 hypertension.*

Decision

Maximum certification period — 1 year OR one time for 3 months

Recommend to certify for 1 year if:

It is the first examination at which the driver has BP equivalent to stage 1 hypertension and the driver:

- Has no history of hypertension.
- Does not use antihypertensive medication to control BP.

Recommend to certify one time for 3 months if:

The driver has:

- A 1-year certificate for untreated stage 1 hypertension.
- Not been prescribed antihypertensive medication to control high BP.

This applies to the recertification of the driver who has met the first examination 1-year certification parameters. Advise the driver that failure to lower BP to less than or equal to 140/90 will render the driver medically unqualified for continued certification.

The driver:

- Has a diagnosis of hypertension treated with medication.
- Tolerates treatment with no side effects that interfere with driving.

This applies to the driver with inadequately controlled BP. Advise the driver that failure to lower BP to less than or equal to 140/90 will render the driver medically unqualified for continued certification.

Recommend not to certify if:

The driver has:

- A one-time, 3-month certificate for elevated BP or hypertension and BP greater than 140/90.
- A history of stage 3 hypertension and BP greater than 140/90.
- BP greater than or equal to 180/110, regardless of any other considerations.

NOTE: *"One-time" means you cannot issue consecutive 3-month certificates for BP greater than 140/90. It does not mean once in a lifetime.*

Monitoring/Testing

The driver who is disqualified for stage 1 hypertension may be recertified for 1 year if BP is lowered to less than 140/90.

The driver who is disqualified for stage 3 hypertension may be recertified for 6 months if BP is lowered to less than 140/90 and medications are well tolerated.

Follow-up

The driver with elevated BP or hypertension should have at least an annual medical examination.

When certified for 3 months, the driver is to seek initiation or evaluation of drug therapy to lower BP to less than or equal to 140/90 to be recertified at follow-up examination.

To review the Hypertension Recommendation Table, see Appendix D of this handbook.

REMEMBER: *When determining certification for the driver with high BP or hypertension, take into consideration current driver certification status, use of antihypertensive medication, and severity of hypertension prior to treatment.*

Stage 2 Hypertension

Stage 2 hypertension is considered an absolute indication for antihypertensive drug therapy, and the driver should seek initiation or evaluation of therapy to lower blood pressure (BP). Effective BP management includes routine primary provider follow-up and periodic screens for the presence of target organ damage and clinical manifestations of cardiovascular disease.

BP measurement greater than or equal to 160/100 and less than 180/110.

Waiting period

No recommended time frame

NOTE: *The driver who is disqualified for high BP/uncontrolled hypertension should not be considered for recertification until the BP is stabilized at less than or equal to 140/90. Treatment should be well tolerated before considering certifying a driver with a history of stage 3 hypertension.*

Decision

Maximum certification period — One time for 3 months

Recommend to certify if:

It is the first examination at which the driver has BP equivalent to stage 2 hypertension and the driver:

- Has no history of hypertension.
- Does not use antihypertensive medication to control BP.

The driver:

- Has a diagnosis of hypertension treated with medication.
- Tolerates treatment with no side effects that interfere with driving.

NOTE: *Advise the driver issued a one-time, 3-month certificate that:*

- To qualify at follow-up, BP should be at or less than 140/90.
- If the driver at follow-up qualifies, a 1-year certificate will be issued from the date of the initial examination, not the expiration date of the one-time, 3-month certificate.
- If the driver fails to lower BP by the expiration date of the one-time, 3-month certificate, the driver will be disqualified until BP is at or less than 140/90 at examination.

Recommend not to certify if:

The driver has:

- A one-time, 3-month certificate for stage 2 hypertension and BP greater hypertension and BP greater than 140/90.
- A history of stage 3 hypertension and BP greater than 140/90.
- BP greater than or equal to 180/110, regardless of any other considerations.

Monitoring/Testing

Provided treatment is well tolerated and the driver demonstrates BP of 140/90 or less, the driver may be certified for 1 year from the date of the initial examination.

Follow-up

The driver must follow-up on or before the one-time, 3-month certificate expiration date. If the driver has BP less than or equal to 140/90, the driver may be certified for 1 year.

NOTE: *The elapsed time of the one-time, 3-month certificate is included in the annual certification interval; it is not an extension to the certification period. This means that you use the date on the one-*

time, 3-month certificate to calculate the medical certificate expiration date. Do not use the date of the follow-up examination at which the driver demonstrates adequate BP.

NOTE: *"One-time" means you cannot issue consecutive 3-month certificates for BP greater than 140/90. It does not mean once in a lifetime.*

REMEMBER: *When determining certification for the driver with high BP or hypertension, take into consideration current driver certification status, use of antihypertensive medication, and severity of hypertension prior to treatment.*

Stage 3 Hypertension

Stage 3 hypertension carries a high risk for the development of acute hypertension-related symptoms that could impair judgment and driving ability. Acute manifestations of elevated blood pressure (BP) can include sudden stroke, acute pulmonary edema, subarachnoid hemorrhage, aortic dissection, or aortic aneurysm rupture.

Meningismus, acute neurological deficits, abrupt onset of shortness of breath, or severe, ripping back or chest pain could signal an impending hypertensive catastrophe that requires immediate cessation of driving and emergency medical care. Symptoms of hypertensive urgency such as headache and nausea are likely to be more subtle, subacute in onset, and more amenable to treatment than a hypertensive emergency.

BP measurement greater than or equal to 180/110.

Waiting period

Not applicable.

Decision

Maximum certification period — 6 months with history of stage 3 hypertension

Recommend to certify if:

Not applicable.

Recommend not to certify if:

The driver has BP equal to stage 3 hypertension, regardless of history or treatment.

NOTE: *The driver is at risk for an acute hypertensive event and should be advised to seek, or should be provided immediate medical attention and must be medically disqualified.*

Monitoring/Testing

Before the driver who is disqualified for stage 3 hypertension can be considered for recertification (maximum 6 months), the driver must, at examination have:

- BP at or less than 140/90.
- Treatment that is well tolerated.

At future semi-annual examinations, if BP is equivalent to stage 1 or stage 2 hypertension, on a case-by-case basis, you should determine the appropriate use of the one-time, 3-month certificate in accordance with stage 1 or stage 2 hypertension guidelines.

If you believe BP greater than 140/90 at rest indicates an unacceptable risk for development of stage 3 hypertension and the onset of acute hypertension-related symptoms, you may temporarily disqualify the driver until BP is at or less than 140/90 and treatment is well tolerated. For example, when maximum doses of multiple antihypertensive medications are used without achieving BP at or less than 140/90, it is prudent that a more aggressive treatment plan should be monitored for effectiveness, interactions, and tolerance prior to driver certification.

Follow-up

The driver should have a medical examination at least every 6 months.

REMEMBER: *When determining certification for the driver with high BP or hypertension, take into consideration current driver certification status, use of antihypertensive medication, and severity of hypertension prior to treatment.*

Secondary Hypertension

The prevalence of secondary hypertension in the general population is estimated at between 5% and 20%. You should obtain information that assesses the underlying cause, the effectiveness of treatment, and any side effects that may interfere with driving.

Examples of primary conditions that may lead to secondary hypertension include pheochromocytoma, primary aldosteronism, renovascular disease, and unilateral renal parenchymal disease. Some of these conditions may be amenable to surgical intervention.

Waiting period

Minimum — 3 months post-surgical correction

NOTE: *If more than one waiting period applies (because of multiple cardiac conditions or other comorbid diseases), examine the driver for certification after the completion of the longest waiting period.*

Decision

Maximum certification period — 1 year post-surgical correction

NOTE: *Determine nonsurgically repaired secondary hypertension using the essential hypertension guidelines.*

Recommend to certify if:

The driver has blood pressure that is less than or equal to 140/90.

Recommend not to certify if:

As the medical examiner, you believe that the nature and severity of the medical condition of the driver endangers the health and safety of the driver and the public.

Monitoring/Testing

You may on a case-by-case basis obtain additional tests and/or consultation to adequately assess driver medical fitness for duty.

Follow-up

The driver should have an annual medical examination.

Cardiovascular

The fundamental question when deciding if a commercial driver should be medically certified is whether the driver has a CVD that increases the risk of sudden death or incapacitation and creates a danger to the safety and health of the driver, as well as the public sharing the road.

A number of concerns beyond the typical cardiac risk factors predispose commercial drivers to an increased risk of CVD:

- According to the Commercial Driver's License Information System, in 2009 the average age of a driver is 39 years.
- Obesity and a sedentary lifestyle increase the risk of CVD. Both are more common in the commercial driving population than in the general population.
- Driving stressors, such as traffic congestion, erratic shift work, a sense of responsibility for others, and emotional distress due to belligerent passengers, can lead to increased neurosympathetic and adrenocortical catecholamine and cortisol release. This increases the likelihood of changes in arterial tone, myocardial excitability and contractility, and thrombogenic propensity, particularly given the aging workforce in the United States.
- Drivers are exposed to other environmental stressors that may be detrimental to the cardiovascular system, such as excessive noise, temperature extremes, air pollution, and whole body vibration.

The effect of CVD on the commercial driver is significant now and will increase in the future.

The major clinical manifestations of CVD are acute myocardial infarction, angina pectoris, sudden death, and congestive heart failure. Arrhythmia is the most likely cause of sudden driver incapacitation. However, coronary heart disease (CHD) is the most common etiology. Estimated frequencies of initial presentation of CHD are approximately 50% acute myocardial infarction, 30% angina, and 20% sudden death. Sudden cardiac dysfunction is particularly relevant to safety-sensitive positions, such as pilots, merchant marines, and commercial drivers. In these jobs, policies are expected to protect against gradual or sudden incapacitation on the job and harm to the public.

The effect of heart disease on driving must be viewed in relation to the general health of the driver. Other medical conditions may exacerbate a cardiovascular condition. Thus, medical certification to drive depends on a comprehensive medical assessment of overall health and informed medical judgment about the impact of single or multiple conditions on the whole person.

Disqualification requires that the CMV driver exhibit a higher than acceptable likelihood of acute incapacitation from a cardiac event, resulting in an increased risk to the safety and health of the driver and the public.

Cardiovascular Regulation 4 CF 391.41(b)(4)

"A person is physically qualified to drive a commercial motor vehicle (CMV) if that person —

Has no current clinical diagnosis of myocardial infarction, angina pectoris, coronary insufficiency, thrombosis, or any other cardiovascular disease (CVD) of a variety known to be accompanied by syncope, dyspnea, collapse, or congestive cardiac failure."

Health History and Physical Examination

General Purpose of Health History and Physical Examination

The general purpose of the history and physical examination is to detect the presence of physical, mental, or organic conditions of such character and extent as to affect driver ability to operate a CMV safely. This examination is for public safety determination and is considered by the Federal Motor Carrier Safety Administration (FMCSA) to be a “medical fitness for duty" examination.

As the medical examiner, your fundamental obligation during the cardiovascular assessment is to establish whether a driver has a cardiovascular disease or disorder that increases the risk for sudden death or incapacitation, thus endangering driver and public safety and health.

The examination is based on information provided by the driver (history), objective data (physical examination), and additional testing requested by the medical examiner. Your assessment should reflect physical, psychological, and environmental factors.

Medical certification depends on a comprehensive medical assessment of overall health and informed medical judgment about the impact of single or multiple conditions on the whole person.

Key Points for Cardiovascular Examination

During the physical examination, you should ask the same questions you would of any individual who is being assessed for cardiovascular concerns. The FMCSA Medical Examination Report form includes health history questions and physical examination checklists. Additional questions should be asked to supplement information requested on the form. You should ask about and document cardiovascular symptoms.

Regulations — You must review and discuss with the driver any "Yes" answers

Does the driver have:

- A current clinical diagnosis of myocardial infarction, angina pectoris, coronary insufficiency, or thrombosis?
- Syncope, dyspnea, or collapse?
- Heart failure?
- A history of heart disease or acute myocardial infarction?
- A history of other heart conditions?
- A history of heart surgery (valve replacement/bypass, angioplasty, implantable cardiac defibrillator, pacemaker)?
- Use cardiovascular medications that effectively control a condition without side effects that interfere with safe driving?

Recommendations — Questions that you may ask include:

Does the driver have:

- Chest pain?
- Chest pressure or ache with exertion?
- Pain, pressure, or dyspnea at rest or with exertion?
- Recurrent and/or severe palpitations?

- Pre-syncope (dizziness, light-headedness) or true syncope (loss of consciousness)?
- Medical therapy that requires monitoring?

Record

Regulations — You must evaluate:

On examination, does the driver have:

- Murmurs, extra heart sounds, or arrhythmias?
- An enlarged heart?
- Abnormal pulse and amplitude, carotid or arterial bruits, or varicose veins?

Remember

Regulations — You must document discussion with the driver about:

- Any affirmative history, including if available:
    - Onset date, diagnosis.
    - Medication(s), dose, and frequency.
    - Any current limitation(s).
- Potential negative effects of medication use, including over-the-counter medications, while driving.
- Any abnormal finding(s), noting:
    - Effect on driver ability to operate a CMV safely.
    - Necessary steps to correct the condition as soon as possible, particularly if the untreated condition could result in more serious illness that might affect driving.
- Any additional cardiovascular tests and evaluation.

REMEMBER: *Medical fitness for duty includes the ability to perform strenuous labor. Overall requirements for commercial drivers, as well as the specific requirements in the job description of the driver, should be deciding factors in the certification process.*

Advisory Criteria/Guidance

Anticoagulant Therapy

The most current guidelines for the use of warfarin (Coumadin) for cardiovascular diseases are found in the Cardiovascular Advisory Panel Guidelines for the Medical Examination of Commercial Motor Vehicle Drivers.

To review the Venous Disease Recommendation Tables, see Appendix D of this handbook.

Anticoagulant therapy may be utilized in the treatment of cardiovascular or neurological conditions. The guidelines emphasize that the certification decision should be based on the underlying medical disease or disorder requiring medication, not the medication itself.

Waiting period

Minimum — 1 month stabilized

NOTE: *If more than one waiting period applies (because of multiple cardiac conditions or other comorbid diseases), examine the driver for certification after the completion of the longest waiting period.*

Decision

Maximum certification period — 1 year

Recommend to certify if:

The driver:

- Is stabilized on medication for at least 1 month.
- Provides a copy of the international normalized ratio (INR) results at the examination.
- Has at least monthly INR monitoring.

Recommend not to certify if:

- INR is not being monitored.
- INR is not therapeutic.
- Underlying disease is disqualifying.

Monitoring/Testing

The driver should obtain INR monitoring at least monthly.

Follow-up

The driver should bring results of INR monitoring to the examination.

Waiting period

Not applicable.

Decision

Recommend to certify if:

Not applicable.

Recommend not to certify if:

The driver has a cerebrovascular disorder.

NOTE: *The rationale for disqualification is the high rate of complications associated with bleeding that can incapacitate the driver while operating a vehicle.*

Monitoring/Testing

Not applicable.

Follow-up

Not applicable.

Cardiovascular Tables Archive

Visit http://www.fmcsa.dot.gov/documents/cardio.pdf to review the Cardiovascular Tables Archive.

Aneurysms, Peripheral Vascular Disease, and Venous Disease and Treatments

The diagnosis of arterial disease should alert you to the need for an evaluation to determine the presence of other cardiovascular diseases.

Rupture is the most serious complication of an abdominal aortic aneurysm and is related to the size of the aneurysm. Deep venous thrombosis can be the source of acute pulmonary emboli or lead to long-term venous complications. Intermittent claudication is the primary symptom of peripheral vascular disease of the lower extremities.

Abdominal Aortic Aneurysm

The majority of abdominal aortic aneurysms (AAAs) occur in the sixth and seventh decades of life and occur more frequently in males than in females by a 3:1 ratio. The majority of AAAs are asymptomatic. An AAA can be associated with other cardiovascular disease.

The overall detection rate of AAAs on examination is 31%. Detection during a physical examination depends on aneurysm size and is affected by obesity. Clinical examination identifies approximately 90% of aneurysms greater than 6 cm. Auscultation of an abdominal bruit may indicate the presence of an aneurysm.

Risk of rupture

Rupture is the most serious complication of an AAA and can be life threatening. The risk of rupture increases as the aneurysm increases in size.

An AAA:

- Less than 4 cm rarely ruptures.
- Smaller than 5 cm has a 1% to 3% per year rate of rupture.
- 5 cm to 6 cm has a 5% to 10% per year rate of rupture.
- Greater than 7 cm has approximately a 20% per year rate of rupture.

Monitoring of an aneurysm is advised because the growth rate can vary and rapid expansion can occur.

Waiting period

Minimum — 3 months for post-surgical repair of an aneurysm

NOTE: *If more than one waiting period applies (because of multiple cardiac conditions or other comorbid diseases), examine the driver for certification after the completion of the longest waiting period.*

Decision

Maximum certification period — 1 year

Recommend to certify if:

The AAA is:

- Less than 4 cm and the driver is asymptomatic.
- Greater than 4 cm but less than 5 cm and the driver is asymptomatic and has clearance from a cardiovascular specialist who understands the functions and demands of commercial driving.
- Surgically repaired and the driver meets post-surgical repair of aneurysm guidelines.

Recommend not to certify if:

The driver has:

- Symptoms, regardless of AAA size.
- Recommendation for surgical repair, regardless of AAA size, from a cardiovascular specialist who understands the functions and demands of commercial driving.

The AAA:

- Is greater than 4 cm but less than 5 cm and driver does not have medical clearance for commercial driving from a cardiovascular specialist.
- Is greater than or equal to 5 cm.
- Has increased more than 0.5 cm during a 6 month period, regardless of size.

Monitoring/Testing

Ultrasound has almost 100% sensitivity and specificity for detecting an AAA and is recommended to monitor change in size.

Follow-up

The driver should have an annual medical examination.

To review the Aneurysm Recommendation Table, see Appendix D of this handbook.

Acute Deep Vein Thrombosis

The commercial driver is at an increased risk for developing acute deep vein thrombosis (DVT) due to long hours of sitting as part of the profession. DVT can be the source of pulmonary emboli that can cause gradual or sudden incapacitation or death. Adequate treatment with anticoagulants decreases the risk of recurrent thrombosis by approximately 80%.

Waiting period

No recommended time frame

You should not certify the driver until etiology is confirmed, and treatment has been shown to be adequate/effective, safe, and stable.

Decision

Maximum certification period — 1 year

Recommend to certify if:

The driver has no residual, acute DVT.

Recommend not to certify if:

The driver has DVT ineffectively treated.

Monitoring/Testing

When DVT treatment includes anticoagulant therapy, the driver should meet monitoring guidelines.

Follow-up

The driver should have an annual medical examination.

To review the Venous Disease Recommendation Tables, see Appendix D of this handbook.

Chronic Thrombotic Venous Disease

Chronic thrombotic venous disease of the legs increases the risk of pulmonary emboli; however, there is insufficient research to confirm the level of risk. As a medical examiner, you must evaluate on a case-by-case basis to determine if the driver meets cardiovascular requirements.

Waiting period

No recommended time frame

You should not certify the driver until etiology is confirmed and treatment has been shown to be adequate/effective, safe, and stable.

Decision

Maximum certification period — 2 years

Recommend to certify if:

The driver has no symptoms.

Recommend not to certify if:

As the medical examiner, you believe that the nature and severity of the medical condition of the driver endangers the health and safety of the driver and the public.

Monitoring/Testing

You may on a case-by-case basis obtain additional tests and/or consultation to adequately assess driver medical fitness for duty.

Follow-up

The driver should have a biennial medical examination.

To review the Venous Disease Recommendation Tables, see Appendix D of this handbook.

Intermittent Claudication

Approximately 7% to 9% of persons with peripheral vascular disease develop intermittent claudication, the primary symptom of obstructive vascular disease of the lower extremity. In cases of severe arterial insufficiency, necrosis, neuropathy, and atrophy may occur.

Waiting period

Minimum — 3 months for post-surgical repair

You should not certify the driver until etiology is confirmed and treatment has been shown to be adequate/effective, safe, and stable.

NOTE: *If more than one waiting period applies (because of multiple cardiac conditions or other comorbid diseases), examine the driver for certification after the completion of the longest waiting period.*

Decision

Maximum certification — 1 year

Recommend to certify if:

The driver, following surgery has:

- Relief of symptoms.
- No other disqualifying cardiovascular disease.

Recommend not to certify if:

The driver has pain at rest.

Monitoring/Testing

You may on a case-by-case basis obtain additional tests and/or consultation to adequately assess driver medical fitness for duty.

Follow-up

The driver should have an annual medical examination.

To review the Peripheral Vascular Disease Recommendation Table, see Appendix D of this handbook.

Other Aneurysms

Aneurysms can develop in visceral and peripheral arteries and venous vessels. Rupture of any of these aneurysms can lead to gradual or sudden incapacitation and death. Much of the information on aortic aneurysms is applicable to aneurysms in other arteries.

Waiting period

Minimum — 3 months post-surgical repair of an aneurysm

NOTE: *If more than one waiting period applies (because of multiple cardiac conditions or other comorbid diseases), examine the driver for certification after completion of the longest waiting period.*

Decision

Maximum certification — 1 year

Recommend to certify if:

The driver has:

- Surgical repair of the aneurysm and meets post-surgical repair of aneurysm guidelines.
- Clearance from a cardiovascular specialist who understands the functions and demands of commercial driving.

Recommend not to certify if:

The driver has:

- Recommendation for surgical repair of an aneurysm, from a cardiovascular specialist who understands the functions and demands of commercial driving, but has not had surgical repair.

Monitoring/testing

You may, on a case-by-case basis, obtain additional tests and consultations to adequately assess driver medical fitness for duty.

Follow-up

The driver should have an annual medical examination.

To review the Aneurysm Recommendation Table, see Appendix D of this handbook.

Peripheral Vascular Disease

Aneurysms can develop in visceral and peripheral arteries and venous vessels. Rupture of any of these aneurysms can lead to gradual or sudden incapacitation and death. Much of the information on aortic aneurysms is applicable to aneurysms in other arteries.

Waiting period

Minimum — 3 months post-surgical repair of an aneurysm

NOTE: *If more than one waiting period applies (because of multiple cardiac conditions or other comorbid diseases), examine the driver for certification after completion of the longest waiting period.*

Decision

Maximum certification — 1 year

Recommend to certify if:

The driver has:

- Surgical repair of the aneurysm and meets post-surgical repair of aneurysm guidelines.
- Clearance from a cardiovascular specialist who understands the functions and demands of commercial driving.

Recommend not to certify if:

The driver has:

- Recommendation for surgical repair of an aneurysm, from a cardiovascular specialist who understands the functions and demands of commercial driving, but has not had surgical repair.

Monitoring/Testing

You may, on a case-by-case basis, obtain additional tests and consultations to adequately assess driver medical fitness for duty.

Follow-up

The driver should have an annual medical examination.

To review the Aneurysm Recommendation Table, see Appendix D of this handbook.

Post-Surgical Repair of Aneurysm

With improved surgical outcomes, and without contraindication for surgery, aneurysms can be electively repaired to prevent rupture. The decision by the treating provider not to surgically repair an aneurysm does not mean that the driver can be certified to drive safely. However, a recommendation to surgically repair an aneurysm disqualifies the driver until the aneurysm has been repaired and a satisfactory recovery period has passed.

Waiting period

Minimum — 3 months post-surgical repair

NOTE: *If more than one waiting period applies (because of multiple cardiac conditions or other comorbid diseases), examine the driver for certification after the completion of the longest waiting period.*

Decision

Maximum certification period — 1 year

Recommend to certify if:

The driver:

- Is asymptomatic.
- Has clearance from a cardiovascular specialist who understands the functions and demands of commercial driving.

Recommend not to certify if:

The driver has:

- Recommendation for surgical repair of an aneurysm from a cardiovascular specialist who understands the functions and demands of commercial driving, but has not had surgical repair.

Monitoring/Testing

When post-surgical treatment includes anticoagulant therapy, the driver should meet monitoring guidelines.

To review the Venous Disease Recommendation Tables, see Appendix D of this handbook.

Follow-up

The driver should have an annual medical examination.

To review the Aneurysm Recommendation Table, see Appendix D of this handbook.

Pulmonary Emboli

Deep vein thrombosis can be one of the sources of pulmonary emboli (PE). PE can cause gradual or sudden incapacitation and significant morbidity and mortality.

Waiting period

Minimum — 3 months with no pulmonary embolism

NOTE: *If more than one waiting period applies (because of multiple cardiac conditions or other comorbid diseases), examine the driver for certification after completion of the longest waiting period.*

Decision

Maximum certification period — 1 year

Recommend to certify if:

The driver has:

- Appropriate long-term treatment.
- No other disqualifying cardiovascular disease.

Recommend not to certify if:

The driver has symptoms.

Monitoring/Testing

When PE treatment includes anticoagulant therapy, the driver should meet monitoring guidelines.

Follow-up

The driver should have an annual medical examination.

To review the Venous Disease Recommendation Tables, see Appendix D of this handbook.

Superficial Phlebitis

Although superficial phlebitis is a benign and self-limited disease, deep vein thrombosis (DVT) is often a coexisting condition and needs to be excluded during the course of examination.

Waiting period

No recommended time frame

You should not certify the driver until etiology is confirmed and treatment has been shown to be adequate/effective, safe, and stable.

Decision

Maximum certification period— 2 years

Recommend to certify if:

The driver is otherwise medically qualified.

Recommend not to certify if:

The driver has coexisting DVT and does not meet the DVT guidelines.

Monitoring/Testing

You may on a case-by-case basis obtain additional tests and/or consultation to adequately assess driver medical fitness for duty.

Follow-up

The driver should have a biennial medical examination.

To review the Venous Disease Recommendation Tables, see Appendix D of this handbook.

Thoracic Aneurysm

While relatively rare, thoracic aneurysms are increasing in frequency. Size of the aorta is considered the major factor in determining risk for dissection or rupture of a thoracic aneurysm.

Waiting period

Minimum — 3 months post-surgical repair

NOTE: *If more than one waiting period applies (because of multiple cardiac conditions or other comorbid diseases), examine the driver for certification after the completion of the longest waiting period.*

Decision

Maximum certification period — 1 year

Recommend to certify if:

The driver:

- Has a thoracic aneurysm less than 3.5 cm.
- Has a surgically repaired thoracic aneurysm and the driver meets post-surgical repair of aneurysm guidelines, including:
    - Has completed surgical repair waiting period.
    - Has medical clearance from a cardiovascular specialist who understands the functions and demands of commercial driving.

Recommend not to certify if:

The driver has a thoracic aneurysm greater than 3.5 cm.

Monitoring/Testing

You may on a case-by-case basis obtain additional tests and/or consultation to adequately assess driver medical fitness for duty.

Follow-up

The driver should have an annual medical examination.

To review the Aneurysm Recommendation Table, see Appendix D of this handbook.

Varicose Veins

Varicose veins with the associated symptoms and complications affect more than 20 million people in the United States. Complications include chronic venous insufficiency, leg ulcerations, and recurrent deep vein thrombosis.

The presence of varicose veins does not medically disqualify the commercial driver.

Waiting period

No recommended time frame

You should not certify the driver until etiology is confirmed and treatment has been shown to be adequate/effective, safe, and stable.

Decision

Maximum certification period — 2 years

Recommend to certify if:

The driver has no complications.

Recommend not to certify if:

As the medical examiner, you believe that the nature and severity of the medical condition of the driver endangers the health and safety of the driver and the public.

Monitoring/Testing

You may on a case-by-case basis obtain additional tests and/or consultation to adequately assess driver medical fitness for duty.

Follow-up

The driver should have a biennial medical examination.

To review the Venous Disease Recommendation Tables, see Appendix D of this handbook.

Cardiac Arrhythmias and Treatment

The majority of sudden cardiac deaths are thought to be secondary to ventricular tachycardia or ventricular fibrillation and occur most often when there is no prior diagnosis of heart disease.

Risk determination is difficult because of the number of variables that must be considered. The prognosis is generally determined by the underlying heart disease. While defibrillation may restore a normal rhythm, there remains a high risk of recurrence.

When the driver has a history of arrhythmia or uses an anti-arrhythmia device, you, as a medical examiner, should consider the following:

- Is the underlying heart disease disqualifying?
- What is the risk for sudden death?
- What is the risk for cerebral hypoperfusion and loss of consciousness?

Implantable Cardioverter-Defibrillators

Implantable cardioverter-defibrillators (ICD) are electronic devices that treat cardiac arrest, ventricular fibrillation, and ventricular tachycardia through the delivery of rapid pacing stimuli or shock therapy.

ICDs treat but do not prevent arrhythmias. Therefore, the driver remains at risk for syncope. The management of the underlying disease is not effective enough for the driver to meet cardiovascular qualification requirements. Combination ICD/pacemaker devices are also ineffective in preventing incapacitating cardiac arrhythmia events.

Waiting period

Not applicable.

Decision

Recommend to certify if:

Not applicable.

Recommend not to certify if:

The driver has an:

- ICD.
- ICD/pacemaker combination device.

Monitoring/Testing

Not applicable.

Follow-up

Not applicable.

To review the Implantable Defibrillator Recommendation Table, see Appendix D of this handbook.

Pacemakers

A pacemaker is an implantable device designed to treat bradycardia. When assessing the risk for sudden, unexpected incapacitation in a driver with a pacemaker, the underlying disease responsible for the pacemaker indication must be considered.

- Both sinus node dysfunction and atrioventricular (AV) block have variable long-term prognoses, depending on the underlying disease.
- Cerebral hypoperfusion is usually corrected by support of heart rate via the implantation of a pacemaker.

Currently, pacemakers and the lead systems are reliable and durable over the long term.

Waiting period

Minimum — 1 month post-pacemaker implantation if underlying disease is:

- Sinus node dysfunction.
- AV block.

Minimum — 3 months post-pacemaker implantation if underlying disease is:

- Neurocardiogenic syncope.
- Hypersensitive carotid sinus with syncope.

NOTE: *If more than one waiting period applies (because of multiple cardiac conditions or other comorbid diseases), examine the driver for certification after the completion of the longest waiting period.*

Decision

Maximum certification period — 1 year

Recommend to certify if:

The driver has:

- Documentation indicating the presence of a functioning pacemaker.
- Documentation indicating completion of routine pacemaker checks.
- No disqualifying underlying disease.

Recommend not to certify if:

The driver has:

- An implantable cardiac defibrillator/pacemaker combination device.
- A disqualifying underlying disease.

Monitoring/Testing

The driver should:

- Comply with pacemaker center scheduled function checks.
- Provide documentation of pacemaker function checks at examination.

Follow-up

The driver should have an annual medical examination.

To review the Pacemaker Recommendation Table, see Appendix D of this handbook.

Supraventricular Arrhythmias

Supraventricular arrhythmias fall into two main categories: supraventricular tachycardia (SVT) and atrial fibrillation.

- **Supraventricular tachycardia**

  SVT is a common arrhythmia that is usually not considered a risk for sudden death. On occasion, SVT can cause loss of consciousness or compromise cerebral function. Treatment by catheter ablation is usually curative and allows drug therapy to be withdrawn.

- **Atrial fibrillation**

The major risk associated with atrial fibrillation is the presence of an embolus which can cause a stroke. Anticoagulant therapy decreases the risk of peripheral embolization in individuals with risk factors for stroke.

See the Supraventricular Tachycardias Recommendation Table for diagnosis-specific recommendations. The following are general recommendations.

Waiting period

Minimum — 1 month anticoagulated adequately and diagnosis is atrial fibrillation

- As cause of stroke or risk for stroke.
- Following thoracic surgery.

Minimum — 1 month post-isthmus ablation and diagnosis is atrial flutter

Minimum — 1 month asymptomatic/treated asymptomatic and diagnosis is:

- Atrioventricular nodal reentrant tachycardia.
- Atrioventricular reentrant tachycardia and Wolff-Parkinson-White syndrome.
- Atrial tachycardia.
- Junctional tachycardia.

NOTE: *If more than one waiting period applies (because of multiple cardiac conditions or other comorbid diseases), examine the driver for certification after the completion of the longest waiting period.*

Decision

Maximum certification period — 1 year

Recommend to certify if:

The driver has:

- Heart rate that is controlled.
- Treatment for prevention of emboli that is effective and tolerated.
- No underlying disease that is disqualifying.
- Clearance from a cardiovascular specialist who understands the functions and demands of commercial driving.

Recommend not to certify if:

The condition causes:

- Loss of consciousness.
- Compromised cerebral function.
- Sudden death resuscitation.

Monitoring/Testing

The driver should:

- Comply with anticoagulant therapy guidelines, when appropriate.
- Have annual evaluation by a cardiovascular specialist who understands the functions and demands of commercial driving.

Follow-up

The driver should have an annual medical examination.

REMEMBER: *There are times when the medical assessment and the guidelines may yield different conclusions about the severity of the condition. A driver could have a benign underlying medical problem with an excellent prognosis but still not be medically qualified as a commercial driver. For example, if a benign supraventricular arrhythmia causes syncope, the driver cannot be medically certified until the problem has been corrected.*

Ventricular Arrhythmias

Ventricular arrhythmias are categorized as ventricular fibrillation and ventricular tachycardia and are responsible for the majority of instances of cardiac sudden death. Most cases are caused by coronary heart disease, but can also occur in people with hearts that are structurally normal.

Certification parameters include:

- Left ventricular ejection fraction (LVEF).
- Nonsustained ventricular tachycardia (NSVT).
- Ventricular tachycardia (VT).

See the Ventricular Arrhythmias Recommendation Table in Appendix D of this handbook for diagnosis-specific recommendations.

Waiting period

Minimum — 1 month after drug or other therapy and diagnosis is:

- Coronary heart disease.
- Right ventricular outflow VT.
- Idiopathic left ventricular VT.

NOTE: *If more than one waiting period applies (because of multiple cardiac conditions or other comorbid diseases), examine the driver for certification after the completion of the longest waiting period.*

Decision

Maximum certification period — 1 year

Recommend to certify if:

The driver:

- Is asymptomatic.

- Has an identified non-disqualifying cardiac cause.
- Has clearance from a cardiovascular specialist who understands the functions and demands of commercial driving.

Recommend not to certify if:

The driver:

- Is symptomatic.
- Has sustained VT.
- Has NSVT, LVEF less than 0.40.
- Has a diagnosis of:
    - Hypertrophic cardiomyopathy.
    - Long QT interval syndrome.
    - Brugada syndrome.

Monitoring/Testing

Have annual evaluation by a cardiovascular specialist who understands the functions and demands of commercial driving.

Follow-up

The driver should have an annual medical examination.

See the Ventricular Arrhythmias Recommendation Table for diagnosis-specific recommendations.

Cardiovascular Tests

Detection of an undiagnosed heart or vascular finding during a physical examination may indicate the need for further testing and examination to adequately assess medical fitness for duty. Diagnostic-specific testing may be required to detect the presence and/or severity of cardiovascular diseases. The additional testing may be ordered by the medical examiner, primary care physician, cardiologist, or cardiovascular surgeon.

When requesting additional evaluation from a specialist, the specialist must understand the role and function of a driver; therefore, it is helpful if you include a description of the role of the driver and a copy of the applicable medical standard(s) and guidelines with the request.

Record additional tests in the Medical Examination Report form, Section 6. LABORATORY AND OTHER TEST FINDINGS, and/or attach additional test reports.

6. LABORATORY AND OTHER TEST FINDINGS **Numerical readings must be recorded.**

Urinalysis is required. Protein, blood or sugar in the urine may be an indication for further testing to rule out any underlying medical problem.

URINE SPECIMEN	SP. GR.	PROTEIN	BLOOD	SUGAR
	1.020	Neg	Neg	Neg

Other Testing (Describe and record) ETT - stress test results attached

Figure 23 - Medical Examination Report Form: Laboratory and Other Test Findings

Echocardiography

Left ventricular ejection fraction (LVEF) may be assessed by echocardiography. Imaging studies have superior sensitivity and specificity compared to the standard exercise tolerance test (ETT) and are indicated in the presence of an abnormal resting electrocardiogram or non-diagnostic standard ETT.

Driver should have:

- An LVEF greater than or equal to 40%.
- No pulmonary hypertension.

NOTE: *Pulmonary hypertension is pulmonary artery pressure greater than 50% of systemic systolic blood as determined by echocardiography or cardiac catheterization.*

REMEMBER: *If echocardiography test results are inconclusive, some form of radionuclide imaging may be used to obtain the ejection fraction measurement.*

Exercise Tolerance Test

The exercise tolerance test is the most common test used to evaluate workload capacity and detect cardiac abnormalities.

Driver should be able to:

- Exercise to a workload capacity greater than 6 Metabolic Equivalents (METs) (through Bruce protocol stage II or equivalent).
- Attain a heart rate greater than or equal to 85% of predicted maximum (unless on beta blockers).
- Have a rise in systolic blood pressure greater than or equal to 20 mm Hg without angina.
- Have no significant ST segment depression.

NOTE: *METs — Extensive literature exists on the energy requirements for many physical tasks.*

- *Sedentary activity requires fewer than 2 METs. These activities include sitting, slow walking, and lifting light objects of no more than 10 pounds.*
- *Light work requires 2 to 4 METs and includes carrying lightweight objects of no more than 20 pounds.*
- *Medium work requires 4 to 6 METs and includes carrying moderate weight objects of up to 50 pounds.*
- *Heavy and very heavy work requires greater than 6 METs and includes carrying heavy objects and climbing stairs rapidly.*

REMEMBER: *Medical fitness for duty includes the ability to perform strenuous work. Overall requirements for commercial drivers along with the specific requirements in the job description should be deciding factors in the certification process.*

Cardiovascular Recommendation Tables

See Appendix D of this handbook.

Coronary Heart Diseases and Treatments

As a medical examiner, it is your decision whether the nature and severity of the condition of the driver will result in gradual or sudden incapacitation. The major clinical manifestations of coronary heart disease (CHD) are acute myocardial infarction, angina pectoris (either stable or unstable), congestive heart failure, and sudden death.

Sudden death occurs when an individual goes from a usual state of health to death within 1 hour. In some cases, those who suffer sudden death are asymptomatic with the first symptom of CHD being sudden death.

The incidence of crashes caused by sudden death is relatively low, primarily because of the length of time between the onset of the cardiovascular event and the incapacitation of the driver. Therefore, it is important that you educate the driver about warning signs of an impending CHD event. Emphasize that the driver may have only a short time following the onset of symptoms to safely stop the vehicle and call for medical assistance.

Prognostic indicators for CHD

The major predictor of CHD is left ventricular function. Other indicators to be considered include:

- General heath.
- Age.
- Arrhythmias.
- Angina pectoris.
- Associated vascular disease.
- Severity of CHD.

General CHD recommendation summary

The qualified driver with CHD should:

- Secure clearance from a cardiovascular specialist who understands the functions and demands of commercial driving.
- Tolerate cardiovascular medication and be:
    - Knowledgeable about medications used while driving.
    - Free from side effects that compromise driving ability.
    - Compliant with the ongoing treatment plan.

Acute Myocardial Infarction

The first few months following an acute myocardial infarction (MI) pose the greatest risk of mortality, with the majority of deaths classified as sudden death. Current opinion among clinicians states that post-MI drivers may safely return to any occupational task provided there is no exercise-induced myocardial ischemia or left ventricular dysfunction.

Waiting Period

Minimum — 2 months

NOTE: *If more than one waiting period applies (because of multiple cardiac conditions or other comorbid diseases), examine the driver for certification after the completion of the longest waiting period.*

Decision

Maximum certification period — 1 year

Recommend to certify if:

The driver:

- Is asymptomatic.
- Tolerates medications.
- Has a satisfactory exercise tolerance test (ETT).
- Has a resting left ventricular ejection fraction (LVEF) greater than or equal to 40%.
- Has no electrocardiogram ischemic changes.

NOTE: *For an initial certification following an MI, an in-hospital post-MI echocardiogram showing an LVEF greater than or equal to 40% is sufficient.*

Recommend not to certify if:

The driver has:

- Rest angina or change in angina pattern within 3 months of examination.
- Ischemic changes on rest electrocardiogram (ECG).
- Intolerance to cardiovascular therapy.

Monitoring/Testing

The driver should obtain:

- Clearance from a cardiovascular specialist who understands the functions and demands of commercial driving.
- Biennial ETT.

NOTE: *Drivers in a rehabilitation program can receive comprehensive secondary prevention therapy.*

Follow-up

The driver should have an annual medical examination.

To review the Commercial Drivers With Known CHD Recommendation Tables, see Appendix D of this handbook.

Angina Pectoris

Angina pectoris is at the lower end of the spectrum for risk of adverse clinical outcomes among individuals with coronary heart disease (CHD). The presence of this condition usually implies that at least one coronary artery has hemodynamically significant narrowing.

When evaluating the driver with angina, you should distinguish between stable and unstable angina. The presence of unstable angina may be a precursor to a cardiovascular episode known to be accompanied by syncope, dyspnea, collapse, or congestive cardiac failure.

Stable angina

May be precipitated by a predictable pattern, including:

- Exertion.
- Emotion.

- Extremes in weather.
- Sexual activity.

Unstable angina

Has an unpredictable course characterized by:

- Pain occurring at rest.
- Changes in pattern (i.e., increased frequency and longer duration).
- Decreased response to medication.

Waiting Period

Minimum — 3 months with no rest angina or change in angina pattern

NOTE: *If more than one waiting period applies (because of multiple cardiac conditions or other comorbid diseases), examine the driver for certification after the completion of the longest waiting period.*

Decision

Maximum certification period — 1 year

Recommend to certify if:

The driver:

- Has stable angina.
- Is asymptomatic.
- Tolerates medications.
- Has a satisfactory exercise tolerance test (ETT).

Recommend not to certify if:

The driver has had unstable angina within 3 months of examination.

Monitoring/Testing

The driver should obtain:

- Evaluation from a cardiovascular specialist who understands the functions and demands of commercial driving.
- Biennial ETT.

NOTE: *If an ETT is inconclusive, an imaging stress test may be indicated.*

Follow-up

The driver should have an annual medical examination.

To review the Commercial Drivers With Known CHD Recommendation Tables, see Appendix D of this handbook.

CHD Risk-Equivalent — Multiple CHD Risk Factors

The presence of one or more of these medical conditions may be insufficient to not certify a driver. However, the presence of these conditions can cause the driver to be at as great a risk of sudden death or incapacitation as the driver with known coronary heart disease (CHD).

CHD risk-equivalent conditions include:

- Presence of diabetes mellitus.
- Presence of peripheral vascular disease.
- A Framingham risk score predicting a 20% CHD event risk over the next 10 years. To view the Framingham Heart Study, visit: http://www.nhlbi.nih.gov/guidelines/cholesterol/risk_tbl.htm.
- Being over 45 years of age with multiple risk factors for CHD.

Waiting Period

No recommended time frame

You should not certify the driver until etiology is confirmed and treatment has been shown to be adequate/effective, safe, and stable.

Decision

Maximum certification — 1 year

Recommend to certify if:

As the medical examiner, you believe that the nature and severity of the medical condition of the driver does not endanger the health and safety of the driver and the public.

Recommend not to certify if:

As the medical examiner, you believe that the nature and severity of the medical condition of the driver endangers the health and safety of the driver and the public.

NOTE: *The decision not to medically certify a commercial driver should not depend solely on the detection of multiple risk factors.*

Monitoring/Testing

The driver should obtain:

- Ongoing treating provider follow-up.
- Aggressive comprehensive risk factor management.

Follow-up

The driver should have an annual medical examination.

To review the Commercial Drivers Without Known CHD Recommendation Tables, see Appendix D of this handbook.

Coronary Artery Bypass Grafting

Coronary artery bypass grafting (CABG) surgery is frequently the preferred choice of therapy for individuals with multi-vessel coronary heart disease, narrowing of the proximal left main coronary artery, and extensive atherosclerosis in the presence of left ventricular dysfunction or debilitating angina.

Following CABG surgery, individuals are at less risk of sudden death than those who are treated medically. Most drivers who undergo CABG surgery are able to return to work. A longer waiting period is recommended to allow sternal incision healing. The sternum should be completely healed before certifying a driver.

A significant risk associated with CABG surgery is the high long-term reocclusion rate of the bypass graft.

Waiting Period

Minimum — 3 months regardless of type of CABG surgery performed

NOTE: *If more than one waiting period applies (because of multiple cardiac conditions or other comorbid diseases), examine the driver for certification after the completion of the longest waiting period.*

Decision

Maximum certification period — 1 year

Recommend to certify if:

The driver:

- Is asymptomatic.
- Tolerates cardiovascular medications with no orthostatic symptoms.
- Has a left ventricular ejection fraction (LVEF) greater than or equal to 40%.
- Is examined and approved by a cardiologist for medical fitness to drive.
- Has a healed sternum.

Recommend not to certify if:

The driver:

- Is symptomatic.
- Has orthostatic symptom side effects from cardiovascular medication.
- Has an LVEF less than 40%.
- Is examined and is not approved by a cardiologist for medical fitness to drive.
- Has a sternum that has not healed.

Monitoring/Testing

Because of the risk of reocclusion over time, 5 years post-CABG surgery, the driver should obtain:

- Annual exercise tolerance test.
- Imaging stress test, if indicated.

Follow-up

The driver should have an annual medical examination.

To review the Commercial Drivers With Known CHD Recommendation Tables, see Appendix D of this handbook.

Heart Failure

Coronary artery bypass grafting (CABG) surgery is frequently the preferred choice of therapy for individuals with multi-vessel coronary heart disease, narrowing of the proximal left main coronary artery, and extensive atherosclerosis in the presence of left ventricular dysfunction or debilitating angina.

Following CABG surgery, individuals are at less risk of sudden death than those who are treated medically. Most drivers who undergo CABG surgery are able to return to work. A longer waiting period is recommended to allow sternal incision healing. The sternum should be completely healed before certifying a driver.

A significant risk associated with CABG surgery is the high long-term reocclusion rate of the bypass graft.

Waiting Period

Minimum — 3 months regardless of type of CABG surgery performed

NOTE: *If more than one waiting period applies (because of multiple cardiac conditions or other comorbid diseases), examine the driver for certification after the completion of the longest waiting period.*

Decision

Maximum certification period — 1 year

Recommend to certify if:

The driver:

- Is asymptomatic.
- Tolerates cardiovascular medications with no orthostatic symptoms.
- Has a left ventricular ejection fraction (LVEF) greater than or equal to 40%.
- Is examined and approved by a cardiologist for medical fitness to drive.
- Has a healed sternum.

Recommend not to certify if:

The driver:

- Is symptomatic.
- Has orthostatic symptom side effects from cardiovascular medication.
- Has an LVEF less than 40%.
- Is examined and is not approved by a cardiologist for medical fitness to drive.
- Has a sternum that has not healed.

Monitoring/Testing

Because of the risk of reocclusion over time, 5 years post-CABG surgery, the driver should obtain:

- Annual exercise tolerance test.
- Imaging stress test, if indicated.

Follow-up

The driver should have an annual medical examination.

To review the Commercial Drivers With Known CHD Recommendation Tables, see Appendix D of this handbook.

Percutaneous Coronary Intervention

The Cardiovascular Advisory Panel Guidelines for the Medical Examination of Commercial Motor Vehicle Drivers recommendations for percutaneous coronary intervention (PCI) encompass angioplasty and other catheter-based techniques aimed at relieving coronary obstructions.

In the setting of an uncomplicated, elective procedure to treat stable angina, the post-procedure waiting period is 1 week. The waiting period allows for a small threat caused by acute complications at the vascular access site. Drivers undergoing PCI in the setting of an acute myocardial infarction or unstable angina should be restricted from driving duties for the longer waiting period recommended for these conditions.

Waiting Period

Minimum — 1 week

NOTE: *If more than one waiting period applies (because of multiple cardiac conditions or other comorbid diseases), examine the driver for certification after the completion of the longest waiting period.*

Decision

Maximum certification period — 1 year

Recommend to certify if:

The driver:

- Is asymptomatic at examination.
- Tolerates medications.
- Has no injury to the vascular access site.

NOTE: *Initially certify for up to 6 months. Recertify for up to 1 year if exercise tolerance test (ETT) results are satisfactory.*

Recommend not to certify if:

The driver has:

- Incomplete healing or complication at vascular access site.
- Rest angina.
- Ischemic electrocardiogram (ECG) changes.

Monitoring/Testing

NOTE: *Following initial certification, the driver should have an ETT 3 to 6 months post-percutaneous coronary intervention and bring results to a 6-month follow-up examination.*

The driver should obtain:

- Clearance from a cardiovascular specialist who understands the functions and demands of commercial driving.
- Biennial ETT.

NOTE: *If an ETT is inconclusive, an imaging stress test may be indicated.*

Follow-up

The driver should have an annual medical examination.

NOTE: *Delayed restenosis is the major PCI limitation and requires intensive secondary prevention. Typical angina symptoms should prompt evaluation with a stress imaging study or repeat angiography.*

To review the Commercial Drivers With Known CHD Recommendation Tables, see Appendix D of this handbook.

Congenital Heart Disease

Heart failure and sudden death are the major causes of death among individuals with congenital heart disease. Due to the complexity of these problems, the Cardiovascular Advisory Panel Guidelines for the Medical Examination of Commercial Motor Drivers recommend that the driver has regular, ongoing follow-up by a cardiologist knowledgeable in adult congenital heart disease.

The driver with congenital heart disease must meet the qualification standards. As a medical examiner, your decision to certify should be based on:

- Anatomic diagnosis.
- Severity of the congenital defect.
- Results of treatment.
- Present fitness status.
- Risk of sudden death or incapacitation.

Congenital Heart Disease Recommendation Table (PDF)

NOTE: *The Cardiovascular Advisory Panel Guidelines for the Medical Examination of Commercial Motor Vehicle Drivers discusses multiple congenital heart diseases, many of which are self-limiting. Advances in surgical and medical management are expected to result in an increased number of individuals with congenital heart disease seeking driver certification. Ebstein anomaly is included in the handbook because it is a condition you are likely to encounter in the clinical setting.*

Ebstein Anomaly

Ebstein anomaly is a congenital downward displacement of the tricuspid valve. The natural history of the patient with Ebstein anomaly depends on its severity. Adults with a mild form of Ebstein anomaly can remain asymptomatic throughout their lives.

Waiting Period

No recommended time frame

You should not certify the driver until etiology is confirmed and treatment has been shown to be adequate/effective, safe, and stable.

Decision

Maximum certification — 1 year

Recommend to certify if:

The driver:

- Is asymptomatic.
- Has a mild tricuspid anomaly.
- Has mild cardiac enlargement.
- Has mild right ventricular dysfunction.

Recommend not to certify if:

The driver has a(n):

- Moderate or severe anomaly.
- Intracardiac lesion.
- Shunt.
- Symptomatic arrhythmia.
- Accessory conduction pathway.

Monitoring/Testing

Annual cardiovascular re-evaluation should include echocardiography and evaluation by a cardiologist knowledgeable in adult congenital heart disease and who understands the functions and demands of commercial driving.

Follow-up

The driver should have an annual medical examination.

To review the Congenital Heart Disease Recommendation Table, see Appendix D of this handbook.

Heart Transplantation

Although the number of heart transplant recipients is relatively small, some recipients may wish to be commercial motor vehicle drivers. The major medical concerns for certification of a commercial driver heart recipient are transplant rejection and post-transplant atherosclerosis.

Waiting Period

Minimum — 1 year post transplant

NOTE: *If more than one waiting period applies (because of multiple cardiac conditions or other comorbid diseases), examine the driver for certification after the completion of the longest waiting period.*

Decision

Maximum certification period — 6 months

Recommend to certify if:

The driver:

- Is asymptomatic.
- Tolerates medications.
- Has clearance from a cardiovascular specialist who understands the functions and demands of commercial driving.
- Has no signs of transplant rejection.
- Meets all other qualification requirements.

Recommend not to certify if:

As the medical examiner, you believe that the nature and severity of the medical condition endangers the health and safety of the driver and the public.

Monitoring/Testing

Monitoring the driver with a heart transplant should include re-evaluation and recertification every 6 months by a cardiovascular specialist who:

- Is an expert in the fields of cardiology and transplant medicine.
- Understands the functions and demands of commercial driving.
- Evaluates the possibility of atherosclerosis, the status of the transplant, and the general health of the driver.

Follow-up

The driver should have a medical examination every 6 months.

To review the Heart Transplantation Recommendation Table, see Appendix D of this handbook.

Hypertension

See the Hypertension section of this handbook.

Myocardial Disease

Myocardial diseases are often progressive and require long-term follow-up. Even so, improved diagnostic testing and treatment can increase the number of drivers with myocardial disease who seek commercial motor vehicle driver certification.

Hypertrophic Cardiomyopathy

Hypertrophic cardiomyopathy is a complex disease characterized by marked morphologic, genetic, and prognostic heterogeneity. Some individuals experience a benign and stable clinical course, while in others the disease is characterized by progressive symptoms. For some individuals, sudden death is the first definitive manifestation of the disease.

Waiting Period

If you note an enlarged heart in a driver, you should not certify the driver until evaluation by a cardiovascular specialist who understands the functions and demands of commercial driving to confirm or rule out a diagnosis of hypertrophic cardiomyopathy.

Decision

Recommend to certify if:

Not applicable.

Recommend not to certify if:

The driver has a diagnosis of hypertrophic cardiomyopathy.

Monitoring/Testing

Not applicable.

Follow-up

Not applicable.

To review the Cardiomyopathies and Congestive Heart Failure Recommendation Table, see Appendix D of this handbook.

Restrictive Cardiomyopathy

The Mayo Clinic performed a study on idiopathic restrictive cardiomyopathy between 1979 and 1996. The Clinical Profile and Outcome of Idiopathic Restrictive Cardiomyopathy report indicated a 5-year survival rate of only 64%, compared with an expected survival rate of 85%.

Waiting Period

If you suspect restrictive cardiomyopathy in a driver, you should not certify the driver until evaluation by a cardiovascular specialist who understands the functions and demands of commercial driving to confirm or rule out a diagnosis of restrictive cardiomyopathy.

Decision

Recommend to certify if:

Not applicable.

Recommend not to certify if:

The driver has a diagnosis of restrictive cardiomyopathy.

Monitoring/Testing

Not applicable.

Follow-up

Not applicable.

To review the Cardiomyopathies and Congestive Heart Failure Recommendation Table, see Appendix D of this handbook.

Syncope

Syncope is a symptom, not a medical condition, that can present an immediate threat to public safety when causing the driver of a commercial motor vehicle to lose control of the vehicle.

As an example, syncope as a consequence of an arrhythmia while driving, places the driver and others around the driver at the time in serious jeopardy. Medications are available that are effective in managing ventricular arrhythmias and, although they are designed to prevent occurrences, they are not "fail-safe" and if an arrhythmia recurs, syncope may follow.

Recurrent, unexplained syncope and syncope from cardiac causes may herald a markedly increased future risk for sudden death.

As a medical examiner, you should ensure that:

- Diagnosis distinguishes between pre-syncope (i.e., dizziness, lightheadedness) and true syncope (i.e., loss of consciousness).
- The medications used by the driver do not predispose the driver to precipitous declines in blood pressure, syncope, fatigue, or electrolyte shifts and imbalances.
- Cardiac-based syncope is differentiated from other causes of syncope.
    - Conduction system diseases that cause syncope must be treated before the driver is considered for certification.
- Other forms of syncope, such as neurological-based conditions (e.g., migraine headache, seizures) are adequately evaluated.

You may refer to the Cardiovascular Advisory Panel Guidelines for the Medical Examination of Commercial Motor Vehicle Drivers for diagnosis-specific recommendations for:

- Hypersensitive carotid sinus with syncope.
- Neurocardiogenic syncope.

Waiting Period

No recommended time frame

You should not certify the driver until etiology is confirmed and treatment has been shown to be adequate/effective, safe, and stable.

Decision

Maximum certification period — 1 year

Recommend to certify if:

The driver:

- Has been treated for symptomatic disease.
- Is asymptomatic.
- Tolerates medications.
- Is at low risk for syncope/near syncope.
- Has clearance from an appropriate specialist (e.g., cardiologist, neurologist) who understands the functions and demands of commercial driving.

Recommend not to certify if:

The driver:

- Experiences syncope as a consequence of the disease process, regardless of the underlying condition.
- Is at high risk for syncope/near syncope, regardless of the underlying heart disease and/or treatment.

NOTE: *Distinguish between treatments that reduce the risk for syncope and treatments where the driver remains at risk for syncope. Certification also depends on the risk for syncope and gradual or sudden incapacitation from the underlying heart disease that may remain even after successful treatment of the conduction system disease.*

Monitoring/Testing

The driver should:

- Comply with medication and/or treatment guidelines, when appropriate.
- Have annual evaluation by a cardiovascular specialist who understands the functions and demands of commercial driving (refer to diagnosis-specific recommendations).

Follow-up

The driver should have an annual medical examination.

See the Supraventricular Tachycardias Recommendation Table and Pacemakers Recommendation Table in Appendix D of this handbook for diagnosis-specific recommendations.

Valvular Heart Diseases and Treatments

Murmurs are a common sign of valvular heart conditions; however the presence of a murmur may be associated with other cardiovascular conditions. As a medical examiner, you must distinguish between functional murmurs and pathological murmurs that are medically disqualifying.

Classification of Murmur Severity

The intensity of murmurs is classified on a scale of I to VI, from the least pronounced murmur to the loudest. Classification is rated as follows:

- Grade I – Must strain to hear a murmur.
- Grade II – Can hear a faint murmur without straining.
- Grade III – Can easily hear a moderately loud murmur.
- Grade IV – Can easily hear a moderately loud murmur that has a thrill.
- Grade V – Can hear the murmur when only part of the stethoscope is in contact with the skin.
- Grade VI – Can hear the murmur with the stethoscope close to the skin; it does not have to be in contact with the skin to detect the murmur.

Murmurs that are:

- Systolic and grade I or II are usually benign if the driver has no signs or symptoms of heart disease.
- Mid-systolic are usually benign if the driver has no signs or symptoms of heart disease.

Additional evaluation is recommended when murmurs are:

- Systolic, grade I or II, and the driver has signs or symptoms of heart disease.
- Systolic and grade III or higher.
- Holosystolic or late systolic.
- Diastolic or continuous.

Exceptions are common with the higher grade murmurs. When in doubt about the severity of a heart murmur, you should obtain additional evaluation.

Aortic Regurgitation

Aortic regurgitation is usually a chronic condition characterized by a prolonged asymptomatic phase and gradual left ventricular (LV) dilatation. Other conditions such as infective endocarditis and aortic dissection can result in acute severe aortic regurgitation. The recommendations are for chronic aortic regurgitation.

Recommendation parameters for aortic regurgitation include the severity of the diagnosis, LV size, and the presence of signs or symptoms.

Mild or moderate aortic regurgitation occurs in the presence of normal LV systolic function and little or no LV enlargement.

Severe aortic regurgitation occurs with a normal LV systolic function but significant LV dilatation.

Waiting Period

No recommended time frame

You should not certify the driver until etiology is confirmed and treatment has been shown to be adequate/effective, safe, and stable.

Decision

Maximum certification period — 1 year

Recommend to certify if:

The driver has:

- Mild aortic regurgitation that is asymptomatic.
- Moderate aortic regurgitation with normal LV function, no or mild LV enlargement, and the driver is asymptomatic.

Recommend not to certify if:

The driver has:

- Symptoms.
- Moderate aortic regurgitation with abnormal LV function or more than mild LV enlargement.

Monitoring/Testing

Echocardiography repeated every 2 to 3 years when certified with mild or moderate aortic regurgitation.

Follow-up

The driver should have an annual medical examination.

To review the Aortic Regurgitation Recommendation Table, see Appendix D of this handbook.

Waiting Period

Minimum — 3 months if post-aortic valve repair

NOTE: *If more than one waiting period applies (because of multiple cardiac conditions or other comorbid diseases), examine the driver for certification after the completion of the longest waiting period.*

Decision

Maximum certification period — 6 months if not surgically repaired

Maximum certification period — 1 year if post-aortic valve repair

NOTE: *The certification interval should not exceed the interval required for adequate monitoring.*

Recommend to certify if:

The driver has:

- No symptoms.
- Normal LV function.

- LV dilatation:
    - LV end-diastolic dimension (LVEDD) less than or equal to 60 mm.
    - LV end-systolic dimension (LVESD) less than or equal to 50 mm.

The driver who has had surgical repair for severe aortic regurgitation and meets guidelines for post-aortic valve repair may be recertified for 1 year.

Recommend not to certify if:

The driver:

- Is symptomatic.
- Is unable to achieve workload greater than 6 METS on Bruce protocol.
- Has reduced left ventricular ejection fraction less than 50%.
- Has LV dilatation:
    - LVEDD greater than 70 mm.
    - LVESD greater than 55 mm.

Monitoring/Testing

Echocardiography repeated every:

- 6 to 12 months if LVEDD less than 60mm or LVESD less than 50 mm.
- 4 to 6 months if LVEDD equal to 60mm or LVESD equal to 50 mm.

NOTE: *The certification interval for severe aortic regurgitation that has not been surgically repaired should not exceed 6 months even if the monitoring interval is greater than 6 months.*

Follow-up

The driver with severe aortic regurgitation should have a semi-annual medical examination. If surgically repaired, the driver may have an annual medical examination.

To review the Aortic Regurgitation Recommendation Table, see Appendix D of this handbook.

Aortic Stenosis

The most common cause of aortic stenosis in adults is a degenerative process associated with many of the risk factors underlying atherosclerosis. Aortic stenosis may cause a heart murmur.

Recommendation parameters for aortic stenosis include the severity of the diagnosis and the presence of signs or symptoms.

Waiting Period

Minimum — 3 months if post surgery

NOTE: *If more than one waiting period applies (because of multiple cardiac conditions or other comorbid diseases), examine the driver for certification after the completion of the longest waiting period.*

Decision

Maximum certification period — 1 year

Recommend to certify if:

The driver has:

- Mild aortic stenosis that is asymptomatic.
- Moderate aortic stenosis that is asymptomatic and the driver has no disqualifying findings and/or conditions.
- Severe aortic stenosis that has been surgically repaired and meets all aortic valve repair surgical guidelines.

Recommend not to certify if:

The driver has moderate aortic stenosis with one or more of the following:

- Angina.
- Heart failure.
- Atrial fibrillation.
- Left ventricular dysfunction with ejection fraction less than 50%.
- Thromboembolism.

The driver has severe aortic stenosis regardless of symptoms or left ventricular function.

Monitoring/Testing

Echocardiography repeated every:

- 5 years if mild aortic stenosis.
- 1 to 2 years if moderate aortic stenosis.

Follow-up

The driver should have an annual medical examination.

To review the Aortic Stenosis Recommendation Table, see Appendix D of this handbook.

Aortic Valve Repair

Aortic valve repair is a technique for repairing the existing aortic valve and usually does not require anticoagulant therapy. Early post-operative evaluation is required to assess adequacy of repair and extent of residual aortic regurgitation.

Waiting Period

Minimum waiting period — 3 months

NOTE: *If more than one waiting period applies (because of multiple cardiac conditions or other comorbid diseases), examine the driver for certification after the completion of the longest waiting period.*

Decision

Maximum certification period — 1 year

Recommend to certify if:

The driver:

- Meets asymptomatic aortic stenosis or aortic regurgitation qualification requirements.
- Has clearance from a cardiovascular specialist who understands the functions and demands of commercial driving.

Recommend not to certify if:

The driver has thromboembolic complications.

Monitoring/Testing

Two-dimensional echocardiography with Doppler should be performed prior to discharge. Additional monitoring and testing should be based on aortic regurgitation severity.

Follow-up

The driver should have an annual medical examination.

To review the Aortic Regurgitation Recommendation Table or the Aortic Stenosis Recommendation Table, see Appendix D of this handbook.

Mitral Regurgitation

Recommendation parameters for mitral regurgitation include the severity of the diagnosis and the presence of signs or symptoms. The development of symptoms, especially dyspnea, fatigue, orthopnea, and/or paroxysmal nocturnal dyspnea, is a marker of a poor prognosis, including an inability to perform driver tasks and increased risk for sudden cardiac death.

Waiting Period

Minimum — 3 months if post-surgical commissurotomy

NOTE: *If more than one waiting period applies (because of multiple cardiac conditions or other comorbid diseases), examine the driver for certification after the completion of the longest waiting period.*

Decision

Maximum certification period — 1 year

Recommend to certify if:

The driver has:

- Mild or moderate mitral regurgitation if asymptomatic, normal left ventricular (LV) size and function, normal pulmonary artery pressure.
- Severe mitral regurgitation that is asymptomatic.
- Surgical mitral valve repair for mitral regurgitation, is asymptomatic, and has clearance from a cardiovascular specialist who understands the functions and demands of commercial driving.

Recommend not to certify if:

The driver has mild, moderate, or severe mitral regurgitation and has:

- Symptoms.
- Less than 6 METs on Bruce protocol.
- Ruptured chordae or flail leaflet.
- Atrial fibrillation.
- LV dysfunction.
- Thromboembolism.
- Pulmonary hypertension.

Monitoring/Testing

The driver with:

- Moderate mitral regurgitation should have an annual echocardiography.
- Severe mitral regurgitation should have an exercise tolerance test and echocardiography every 6 to 12 months.

Follow-up

The driver should have an annual medical examination.

To review the Mitral Regurgitation Recommendation Table, see Appendix D of this handbook.

Mitral Stenosis

Recommendations for mitral stenosis are based on valve area size and the presence of signs or symptoms. Inquire about episodes of angina or syncope, fatigue, and the ability to perform tasks that require exertion.

Waiting Period

Minimum — 4 weeks if post-percutaneous balloon mitral valvotomy

Minimum — 3 months if post-surgical commissurotomy

NOTE: *If more than one waiting period applies (because of multiple cardiac conditions or other comorbid diseases), examine the driver for certification after the completion of the longest waiting period.*

Decision

Maximum certification period — 1 year

Recommend to certify if:

The driver has:

- Mild mitral stenosis that is asymptomatic.

- Moderate mitral stenosis that is asymptomatic.
- Severe mitral stenosis and a clearance from a cardiovascular specialist who understands the functions and demands of commercial driving following:

Recommend not to certify if:

The driver has severe mitral stenosis, until successfully treated.

Monitoring/Testing

The frequency of cardiovascular specialist evaluation depends on the development and severity of symptoms; however, it should be performed at least annually, including:

- Chest X-ray.
- Electrocardiogram.
- Two-dimensional echocardiography with Doppler or other mitral stenosis severity assessment.

Follow-up

The driver should have an annual medical examination.

To review the Mitral Stenosis Recommendation Table, see Appendix D of this handbook.

Mitral Stenosis Treatment

Management of mitral stenosis is based primarily on the development of symptoms and pulmonary hypertension rather than the severity of the stenosis itself. Treatment options for mitral stenosis include enlarging the mitral valve or cutting the band of mitral fibers.

Procedures include:

- Percutaneous balloon mitral valvotomy.
- Surgical commissurotomy.

Symptomatic improvement occurs almost immediately, but after 9 years, recurrent symptoms are present in approximately 60% of individuals.

Waiting Period

Minimum — 4 weeks

NOTE: *If more than one waiting period applies (because of multiple cardiac conditions or other comorbid diseases), examine the driver for certification after the completion of the longest waiting period.*

Decision

Maximum certification period — 1 year

Recommend to certify if:

The driver:

- Is asymptomatic.
- Has clearance from a cardiovascular specialist who understands the functions and demands of commercial driving.
- Has experienced no thromboembolic complications.
- Has experienced no pulmonary hypertension.
- Meets the certification recommendations for the underlying condition.

Recommend not to certify if:

The driver has:

- Thromboembolic complications.
- Pulmonary hypertension (pulmonary pressure greater than 50% of systemic blood pressure).

Monitoring/Testing

The driver should have an annual cardiology evaluation which should include:

- History.
- Physical examination.
- Electrocardiogram.
- Chest X-ray.
- Two-dimensional echocardiography with Doppler performed after the procedure and prior to discharge. The frequency of repeat echo-Doppler examinations is variable and depends upon the initial periprocedural outcome and the occurrence of symptoms.

Follow-up

The driver should have an annual medical examination.

To review the Mitral Stenosis Recommendation Table, see Appendix D of this handbook.

Waiting Period

Minimum — 3 months

NOTE: *If more than one waiting period applies (because of multiple cardiac conditions or other comorbid diseases), examine the driver for certification after the completion of the longest waiting period.*

Decision

Maximum certification period — 1 year

Recommend to certify if:

The driver:

- Is asymptomatic.
- Has clearance from a cardiovascular specialist who understands the functions and demands of commercial driving.
- Has experienced no thromboembolic complications.
- Has experienced no pulmonary hypertension.
- Meets the certification recommendations for the underlying condition.

Recommend not to certify if:

The driver has:

- Thromboembolic complications.
- Pulmonary hypertension (pulmonary pressure greater than 50% of systemic blood pressure).

Monitoring/Testing

The driver should have an annual cardiology evaluation which should include:

- History.
- Physical examination.
- Electrocardiogram.
- Chest X-ray.
- Two-dimensional echocardiography with Doppler performed after the procedure and prior to discharge. The frequency of repeat echo-Doppler examinations is variable and depends upon the initial periprocedural outcome and the occurrence of symptoms.

Follow-up

The driver should have an annual medical examination.

To review the Mitral Stenosis Recommendation Table, see Appendix D of this handbook.

Mitral Valve Prolapse

The natural history of mitral valve prolapse is extremely variable and depends on the extent of myxomatous degeneration, the degree of mitral regurgitation, and association with other conditions.

Mitral valve prolapse is usually a benign condition. In some cases, mitral regurgitation may be progressive, resulting in left ventricular (LV) and left atrial enlargement, atrial fibrillation, and congestive heart failure.

Waiting Period

No recommended time frame

You should not certify the driver until etiology is confirmed and treatment has been shown to be adequate/effective, safe, and stable.

Decision

Maximum certification period — 1 year

Recommend to certify if:

As the medical examiner, you believe that the nature and severity of the medical condition of the driver does not endanger the health and safety of the driver and the public.

Recommend not to certify if:

The driver has:

- Symptoms or reduced effort tolerance due to mitral valve prolapse or mitral regurgitation.
- Ruptured chordae or flail leaflet.
- Systemic emboli.
- Atrial fibrillation.
- Syncope or documented ventricular tachycardia.
- Severe mitral regurgitation or LV dysfunction.

Monitoring/Testing

Exercise tolerance testing may be helpful to assess symptoms.

Drivers who have definite mitral regurgitation (even if mild) or markedly thickened leaflets, should have:

- Echocardiography at least annually.
- Clearance from a cardiovascular specialist who understands the functions and demands of commercial driving.

Follow-up

The driver should have an annual medical examination.

Mitral Valve Repair for Mitral Regurgitation

The majority of inadequate valvular repair procedures can be detected in the early perioperative period. Careful evaluation at this time includes a two-dimensional echocardiography with Doppler and, if necessary, transesophageal echocardiography.

Waiting Period

Minimum — 3 months

NOTE: *If more than one waiting period applies (because of multiple cardiac conditions or other comorbid diseases), examine the driver for certification after the completion of the longest waiting period.*

Decision

Maximum certification period — 1 year

Recommend to certify if:

The driver is asymptomatic and meets the underlying mild, moderate, or severe mitral regurgitation recommendations. The driver should also have clearance from a cardiovascular specialist who understands the functions and demands of commercial driving.

Recommend not to certify if:

The driver has:

- Thromboembolic complications.
- Atrial fibrillation.
- Pulmonary hypertension.

Monitoring/Testing

You may on a case-by-case basis obtain additional tests and/or consultation to adequately assess driver medical fitness for duty.

Follow-up

The driver should have an annual medical examination.

To review the Mitral Regurgitation Recommendation Table, see Appendix D of this handbook.

Prosthetic Valves

Prosthetic valves can be mechanical or biological. There are a wide range of reported complications depending upon the variable methods of reporting, the make and model of the prosthesis, the site of implantation, comorbidities, and underlying left ventricular (LV) function, among other causes.

The clinical course is heavily influenced by factors other than valve-related complications, for example, LV dysfunction, congestive heart failure, progression of disease in other valves, coronary disease, or pulmonary hypertension.

Waiting Period

Minimum — 3 months

NOTE: *If more than one waiting period applies (because of multiple cardiac conditions or other comorbid diseases), examine the driver for certification after the completion of the longest waiting period.*

Decision

Maximum certification period — 1 year

Recommend to certify if:

The driver:

- Is asymptomatic.
- Has clearance from a cardiovascular specialist who understands the functions and demands of commercial driving.

Recommend not to certify if:

The driver has:

- Persistent symptoms.
- LV dysfunction (ejection fraction less than 40%).
- Thromboembolic complications post procedure.
- Atrial fibrillation.
- Pulmonary hypertension.
- Inadequate anticoagulation based on International Normalized Ratio (INR) checks at least monthly.

Monitoring/Testing

If treatment includes anticoagulant therapy, the driver should meet INR monitoring guidelines.

Echocardiography is indicated in the event of concerns about prosthetic valve dysfunction, perivalvular leaks, new murmurs, or LV function.

Exercise tolerance testing may be required to assess work capacity.

Follow-up

The driver should have an annual medical examination.

To review the Valve Replacement Recommendation Table, see Appendix D of this handbook.

Pulmonary Valve Stenosis

Pulmonary valve stenosis is usually a well-tolerated cardiac lesion normally exhibiting a gradual progression. Gradual or sudden incapacitation may, however, occur in certain circumstances.

Waiting Period

Minimum — 1 month if post-balloon valvuloplasty

Minimum — 3 months if post-surgical valvotomy

NOTE: *If more than one waiting period applies (because of multiple cardiac conditions or other comorbid diseases), examine the driver for certification after the completion of the longest waiting period.*

Decision

Maximum certification period — 1 year

Recommend to certify if:

The driver has:

- Mild or moderate pulmonary valve stenosis.
- Pulmonary valve stenosis corrected by surgical valvotomy or balloon valvuloplasty.

Recommend not to certify if:

The driver has:

- Symptoms of dyspnea, palpitations, or syncope.
- Pulmonary valve peak gradient greater than 50 mm Hg in the presence of a normal cardiac output.
- Right ventricular pressure greater than 50% systemic pressure.
- More than mild right ventricular hypertrophy noted by echocardiography.
- More than mild right ventricular dysfunction noted by echocardiography.
- More than moderate pulmonary valve regurgitation noted by echocardiography.
- Main pulmonary artery diameter more than 5 cm noted by echocardiography or other imaging modality.

Monitoring/Testing

The driver should have annual cardiology evaluations by a cardiovascular specialist who is knowledgeable in adult congenital heart disease and who understands the functions and demands of commercial driving.

Follow-up

The driver should have an annual medical examination.

To review the Congenital Heart Disease Recommendation Table, see Appendix D of this handbook.

Respiratory (b)(5)

The commercial driver spends more time driving than the average individual. Driving is a repetitive and monotonous activity that demands the driver be alert at all times. Symptoms of respiratory dysfunction or disease can be debilitating and can interfere with the ability to remain attentive to driving conditions and to perform heavy exertion. Even the slightest impairment in respiratory function under emergency conditions (when greater oxygen supply may be necessary for performance) can be detrimental to safe driving.

There are many primary and secondary respiratory conditions that interfere with oxygen exchange and may result in gradual or sudden incapacitation, for example:

- Asthma.
- Carcinoma.
- Chronic bronchitis.
- Emphysema.
- Obstructive sleep apnea.
- Tuberculosis.

In addition, medications used to treat respiratory conditions, both prescription and those available without a prescription, may cause cognitive difficulties, compound the risk for excessive daytime sleepiness (EDS), or cause other forms of incapacitation.

Respirator Regulation 4 CF 391.41(b)(5)

"A person is physically qualified to drive a commercial motor vehicle if that person —

Has no established medical history or clinical diagnosis of a respiratory dysfunction likely to interfere with his/her ability to control and drive a commercial motor vehicle safely."

Health History and Physical Examination

General Purpose of Health History and Physical Examination

The general purpose of the history and physical examination is to detect the presence of physical, mental, or organic conditions of such character and extent as to affect the ability of the driver to operate a commercial motor vehicle (CMV) safely. This examination is for public safety determination and is considered by the Federal Motor Carrier Safety Administration (FMCSA) to be a “medical fitness for duty" examination.

As the medical examiner, your fundamental obligation during the respiratory assessment is to establish whether a driver has a respiratory disease or disorder that increases the risk for sudden death or incapacitation, thus endangering public safety.

The examination is based on information provided by the driver (history), objective data (physical examination), and additional testing requested by the medical examiner. Your assessment should reflect physical, psychological, and environmental factors.

Medical certification depends on a comprehensive medical assessment of overall health and informed medical judgment about the impact of single or multiple conditions on the whole person.

Key Points for Respiratory Examination

During the physical examination, you should ask the same questions as you would for any individual who is being assessed for respiratory diseases or disorders. The FMCSA Medical Examination Report form includes health history questions and physical examination checklists. Additional questions about symptoms of respiratory disease should be asked to supplement information requested on the form.

Regulations — You must review and discuss with the driver any "yes" answers

Does the driver have:

- Shortness of breath?
- Lung disease?
- Emphysema?
- Asthma?
- Chronic bronchitis?
- Sleep disorder?
- Pauses in breathing while asleep?
- Daytime sleepiness?
- Loud snoring?

Recommendations — Questions that you may ask include

Does the driver:

- Smoke? If yes, how much and for how long?
- Feel short of breath while driving?
- Cough frequently? If yes, is the cough productive of sputum?
- Experience tightness of the chest while resting or exercising?
- Wheeze during the day or night?
- Use respiratory agents?
- Use oxygen therapy?
- Self-report sleepiness that may indicate increased risk for EDS?

Regulations — You must evaluate

On examination, does the driver have:

- Impaired respiratory function?
- Cyanosis?
- Abnormal:
    - Chest wall expansion?
    - Respiratory rate?
    - Breath sounds, including wheezes or alveolar rales?
    - Findings that may require further testing such as pulmonary tests and/or X-ray of chest?

Recommendations — You may request

A detailed pulmonary function evaluation or consultation with a pulmonologist when the physical examination reveals:

- Clubbing of the fingers.
- Cyanosis.
- Prolonged expiration.
- Tachypnea at rest.
- Pulmonary wheezes and rhonchi, pulmonary rales.
- Absent or decreased breath sounds.
- Pleural friction rub.
- Unequal inflation-deflation contours of the right and left thorax.
- Significant kyphosis or scoliosis of the thoracic spine.
- Use of accessory muscles of ventilation at rest.

NOTE: *When requesting additional evaluation from a specialist, the specialist must understand the role and function of a driver; therefore, it is helpful if you include a copy of the description of the driver role*

found in the Medical Examination Report form and a copy of the applicable medical standard and guidelines with the request.

Record

Regulations — You must document discussion with the driver about

- Any affirmative respiratory history, including if available:
    - Onset date, diagnosis.
    - Medication(s), dose, and frequency.
    - Any current limitation(s).
- Potential negative effects of medication use, including over-the-counter medications, while driving.
- Any abnormal finding(s), noting:
    - Effect on driver ability to operate a CMV safely.
    - Necessary steps to correct the condition as soon as possible, particularly if the untreated condition could result in more serious illness that might affect driving.
- Any additional respiratory tests and evaluation.

REMEMBER: *Medical fitness for duty includes the ability to perform strenuous labor. Overall requirements for commercial drivers as well as the specific requirements in the job description of the driver should be deciding factors in the certification process.*

Advisory Criteria/Guidance

Antihistamine Therapy

Both prescription and over-the-counter antihistamines are used to treat respiratory tract congestion.

First generation antihistamines have sedating side effects that may occur without the driver being aware. Many first generation antihistamines are available without prescription.

Second generation antihistamines have less incidence of sedating side effects and most do not interfere with driving. Some are available without prescription.

NOTE: *You should discuss common prescriptions and over-the-counter medications relative to the side effects and the risks associated with using medications while driving. Educate the driver to read warning labels on all medications.*

Waiting Period

Minimum — The driver should abstain from medication for 12 hours prior to operating a vehicle

NOTE: *The individuals responsible for commercial driver work schedules should relieve affected drivers from duty until proper treatment for the illness has been completed.*

Decision

Recommend to certify if:

As the medical examiner, you believe that the treatment does not endanger the health and safety of the driver and the public.

Recommend not to certify if:

Treatment interferes with driving ability.

Monitoring/Testing

Not applicable.

Follow-up

Not applicable.

Allergies and Asthma-related Diseases

Allergic Rhinitis

Allergic rhinitis, which involves inflammation of the nasal portion of the upper respiratory tract, should rarely render the driver medically unqualified for commercial driving. The symptoms should be treated with nonsedating antihistamines or with local steroid sprays that do not interfere with driving ability.

Waiting Period

No recommended time frame

You should not certify the driver until etiology is confirmed and treatment has been shown to be adequate/effective, safe, and stable.

Decision

Maximum certification — 2 years

Recommend to certify if:

As the medical examiner, you believe that the nature and severity of the medical condition of the driver does not endanger the health and safety of the driver and the public.

Recommend not to certify if:

The driver has complications and/or treatment that impairs function, including:

- Severe conjunctivitis affecting vision.
- Inability to keep eyes open.
- Photophobia.
- Uncontrollable sneezing fits.
- Sinusitis with severe headaches.
- Medications that cause sedation or other side effects that interfere with safe driving.

Monitoring/Testing

You may on a case-by-case basis obtain additional tests and/or consultation to adequately assess driver medical fitness for duty.

Follow-Up

The driver should have follow-up dependent upon the clinical course of the condition and recommendation of the treating healthcare provider.

Allergy-related Life-threatening Conditions

These conditions encompass systemic anaphylaxis and acute upper airway obstruction induced by allergens, genetic deficiencies, or unknown mechanisms, including:

- Stinging insect allergy that may result in acute anaphylaxis following a sting. Preventive measures include carrying an epinephrine injection device in the truck cab and evaluating the driver for immunotherapy.
- Hereditary or acquired angioedema due to deficiency of a serum protein controlling complement function that may result in an acute, life-threatening airway obstruction or severe abdominal pain requiring urgent medical attention. Prevention and control can and should be accomplished with appropriate prophylactic medication.
- Acute recurrent episodes of idiopathic anaphylaxis or angioedema that may occur unpredictably in some individuals and lead to sudden onset of severe dyspnea, visual disturbance, loss of consciousness, or collapse. Similar episodes occur due to known allergens, including medications, which ordinarily can be avoided.

Waiting Period

Individuals with a history of an allergy-related life-threatening condition must have undertaken successful preventive measures and/or treatment without adverse effects before the driver can be considered medically qualified.

Decision

Maximum certification — 2 years

Recommend to certify if:

As the medical examiner, you believe that the nature and severity of the medical condition and the prevention and treatment regimen do not endanger the health and safety of the driver and the public.

Recommend not to certify if:

The driver with a history of an allergy-related life-threatening condition does not have:

- Effective treatment regimen.
- Successful preventive measures.

Monitoring/Testing

You may on a case-by-case basis obtain additional tests and/or consultation to adequately assess driver medical fitness for duty.

Follow-Up

The driver should have follow-up dependent upon the clinical course of the condition and recommendation of the treating healthcare provider.

Asthma

Asthma is a common disease. Individuals with asthma generally exhibit reversible airway obstruction that can be treated effectively with pharmaceutical agents such as bronchodilators and corticosteroids; however, asthma ranges in severity from essentially asymptomatic to potentially fatal.

In some drivers, complications of asthma and/or side effects of therapy may interfere with safe driving. You are responsible on a case-by-case basis for ensuring that the driver is medically fit for duty.

Waiting Period

No recommended time frame

You should not certify the driver until the etiology is confirmed and treatment has been shown to be adequate/effective, safe, and stable.

Decision

Maximum certification — 2 years

Recommend to certify if:

As the medical examiner, you believe that the nature and severity of the medical condition is stable and does not endanger the health and safety of the driver and the public.

Recommend not to certify if:

The driver exhibits either:

- Continual, uncontrolled, symptomatic asthma.
- Significant impairment of pulmonary function (forced expiratory volume in the first second of expiration (FEV_1) less than 65%) and significant hypoxemia (partial pressure of arterial oxygen (PaO_2) less than 65 millimeters of mercury (mm Hg)).

Monitoring/Testing

You may on a case-by-case basis obtain additional tests and/or consultation to adequately assess driver medical fitness for duty.

Follow-up

The driver should have follow-up dependent upon the clinical course of the condition and recommendation of the treating healthcare provider.

Hypersensitivity Pneumonitis

Hypersensitivity pneumonitis is an immune-mediated granulomatous interstitial pneumonitis that may present as an acute recurrent, subacute, or chronic illness variously manifested by dyspnea, cough, and fever. The condition may not prevent an individual from qualifying for commercial driving; however, the driver with this condition requires medical care to alleviate symptoms of dyspnea, cough, and fever.

Also, the driver should avoid exposure to the causative agent (e.g., transporting the agent) because severe respiratory impairment could occur with repeated exposure.

Waiting Period

No recommended time frame

You should not certify the driver until etiology is confirmed and treatment has been shown to be adequate/effective, safe, and stable.

Decision

Maximum certification — 2 years

Recommend to certify if:

As the medical examiner, you believe that the nature and severity of the medical condition of the driver does not endanger the health and safety of the driver and the public.

Recommend not to certify if:

As the medical examiner, you believe that the nature and severity of the medical condition of the driver endangers the health and safety of the driver and the public.

Monitoring/Testing

Chest X-ray usually reveals interstitial disease. Serum contains precipitating antibodies to the causative antigen.

Follow-up

The driver should have at least biennial medical examinations.

Chronic Obstructive Pulmonary Disease

Chronic obstructive pulmonary disease (COPD) is not a single disease, but a group of medical conditions characterized by chronic reduction of maximal expiratory flow most often caused by:

- Chronic bronchitis.
- Emphysema.

Most drivers with COPD have a combination of chronic bronchitis and emphysema. COPD has an insidious onset. The driver may have substantial reduction in lung function prior to developing dyspnea on exertion. The cardinal symptoms are:

- Chronic cough.
- Sputum production.
- Dyspnea on exertion.

As the disease progresses, these symptoms can become incapacitating. In the majority of cases, cigarette smoking is a primary etiologic factor.

Waiting Period

No recommended time frame

You should not certify the driver until etiology is confirmed and treatment has been shown to be adequate/effective, safe, and stable.

Decision

Maximum certification — 2 years

Recommend to certify if:

As the medical examiner, you believe that the nature and severity of the medical condition of the driver is stable and does not endanger the health and safety of the driver and the public.

Recommend not to certify if:

The driver has:

- Hypoxemia at rest.
- Chronic respiratory failure.
- History of continuing cough with cough syncope.

Monitoring/Testing

Obvious difficulty breathing in a resting position is an indicator for additional pulmonary function tests. If the forced expiratory volume in the first second of expiration (FEV1) is less than 65% of that predicted, arterial blood gas measurements should be evaluated.

NOTE: *Smokers have a high incidence of COPD, yet individuals may have a significant reduction in lung function without symptoms. Spirometry should be performed in all smokers over the age of 35 years.*

Follow-up

The driver should have follow-up dependent upon the clinical course of the condition and recommendation of the treating healthcare provider.

Infectious Respiratory Diseases

Acute Infectious Diseases

For illnesses such as the common cold, influenza, and acute bronchitis, the driver should:

- Be relieved from duty until proper treatment for the illness has been completed.
- Abstain from driving a vehicle for at least 12 hours after taking sedating medications.
- Avoid operating a vehicle during the time that the disease is contagious.

Many of these conditions are of short duration and proper treatment for the illness must be completed for return-to-work.

Waiting Period

No recommended time frame

Decision

Maximum certification — 2 years

Recommend to certify if:

As the medical examiner, you believe that the nature and severity of the medical condition of the driver does not endanger the health and safety of the driver and the public.

Recommend not to certify if:

As the medical examiner, you believe that the nature and severity of the medical condition of the driver endangers the health and safety of the driver and the public.

Monitoring/Testing

Medications used to treat respiratory tract congestion, such as prescriptions and/or over-the-counter antihistamines or narcotic antitussives, can cause drowsiness and loss of attention. You should educate the driver to refrain from operating a vehicle for at least 12 hours after taking a medication with sedating side effects.

Follow-Up

The driver should have at least biennial medical examinations.

Atypical Tuberculosis

Atypical tuberculosis (TB) covers the same broad spectrum of symptoms and disability as TB. Many individuals are colonized, but not infected with atypical organisms, usually Mycobacterium avium and Mycobacterium intracellulare. The broad group of atypical Mycobacteria are considered noninfectious and do not pose the problem of contagion. The major issue to be determined is the amount of disease the patient has and the extent of the symptoms. Many cases of Mycobacteria cause very few symptoms. The X-ray findings are often migratory and are associated with cough, mild hemoptysis, and sputum production.

Atypical TB is not generally treated with medication; however, if the driver is using medication, you should assess for side effects that interfere with driving ability.

The certification issues include the amount of disease the driver has experienced and the severity of the symptoms. The potential risk is that if the disease is progressive, respiratory insufficiency may develop.

Waiting Period

No recommended time frame

You should not certify the driver until etiology is confirmed and treatment has been shown to be adequate/effective, safe, and stable.

Decision

Maximum certification — 2 years

Recommend to certify if:

The disease remains relatively stable and the driver has normal lung function and tolerates the medical regimen.

Recommend not to certify if:

The driver has:

- Extensive pulmonary dysfunction.
- Weakness.
- Fatigue.
- Adverse reaction to medical treatment.

Monitoring/Testing

You should perform pulmonary function tests if you suspect the disease has become progressive and may cause extensive pulmonary symptoms.

Follow-Up

The driver should have follow-up dependent upon the clinical course of the condition and recommendation of the treating healthcare provider.

Pulmonary Tuberculosis

Although modem therapy has been extremely successful in controlling this disease, pulmonary tuberculosis (TB) persists in some individuals while on therapy or in individuals who are noncompliant with therapy. Advanced TB may cause respiratory insufficiency; however, risk of recurrence after adequate therapy is low.

Waiting Period

No recommended time frame

You should not certify until:

- Driver is determined not to be contagious.
- Etiology is confirmed and treatment has been shown to be adequate/effective, safe, and stable.

Decision

Maximum certification — 2 years

Recommend to certify if:

The driver:

- Is not contagious.
- Has completed streptomycin therapy without affecting hearing and/or balance.
- Is compliant with antitubercular therapy.
- Has no side effects that interfere with safe driving.

Recommend not to certify if:

The driver has:

- Advanced TB with respiratory insufficiency not meeting pulmonary function test criteria.
- Chronic TB.
- Exhibited noncompliance with antitubercular therapy.
- Not completed streptomycin therapy.
- Residual eighth cranial nerve damage that affects balance and/or hearing to an extent that interferes with safe driving.

Monitoring/Testing

You may on a case-by-case basis obtain additional tests and/or consultation to adequately assess driver medical fitness for duty.

A positive intermediate tuberculin skin test (5 tuberculin units (TU)) indicates a previous TB infection. A positive purified protein derivative (PPD) skin test associated with a normal chest X-ray requires no further action. If X-ray changes are present suggesting pulmonary TB findings, there is a need for further evaluation.

If the conversion occurred within the last year, active disease may develop and prophylactic therapy should take place. This circumstance would not require limiting the activities of the driver unless medication side effects and/or adverse reactions occur.

Follow-Up

The driver should have follow-up dependent upon the clinical course of the condition and recommendation of the treating healthcare provider.

Non-infectious Respiratory Diseases

This category includes a number of diseases that cause significant long-term structural changes in the lungs and/or thorax and, therefore, interfere with the functioning of the lungs. Obvious difficulty breathing in a resting position is an indicator for additional pulmonary testing. Certification is determined by clinical evaluation.

Chest Wall Deformities

Acute or chronic chest wall deformities may affect the mechanics of breathing with an abnormal vital capacity as the predominant abnormality. Examples of these disorders include kyphosis, kyphoscoliosis, pectus excavatum, ankylosing spondylitis, massive obesity, and recent thoracic/upper abdominal surgery or injury.

The driver certified with a chest wall deformity should have airway function near normal.

No specific medication exists for treatment of this category. However, individuals may be particularly sensitive to the side effects of alcohol, antidepressants, and sleeping medications, even in small doses.

Waiting Period

No recommended time frame

You should not certify the driver until etiology is confirmed and any associated treatment has been shown to be adequate/effective, safe, and stable.

Decision

Maximum certification — 2 years

Recommend to certify if:

As the medical examiner, you believe that the nature and severity of the medical condition does not endanger the health and safety of the driver and the public.

Recommend not to certify if:

The driver has:

- Hypoxemia at rest.
- Chronic respiratory failure.
- History of continuing cough with cough syncope.

Monitoring/Testing

Obvious difficulty breathing in a resting position is an indicator for additional pulmonary function tests. If the forced expiratory volume in the first second of expiration (FEV1) is less than 65% of that predicted, arterial blood gas measurements should be evaluated.

Follow-Up

The driver should have follow-up dependent upon the clinical course of the condition and recommendation of the treating healthcare provider.

Chronic Obstructive Pulmonary Disease

Chronic obstructive pulmonary disease (COPD) is not a single disease, but a group of medical conditions characterized by chronic reduction of maximal expiratory flow most often caused by:

- Chronic bronchitis.
- Emphysema.

Most drivers with COPD have a combination of chronic bronchitis and emphysema. COPD has an insidious onset. The driver may have substantial reduction in lung function prior to developing dyspnea on exertion. The cardinal symptoms are:

- Chronic cough.
- Sputum production.
- Dyspnea on exertion.

As the disease progresses, these symptoms can become incapacitating. In the majority of cases, cigarette smoking is a primary etiologic factor.

Waiting Period

No recommended time frame

You should not certify the driver until etiology is confirmed and treatment has been shown to be adequate/effective, safe, and stable.

Decision

Maximum certification — 2 years

Recommend to certify if:

As the medical examiner, you believe that the nature and severity of the medical condition of the driver is stable and does not endanger the health and safety of the driver and the public.

Recommend not to certify if:

The driver has:

- Hypoxemia at rest.
- Chronic respiratory failure.
- History of continuing cough with cough syncope.

Monitoring/Testing

Obvious difficulty breathing in a resting position is an indicator for additional pulmonary function tests. If the forced expiratory volume in the first second of expiration (FEV1) is less than 65% of that predicted, arterial blood gas measurements should be evaluated.

NOTE: *Smokers have a high incidence of COPD, yet individuals may have a significant reduction in lung function without symptoms. Spirometry should be performed in all smokers over the age of 35 years.*

Follow-Up

The driver should have follow-up dependent upon the clinical course of the condition and recommendation of the treating healthcare provider.

Cystic Fibrosis

Until recently, few individuals with cystic fibrosis (CF) lived into adulthood, but with modern therapy the number of survivors continues to increase. Treatment for CF may require almost continuous antibiotic therapy and daily respiratory therapy to mobilize abnormal secretions. Chronic debilitating illness may result in limited physical strength. Some individuals have a mild form of the disease that may not be diagnosed until early adulthood.

Individuals must be evaluated as to the extent of their disease and symptoms and ability to obtain therapy while working.

Waiting Period

No recommended time frame

You should not certify the driver until it has been documented that treatment has been shown to be adequate/effective, safe, and stable and the driver complies with continuing medical surveillance by the appropriate specialist.

Decision

Maximum certification — 2 years

NOTE: *When the driver has a condition or treatment that you believe requires frequent monitoring, the Agency believes that in the absence of other defined parameters, the general recommendation from the 1988 neurological conference report stating, "Any driver with a deficit that requires special evaluation and screening should have annual recertification," is a reasonable guideline for maximum certification not to exceed 1 year.*

Recommend to certify if:

As the medical examiner, you believe that the nature and severity of the medical condition of the driver does not endanger the health and safety of the driver and the public.

Recommend not to certify if:

The driver has:

- Hypoxemia at rest.
- Chronic respiratory failure.
- History of continuing cough with cough syncope.
- Not met spirometry parameters.
- Unstable condition and/or treatment regimen.

Monitoring/Testing

Obvious difficulty breathing in a resting position is an indicator for additional pulmonary function tests. If the forced expiratory volume in the first second of expiration (FEV1) is less than 65% of that predicted, arterial blood gas measurements should be evaluated.

Follow-up

The driver should have follow-up dependent upon the clinical course of the condition and recommendation of the treating specialist, but at least annually.

Interstitial Lung Disease

The interstitial lung diseases (ILDs) are a heterogeneous group of diseases classified together because of common clinical X-ray, physiologic, and pathologic features. Occupational and environmental exposures are common causes of ILDs.

A history of breathlessness while driving, walking short distances, climbing stairs, handling cargo or equipment, and entering or exiting the cab or cargo space should initiate a careful evaluation of pulmonary function for any disqualifying secondary conditions.

Although the course of ILDs is variable, progression of the disease is common and often insidious. Treatment side effects pose a significant potential problem because of the use of conicosteroids and cytotoxic agents and should be taken into account when assessing commercial drivers.

Waiting Period

No recommended time frame

You should not certify the driver until etiology is confirmed and treatment has been shown to be adequate/effective, safe, and stable.

Decision

Maximum certification — 2 years

Recommend to certify if:

As the medical examiner, you believe that the nature and severity of the medical condition of the driver does not endanger the health and safety of the driver and the public.

Recommend not to certify if:

The driver has:

- Hypoxemia at rest.
- Chronic respiratory failure.
- History of continuing cough with cough syncope.

Monitoring/Testing

Obvious difficulty breathing in a resting position is an indicator for additional pulmonary function tests. If the forced expiratory volume in the first second of expiration (FEV1) is less than 65% of that predicted, arterial blood gas measurements should be evaluated.

Follow-up

The driver should have follow-up dependent upon the clinical course of the condition and recommendation of the treating healthcare provider.

Pneumothorax

Pneumothorax (air in the pleural space) may follow trauma to the chest or may occur spontaneously.

Traumatic Pneumothorax - A medical history and physical examination will provide the details of the event but may not help to ascertain recovery. Complete recovery should be confirmed by chest X-rays.

Spontaneous Pneumothorax - If spontaneous pneumothorax complicates an existing lung disease (e.g., emphysema), then the underlying lung disease will determine the chance of a recurrent pneumothorax and the certification outcome. Chest X-rays (especially views in deep inspiration and full expiration) will confirm the resolution of air from the pleural space but may show some residual pleural scarring or apical blebs or bullae.

Waiting Period

No recommended time frame

Ensure complete recovery using chest X-rays. If there is air in the pleural space and/or air in the mediastinum (pneumomediastinum) additional time away from work is indicated.

Decision

Maximum certification — 2 years

Recommend to certify if:

The driver:

- Is asymptomatic without chest pain or shortness of breath.
- Has no disqualifying underlying lung disease.
- Has confirmed resolution of the single spontaneous pneumothorax.
- Has successful pleurodesis and meets acceptable pulmonary parameters.

Recommend not to certify if:

The driver has:

- Not met certification parameters.
- A history of two or more spontaneous pneumothoraces on one side if no successful surgical procedure has been done to prevent recurrence.
- Hypoxemia at rest.
- Chronic respiratory failure.
- A history of continuing cough with cough syncope.

Monitoring/Testing

Chest X-rays with the frequency determined by both clinical assessment and by recurrence rates.

Follow-up

The driver should have follow-up dependent upon the clinical course of the condition and recommendation of the treating healthcare provider.

Pulmonary Function Tests

Physiological impairment is potentially present in many lung disorders. Indicators for obtaining pulmonary function testing (PFT) include:

- History of any specific lung disease.
- Symptoms of shortness of breath, cough, chest tightness, or wheezing.
- Cigarette smoking in drivers 35 years of age or older.

Spirometry

You should obtain forced expiratory volume in the first second of expiration (FEV1), forced vital capacity (FVC), and FEV1/FVC ratio when any of the following indicators are present:

- History of any specific lung disease.
- Symptoms of shortness of breath, cough, chest tightness, or wheezing.
- Cigarette smoking in drivers 35 years of age or older.

No further testing is necessary if the lung function is normal and no other abnormality is suspected. Abnormal lung function should be further evaluated.

Screening pulse oximetry and/or arterial blood gas (ABG) analysis are indicated when:

- Condition causes airway obstruction and pulmonary function test results are:
  - FEV_1 less than 65% of the predicted value.
  - FEV_1/FVC ratio less than 65%.
- Restrictive impairment is present and FVC is less than 60%.

Screening Pulse Oximetry

If oximetry is less than 92% (oximetry equals 70), the driver must have an ABG analysis.

Arterial Blood Gas Analysis

Recommend not to certify the driver when ABG measurements reveal:

- Partial pressure of arterial oxygen (PaO_2) less than:
  - 65 millimeters of mercury (mm Hg) at altitudes below 5,000 feet.
  - 60 mm Hg at altitudes above 5,000 feet.
- Partial pressure of arterial carbon dioxide ($PaCO_2$) greater than 45 mm Hg at any altitude.

Secondary Respiratory Conditions and Underlying Disorders

Cor Pulmonale

Cor pulmonale refers to enlargement of the right ventricle secondary to disorders affecting lung structure or function. In North America, the most common pulmonary cause of cor pulmonale is hypoxic pulmonary vasoconstriction in individuals with chronic obstructive pulmonary disease. The most common cause of right ventricular dilation or enlargement is pulmonary hypertension secondary to left heart disease.

The major risks are:

- Dizziness.
- Hypotension.
- Syncope.
- Common side effects of vasodilators that may interfere with driving.

Waiting Period

No recommended time frame

You should not certify the driver until diagnosis is confirmed and/or treatment has been shown to be adequate/effective, safe, and stable.

Decision

Maximum certification — 2 years

NOTE: *When the driver has a condition or treatment that you believe requires frequent monitoring, the Agency believes that in the absence of other defined parameters, the general recommendation from the 1988 neurological conference report stating, "Any driver with a deficit that requires special evaluation and screening should have annual recertification," is a reasonable guideline for maximum certification not to exceed 1 year.*

Recommend to certify if:

As the medical examiner, you believe that the nature and severity of the medical condition does not endanger the health and safety of the driver and the public.

Recommend not to certify if:

The driver has:

- Dyspnea at rest.
- Dizziness.
- Hypotension.
- Partial pressure of arterial oxygen (PaO_2) in arterial blood greater than 65 millimeters of mercury (mm Hg).

Monitoring/Testing

Obvious difficulty breathing in a resting position is an indicator for additional pulmonary function tests. If the forced expiratory volume in the first second of expiration (FEV1) is less than 65% of that predicted, arterial blood gas measurements should be evaluated.

Follow-up

The driver should have follow-up dependent upon the clinical course of the condition and recommendation of the treating healthcare provider.

Pulmonary Hypertension

Pulmonary hypertension can occur with or without cor pulmonale. Significant pulmonary hypertension is pulmonary artery pressure greater than 50% systemic systolic blood pressure from any cause.

An increased risk for incapacitation and sudden death is associated with:

- Primary pulmonary hypertension.
- Secondary pulmonary hypertension (e.g., Eisenmenger's syndrome).

Waiting Period

No recommended time frame

You should not certify the driver until diagnosis is confirmed and/or treatment has been shown to be adequate/effective, safe, and stable.

Decision

Maximum certification — 1 year

Recommend to certify if:

As the medical examiner, you believe that the nature and severity of the medical condition does not endanger the health and safety of the driver and the public.

Recommend not to certify if:

The driver has:

- Dyspnea at rest.
- Dizziness.
- Hypotension.
- Partial pressure of arterial oxygen (PaO_2) less than 65 millimeters of mercury (mm Hg).

Monitoring/Testing

You may on a case-by-case basis obtain additional tests and/or consultation to adequately assess driver medical fitness for duty.

Follow-up

The driver should have follow-up dependent upon the clinical course of the condition and recommendation of the treating healthcare provider.

Neurological (b)(7)(8)(9)

Commercial motor vehicle (CMV) drivers must be able to sustain vigilance and attention for extended periods in all types of traffic, road, and weather conditions. Neurological demands of driving include:

- Cognitive demands:
  - Sustained vigilance and attention.
  - Quick reactions.
  - Communication skills.
  - Appropriate behavior.
- Physical demands:
  - Coordination.

Risk from Headaches

Most individuals have experienced the symptoms of headaches, vertigo, and dizziness. While generally inconsequential, these symptoms may constitute a problem for the driver of a CMV.

Headache and chronic "nagging" pain may be present to such a degree that certification for driving a CMV is inadvisable and the medication used to treat headaches may further interfere with safe driving. Complaints should be thoroughly examined when determining the overall fitness of the driver. Disorders with incapacitating symptoms, even if periodic or in the early stages of disease, warrant the decision to not certify the driver.

Risk from Vertigo and Dizziness

Multiple conditions may affect equilibrium or balance resulting in acute incapacitation or varying degrees of chronic spatial disorientation. Types of vertigo and dizziness with incapacitating symptoms, even if periodic or in the early stages of disease warrant the decision to not certify the driver when symptoms interfere with one or more of the following:

- Cognitive abilities.
- Judgment.

- Attention.
- Concentration.
- Sensory or motor function.

Risk from Seizures and Epilepsy

Safety is the major reason the driver with epilepsy or seizures is restricted from commercial driving. Loss of consciousness endangers the driver and the public.

The physical and mental demands of commercial driving expose seizure prone individuals to conditions that may increase the risk for seizures and may interfere with management of seizures, including:

- Inconsistent access to medical evaluation and care for acute problems.
- Delays in replacement of anticonvulsant medication if lost or forgotten.

The length of time an individual is seizure free and off anticonvulsant medication is considered the best predictor of future risk for seizures. Other considerations include:

- The underlying cause of the seizure.
- The area of the brain affected by disease or injury.

Many driver tasks, from shifting to securing loads, require coordinated voluntary movements. You should consider the following safety implications when evaluating a driver:

- What is the nature and severity of the dysfunction?
- What is the degree of limitation?
- Is the limitation likely to get worse?
- How predictable is the degeneration?
- What is the probability of the dysfunction happening without warning versus progressing over the span of months or years?
- What is the potential for gradual or sudden incapacitation?

Neurological Regulations 4 CFR 391.41(b)(7)(8)(9)

49 CFR 391.41(b)(7)

"A person is physically qualified to drive a commercial motor vehicle if that person —

Has no established medical history or clinical diagnosis of rheumatic, arthritic, orthopedic, muscular, neuromuscular, or vascular disease which interferes with his/her ability to control and operate a commercial motor vehicle safely."

49 CFR 391.41(b)(8)

"Has no established medical history or clinical diagnosis of epilepsy or any other condition which is likely to cause loss of consciousness or any loss of ability to control a commercial motor vehicle."

49 CFR 391.41(b)(9)

"Has no mental, nervous, organic, or functional disease or psychiatric disorder likely to interfere with his/her ability to drive a commercial motor vehicle safely."

Health History and Physical Examination

General Purpose of Health History and Physical Examination

The general purpose of the history and physical examination is to detect the presence of physical, mental, or organic conditions of such character and extent as to affect the ability of the driver to operate a CMV safely. This examination is for public safety determination and is considered by the Federal Motor Carrier Safety Administration (FMCSA) to be a “medical fitness for duty" examination.

As the medical examiner, your fundamental obligation during the neurological assessment is to establish whether a driver has a neurological disease or disorder that increases the risk for sudden death or incapacitation, thus endangering public safety.

The examination is based on information provided by the driver (history), objective data (physical examination), and additional testing requested by the medical examiner. Your assessment should reflect physical, psychological, and environmental factors.

Medical certification depends on a comprehensive medical assessment of overall health and informed medical judgment about the impact of single or multiple conditions on the whole person.

Key Points for Neurological Examination

During the physical examination, you should ask the same questions as you would any individual who is being assessed for neurological concerns. The FMCSA Medical Examination Report form includes health history questions and physical examination checklists. Additional questions about neurological symptoms should be asked and documented to supplement information requested on the form.

Regulations — You must review and discuss with the driver any "yes" answers

Does the driver have:

- Seizures, epilepsy, and/or use anticonvulsant medication?
- History of head/brain injuries, disorders, or illnesses?
- Episodes of loss of or altered consciousness?
- Episodes of fainting or dizziness?
- History of stroke with residual paralysis?
- Spinal injury or disease with residual effects?

Recommendations — Questions that you may ask include

Does the driver:

- Have current limitations resulting from any neuromuscular, nervous, organic, or functional disorder?
- Have symptoms related to or caused by neurological diseases?

- Use medication to treat neurological disorders, including:
    - Anticonvulsants (anticonvulsant therapy recommendations).
    - Anticoagulants (anticoagulant therapy recommendations).
    - Antiplatelet drugs.
    - Central nervous system stimulants and depressants.

Does history of seizures include:

- Childhood febrile seizures?
- Provoked seizures (e.g., induced by anesthesia, hypoglycemia, medications, or fever)?
- Unprovoked seizures:
    - Single episode?
    - Two or more unprovoked seizures (epilepsy)?

Does the driver have signs of undiagnosed neurological disease? Consider:

- Is the information correct and complete?
- Are instructions followed and the responses appropriate and relevant?
- Is the appearance:
    - Reasonable for the situation?
    - Reflective of good personal hygiene?
- Do questions and responses demonstrate alertness, comprehension, appropriateness, and relevance?
- Is behavior appropriate to the neurological functioning required to drive safely?

Regulations — You must evaluate

On examination, does the driver have:

- Compromised equilibrium, coordination, and/or speech pattern?
- Asymmetrical deep tendon reflexes?
- Abnormal patellar and Babinski reflexes?
- Sensory abnormalities?
- Positional abnormalities?
- Ataxia?

Record

Regulations — You must document discussion with the driver about

- Any affirmative history, including if available:
    - Onset date and diagnosis.
    - Medication(s), dose, and frequency.
    - Any current limitation(s).
- Potential negative effects of medication use, including over-the-counter medications, while driving.

- Any abnormal finding(s), noting:
    - Effect on driver ability to operate a CMV safely.
    - Necessary steps to correct the condition as soon as possible, particularly if the untreated condition could result in more serious illness that might affect driving.
- Any additional neurological tests and evaluation.

REMEMBER: *Medical fitness for duty includes the ability to perform strenuous labor. Medical fitness for duty also requires the driver to be free of any neurological residual limitations sufficiently severe to interfere with:*

- Cognitive abilities.
- Judgment.
- Attention.
- Concentration.
- Vision.
- Physical strength.
- Agility.
- Reaction time.

Overall requirements for commercial drivers, as well as the specific requirements in the job description of the driver, should be deciding factors in the certification process.

Advisory Criteria/Guidance

Anticoagulant Therapy

The most current guidelines for the use of warfarin (Coumadin) for cardiovascular diseases are found in the Cardiovascular Advisory Panel Guidelines for the Medical Examination of Commercial Motor Vehicle Drivers.

Anticoagulant therapy may be utilized in the treatment of cardiovascular or neurological conditions. The guidelines emphasize that the certification decision should be based on the underlying medical disease or disorder requiring medication, not the medication itself.

Waiting Period

Minimum — 1 month stabilized

NOTE: *If more than one waiting period applies (because of multiple cardiac conditions or other comorbid diseases), examine the driver for certification after the completion of the longest waiting period.*

Decision

Maximum certification period — 1 year

Recommend to certify if:

The driver:

- Is stabilized on medication for at least 1 month.
- Provides a copy of the international normalized ratio (INR) results at the examination.
- Has at least monthly INR monitoring.

Recommend not to certify if:

- INR is not being monitored.
- INR is not therapeutic.
- Underlying disease is disqualifying.

Monitoring/Testing

The driver should obtain INR monitoring at least monthly.

Follow-up

The driver should bring results of INR monitoring to the examination.

To review the Venous Disease Recommendation Tables, see Appendix D of this handbook.

Waiting Period

Not applicable.

Decision

Recommend to certify if:

Not applicable.

Recommend not to certify if:

The driver has a cerebrovascular disorder.

NOTE: *The rationale for disqualification is the high rate of complications associated with bleeding that can incapacitate the driver while operating a vehicle.*

Monitoring/Testing

Not applicable.

Follow-up

Not applicable.

Anticonvulsant Therapy

Anticonvulsant therapy is used to control or prevent seizures. Even with effective therapy there is still a risk for a seizure should the medication be missed inadvertently.

Anticonvulsants are also prescribed for other conditions that do not cause seizures, including some psychiatric disorders (for antimanic and mood-stabilizing effects) and to lessen chronic pain.

Side effects may include:

- Depressed mood.
- Cognitive deficits.
- Decreased reflex responses.
- Unsteadiness.
- Sedation.

Small doses used for chronic pain are less likely to be associated with side effects that can interfere with safe driving than the doses used to treat other disorders.

Waiting Period

No recommended time frame

You should not certify the driver until the medication has been shown to be adequate/effective, safe, and stable.

Decision

Maximum certification — 2 years

Recommend to certify if:

As the medical examiner, you believe:

- Nature and severity of the underlying condition does not interfere with safe driving.
- Effects of medication used while operating a commercial motor vehicle does not endanger the safety of the driver and the public.

Recommend not to certify if:

The driver uses anticonvulsant medications to control or prevent seizures.

Monitoring/Testing

You may on a case-by-case basis obtain additional tests and/or consultation to adequately assess driver medical fitness for duty.

Follow-up

The driver should have annual medical examinations.

Episodic Neurological Conditions

Episodic neurological conditions guidance can be grouped based on the type of risk associated with the condition.

The first group considers the types of headache, vertigo, and dizziness that can affect cognitive abilities, judgment, attention, and concentration, as well as impact sensory or motor function sufficiently to interfere with the ability to drive a commercial motor vehicle safely.

The second group addresses the conditions that are known to cause or increase the risk for seizures, including epilepsy.

Acute Seizures — Structural Insult to the Brain

Individuals may have a seizure at the time of a brain insult. In many situations, the occurrence of seizures is a reflection of the site of injury but may also be a surrogate for severity. Nonetheless, most neurological conditions in which acme or early seizures may occur are also risk factors for later unprovoked seizures. In fact, the occurrence of early seizures adds a significant increment of risk for later epilepsy to that associated with the primary condition. In general, the risk for subsequent unprovoked seizures is greatest in the first 2 years following the acute insult.

Approximately 12% of individuals suffering an occlusive cerebrovascular insult resulting in a fixed neurological deficit will experience a seizure at the time of the insult. Unprovoked seizures will occur within the next 5 years in 16% of all individuals with an occlusive vascular insult. This rate seems not to be modified significantly by the occurrence of early seizures. The risk is increased primarily in individuals with lesions associated with cerebral cortical or subcortical deficits. The same risk of seizure and recommendations are applicable for intracerebral or subarachnoid hemorrhage.

The length of time an individual is seizure free and off anticonvulsant medication is considered the best predictor of future risk for seizures. Therefore, according to medical guidelines, for the entire waiting period before being considered for certification, the driver should be both:

- Seizure free.
- Off anticonvulsant medication prescribed for control of seizures.

For those individuals who survive severe head injury, the risk for developing unprovoked seizures does not decrease significantly over time. Based upon the risk for unprovoked seizures alone, the driver should not be considered for certification.

NOTE: *Surgical procedures involving dural penetration have a risk for subsequent epilepsy similar to that of severe head trauma. Individuals who have undergone such procedures, including those who have had surgery for epilepsy, should not be considered eligible for certification.*

Waiting Period

Minimum — 1 year seizure free and off anticonvulsant medication following:

- Mild insult without early seizures.
- Stroke without risk for seizures.
- Intracerebral or subarachnoid hemorrhage without risk for seizures.

Minimum — 2 years seizure free and off anticonvulsant medication following:

- Moderate insult without early seizures.
- Mild insult with early seizures.

Minimum — 5 years seizure free and off anticonvulsant medication following:

- Moderate insult with early seizures.
- Stroke with risk for seizures.
- Intracerebral or subarachnoid hemorrhage with risk for seizures.

NOTE: *If more than one waiting period applies (because of multiple conditions or other comorbid diseases), examine the driver for certification after the completion of the longest waiting period.*

Decision

Maximum certification — 1 year

Recommend to certify if:

The driver with a history of mild or moderate insult has:

- Completed the minimum waiting period seizure free and off anticonvulsant medication.
- Normal physical examination, neurological examination including neuro-ophthalmological evaluation, and neuropsychological test.
- Clearance from a neurologist who understands the functions and demands of commercial driving.

Recommend not to certify if:

The driver has a history of a severe brain insult with or without early seizures.

The driver with a mild or moderate insult:

- Has not completed the minimum waiting period seizure free and off anticonvulsant medication.
- Does not have a normal physical examination, neurological examination including neuro-ophthalmological evaluation, or neuropsychological test.
- Does not have clearance from a neurologist who understands the functions and demands of commercial driving.

Monitoring/Testing

You may on a case-by-case basis obtain additional tests and/or consultation to adequately assess driver medical fitness for duty.

Follow-up

The driver should have an annual medical examination.

Acute Seizures — Systemic Metabolic Illness

Seizures are the normal reaction of a properly functioning nervous system to adverse events. In the presence of systemic metabolic illness, seizures are generally related to the consequences of a general systemic alteration of biochemical homeostasis and are not known to be associated with any inherent tendency to have further seizures. The risk for recurrence of seizures is related to the likelihood of recurrence of the inciting condition.

Waiting Period

No recommended time frame

You should not certify the driver until etiology is confirmed and treatment has been shown to be adequate/effective, safe, and stable.

Decision

Maximum certification — 2 years

Recommend to certify if:

- The underlying systemic metabolic dysfunction has been corrected.
- The driver has no disqualifying risk of recurrence of the primary condition.

Recommend not to certify if:

As the medical examiner, you believe that the nature and severity of the medical condition of the driver endangers the health and safety of the driver and the public.

Monitoring/Testing

You may on a case-by-case basis obtain additional tests and/or consultation to adequately assess driver medical fitness for duty.

Follow-up

The driver should have at least biennial medical examinations.

Childhood Febrile Seizures

Febrile seizures occur in from 2% to 5% of the children in the United States before 5 years of age and seldom occur after 5 years of age. From a practical standpoint, most individuals who have experienced a febrile seizure in infancy are unaware of the event and the condition would not be readily identified through routine screening. Most of the increased risk for unprovoked seizure is appreciated in the first 10 years of life.

Waiting Period

No recommended time frame

You should not certify the driver until etiology is confirmed and treatment has been shown to be adequate/effective, safe, and stable.

Decision

Maximum certification — 2 years

Recommend to certify if:

The history of seizures is limited to childhood febrile seizures.

Recommend not to certify if:

As the medical examiner, you believe that the nature and severity of the medical condition of the driver endangers the health and safety of the driver and the public.

Monitoring/Testing

You may on a case-by-case basis obtain additional tests and/or consultation to adequately assess driver medical fitness for duty.

Follow-up

The driver should have at least biennial medical examinations.

Epilepsy

The advisory criteria for 49 CFR 391.41(b)(8) says, "Epilepsy is a chronic functional disease characterized by seizures or episodes that occur without warning, resulting in loss of voluntary control which may lead to loss of consciousness and/or seizures. Therefore, the following drivers cannot be qualified: (1) a driver who has a medical history of epilepsy; (2) a driver who has a current clinical diagnosis of epilepsy; or (3) a driver who is taking antiseizure medication."

Following an initial unprovoked seizure, the commercial motor vehicle (CMV) driver should be seizure free and off anticonvulsant medication for at least 5 years to distinguish between a medical history of a single instance of seizure and epilepsy. A second unprovoked seizure, regardless of the elapsed time between seizures, would constitute a medical history of epilepsy and the driver would no longer meet the physical requirements for 49 CFR 391.41(b)(8).

NOTE: *Epilepsy medical guidelines are currently under review by the Federal Motor Carrier Safety Administration. While there have been no changes through the rulemaking process to the wording of 49 CFR 391.41(b)(8), current advisory criteria allow that some "drivers with a history of epilepsy/seizures off antiseizure medication and seizure-free for 10 years may be qualified to drive a CMV in interstate commerce."*

Waiting Period

Minimum —10 years off anticonvulsant medication and seizure free

Decision

Recommend to certify if:

The driver has completed a waiting period of 10 years off anticonvulsant medication and seizure free and you, as the medical examiner, believe that the nature and severity of the medical condition of the driver does not endanger the health and safety of the driver and the public.

According to regulation, you must not certify if:

The driver has:

- An established medical history of epilepsy.
- A clinical diagnosis of epilepsy.
- Any other condition likely to cause loss of consciousness or any loss of ability to control a CMV.

NOTE: *If you choose to certify a driver with an established medical history of epilepsy, be sure to include in your documentation reference to the advisory criteria and all medical evaluation supporting your decision.*

Recommend not to certify if:

The driver is taking anticonvulsant medication because of a medical history of one or more seizures or is at risk for seizures.

Monitoring/Testing

You may on a case-by-case basis obtain additional tests and/or consultation to adequately assess driver medical fitness for duty. Clearance from a specialist in neurological diseases who understands the

functions and demands of commercial driving is a prudent course of action if choosing to certify the driver with an established history of epilepsy.

Follow-up

The driver should have an annual medical examination.

Headaches

Chronic or chronic-recurring headache syndromes can potentially interact with other neurological diagnostic categories in two ways:

- Through complications (e.g., stroke in relation to migraine).
- As a result of associated features of a particular syndrome (e.g., the visual distortion or disequilibrium associated with a migraine attack).

The following types of headaches may interfere with the ability to drive a commercial motor vehicle safely:

- Migraines.
- Tension-type headaches.
- Cluster headaches.
- Post-traumatic head injury syndrome.
- Headaches associated with substances or withdrawal.
- Cranial neuralgias.
- Atypical facial pain.

Consider headache frequency and severity when evaluating a driver whose history includes headaches. In addition to pain, inquire about other symptoms caused by headaches, such as visual disturbances, that may interfere with safe driving.

Consider the treatment used to relieve headaches. Do the effects or side effects of treatment interfere with safe driving?

Waiting Period

No recommended time frame

You should not certify the driver until etiology is confirmed and treatment has been shown to be adequate/effective, safe, and stable.

Decision

Maximum certification — 2 years

Recommend to certify if:

As the medical examiner, you believe that the nature and severity of the medical condition of the driver does not endanger the health and safety of the driver and the public.

Recommend not to certify if:

As the medical examiner, you believe that the nature and severity of the medical condition of the driver endangers the health and safety of the driver and the public.

Monitoring/Testing

You may on a case-by-case basis obtain additional tests and/or consultation to adequately assess driver medical fitness for duty.

Follow-up

The driver should have at least biennial medical examinations.

Single Unprovoked Seizure

An unprovoked seizure occurs in the absence of an identifiable acute alteration of systemic metabolic function or acute insult to the structural integrity of the brain. There may be a known or distant cause of the seizure.

While individuals who experience a single unprovoked seizure do not have a diagnosis of epilepsy, they are clearly at a higher risk for having further seizures. The overall rate occurrence is estimated to be 36% within the first 5 years following the seizure. After 5 years, the risk for recurrence is down to 2% to 3% per year for the total group.

Following an initial unprovoked seizure, the driver should be seizure free and off anticonvulsant medication for at least 5 years to distinguish between a medical history of a single unprovoked seizure and epilepsy (two or more unprovoked seizures). A second unprovoked seizure, regardless of the elapsed time between seizures, would constitute a medical history of epilepsy, and the driver would no longer meet the physical requirements for 49 CFR 391.41(b)(8).

The length of time an individual is seizure free and off anticonvulsant medication is considered the best predictor of future risk for seizures. Therefore, for the entire waiting period before being considered for certification, the driver should be both:

- Seizure free.
- Off anticonvulsant medication prescribed for control of seizures.

Waiting Period

Minimum — 5 years seizure free and off anticonvulsant medication

NOTE: *If more than one waiting period applies (because of multiple conditions or other comorbid diseases), examine the driver for certification after the completion of the longest waiting period.*

Decision

Maximum certification — 1 year

Recommend to certify if:

The driver has:

- Completed the minimum waiting period seizure free and off anticonvulsant medication.
- Clearance from a neurologist who specializes in epilepsy and understands the functions and demands of commercial driving.

Recommend not to certify if:

The driver:

- Has not completed the minimum waiting period seizure free and off anticonvulsant medication.
- Does not have clearance from a neurologist who specializes in epilepsy and understands the functions and demands of commercial driving.

Monitoring/Testing

You may on a case-by-case basis obtain additional tests and/or consultation to adequately assess driver medical fitness for duty.

Follow-up

The driver should have at least biennial medical examinations.

Vertigo and Dizziness

The normal ability to maintain balance and orientation while operating a commercial motor vehicle (CMV) depends upon peripheral nervous system (PNS) sensory input from three major systems and the appropriate motor integration in the central nervous system (CNS). The three PNS sensory systems are vestibular, visual, and proprioception. Inappropriate interactions of these systems or interactions within the CNS may produce an unsafe degree of vertigo or dizziness that endangers the health and safety of the driver and the public.

The most common medications used to treat vertigo are antihistamines, benzodiazepines, and phenothiazines. Use of either benzodiazepines or phenothiazines for the treatment of vertigo would render the driver medically unqualified. Special consideration should be given to the possible sedative side effects of antihistamines. The medical examiner should determine if these drugs produce sedation in the individual driver.

Waiting Period

Minimum — 2 months asymptomatic with diagnosis of:

- Benign positional vertigo.
- Acute and chronic peripheral vestibulopathy.

NOTE: *If more than one waiting period applies (because of multiple conditions or other comorbid diseases), examine the driver for certification after the completion of the longest waiting period.*

Decision

Maximum certification — 2 years

NOTE: *Any driver with a deficit that requires special evaluation and screening should be recertified annually.*

Recommend to certify if:

The driver has a diagnosis of:

- Benign positional vertigo and has completed the appropriate symptom-free waiting period.

- Acute and chronic peripheral vestibulopathy and has completed the appropriate symptom-free waiting period.
- A medical condition of a nature and severity that does not endanger the health and safety of the driver and the public.

Recommend not to certify if:

The driver has a diagnosis of:

- Benign positional vertigo and has been symptomatic within the past 2 months.
- Acute and chronic peripheral vestibulopathy and has been symptomatic within the past 2 months.
- Meniere's disease.
- Labyrinthine fistula.
- Nonfunctioning labyrinths.

Monitoring/Testing

You may on a case-by-case basis obtain additional tests and/or consultation to adequately assess driver medical fitness for duty.

Follow-up

The driver should have at least biennial medical examinations.

Infections of the Central Nervous System

The guidelines for central nervous system (CNS) infection consider diagnosis and whether or not the driver has a history of early seizures with the condition. Aseptic meningitis is not associated with any increase in risk for subsequent unprovoked seizures; therefore, no restrictions should be considered for such individuals, and they should be considered qualified to obtain a license to operate a commercial vehicle.

A driver with a current clinical CNS diagnosis or signs and symptoms of a CNS infection should not be considered for certification until the etiology is confirmed and treatment has been shown to be adequate/effective, safe, and stable.

Waiting Period

Minimum — 1 year seizure free and off anticonvulsant medication following:

- Bacterial meningitis without early seizures.
- Viral encephalitis without early seizures.

Minimum — 5 years seizure free and off anticonvulsant medication following:

- Bacterial meningitis with early seizures.

Minimum — 10 years seizure free and off anticonvulsant medication following:

- Viral encephalitis with early seizures.

Decision

Maximum certification — 2 years

Recommend to certify if:

The driver has a history of:

- Aseptic meningitis.
- Bacterial meningitis and has completed the appropriate recommended waiting period.
- Viral encephalitis and has completed the appropriate recommended waiting period.

Recommend not to certify if:

The driver has a current CNS infection.

Monitoring/Testing

You may on a case-by-case basis obtain additional tests and/or consultation to adequately assess driver medical fitness for duty.

Follow-up

You may on a case-by-case basis determine that annual medical examination is appropriate.

Neuromuscular Diseases

As a group, neuromuscular diseases are usually insidious in onset and slowly progressive. The rate of progression will vary and is generally measured in months to years. Rare neuromuscular diseases may be episodic producing weakness over minutes to hours.

You must consider the effects of neuromuscular conditions on the physical abilities of the driver to initiate and maintain safe driving including steering, braking, clutching, getting in and out of vehicles, and reaction time.

Examination by a neurologist or physiatrist who understands the functions and demands of commercial driving may be required to assess the status of the disease. As the medical examiner, you determine certification status.

Autonomic Neuropathy

Autonomic neuropathy affects the nerves that regulate vital functions, including the heart muscle and smooth muscles.

Waiting Period

No recommended time frame

You should not certify the driver until etiology is confirmed and treatment has been shown to be adequate/effective, safe, and stable.

Decision

Maximum certification — 2 years

Recommend to certify if:

As a medical examiner, you believe that the nature and severity of the medical condition of the driver does not endanger the health and safety of the driver and the public.

Recommend not to certify if:

The driver has:

- Cardiovascular autonomic neuropathy that causes:
    - Resting tachycardia.
    - Orthostatic blood pressure.
- Other organ autonomic neuropathy that interferes with driving ability.

Monitoring/Testing

You may on a case-by-case basis obtain additional tests and/or consultation to adequately assess driver medical fitness for duty.

Follow-up

The driver should have a biennial physical examination or more frequently if needed to adequately monitor medical fitness for duty.

Conditions Associated with Abnormal Muscle Activity

This group of disorders is characterized by abnormal muscle excitability caused by abnormalities either in the nerve or in the muscle membrane.

Waiting Period

No recommended time frame

You should not certify the driver until etiology is confirmed and treatment has been shown to be adequate/effective, safe, and stable.

Decision

Maximum certification — 2 years

Recommend to certify if:

As a medical examiner, you believe that the nature and severity of the medical condition of the driver does not endanger the health and safety of the driver and the public.

Recommend not to certify if:

The driver has a diagnosis of:

- Myotonia.
- Isaac's syndrome.
- Stiff-man syndrome.

Monitoring/Testing

You may on a case-by-case basis obtain additional tests and/or consultation to adequately assess driver medical fitness for duty.

Follow-up

The driver should have a biennial physical examination or more frequently if needed to adequately monitor medical fitness for duty.

Congenital Myopathies

Congenital myopathies are a group of disorders that may be distinguished from others because of specific, well-defined structural alterations of the muscle fiber and may be progressive or nonprogressive. These disorders include:

- Central core disease.
- Centronuclear myopathy.
- Congenital muscular dystrophy.
- Rod (nemaline) myopathy.

Inflammatory myopathies are acquired muscle diseases that may be treated. These disorders include:

- Dermatomyositis.
- Inclusion body myositis.
- Polymyositis.

Waiting Period

Not applicable.

Decision

Recommend to certify if:

Not applicable.

Recommend not to certify if:

The driver has a diagnosis of a congenital myopathy disorder.

NOTE: *Neuromuscular disorders represent a complex group of conditions. The severity can vary with the individual and in certain instances may be treatable or nonprogressive. Guidelines for reconsideration of the decision not to certify include:*

- Evaluation by a neurologist or physiatrist who understands the functions and demands of commercial driving. Specialist may recommend a simulated driving skills test or equivalent functional test.
- Annual recertification that repeats specialist evaluation and driving test when indicated.

Monitoring/Testing

Not applicable.

Follow-up

Not applicable.

Metabolic Muscle Diseases

Metabolic muscle diseases are a group of disorders comprised of conditions affecting the energy metabolism of muscle or an imbalance in the chemical composition either within or surrounding the muscle. Conditions may affect glycogen and glycolytic metabolism, lipid metabolism, mitochondrial metabolism, or potassium balance of the muscle. Unlike most other neuromuscular disorders, these conditions may either be insidiously progressive or episodic.

Waiting Period

Not applicable.

Decision

Recommend to certify if:

Not applicable.

Recommend not to certify if:

The driver has a diagnosis of a metabolic muscle disease.

NOTE: *Neuromuscular disorders represent a complex group of conditions. The severity can vary with the individual and in certain instances may be treatable or nonprogressive. Guidelines for reconsideration of the decision not to certify include:*

- Evaluation by a neurologist or physiatrist who understands the functions and demands of commercial driving. Specialist may recommend a simulated driving skills test or equivalent functional test.
- Annual recertification that repeats specialist evaluation and driving test when indicated.

Monitoring/Testing

Not applicable.

Follow-up

Not applicable.

Motor Neuron Diseases

This group of disorders includes:

- Hereditary spinal muscular atrophy in both juvenile and adult forms.
- Acquired amyotrophic lateral sclerosis conditions producing degeneration of the motor nerve cells in the spinal cord.

As a group these are debilitating, insidiously progressive conditions that interfere with the ability to drive commercial vehicles.

Waiting Period

Not applicable.

Decision

Recommend to certify if:

Not applicable.

Recommend not to certify if:

The driver has a diagnosis of a motor neuron disease.

Monitoring/Testing

Not applicable.

Follow-up

Not applicable.

Muscular Dystrophies

Muscular dystrophies are hereditary, progressive, degenerative diseases of the muscle that interfere with safe driving.

Waiting Period

Not applicable.

Decision

Recommend to certify if:

Not applicable.

Recommend not to certify if:

The driver has a diagnosis of a muscular dystrophy disease.

NOTE: *Neuromuscular disorders represent a complex group of conditions. The severity can vary with the individual and in certain instances may be treatable or nonprogressive. Guidelines for reconsideration of the decision not to certify include:*

- *Evaluation by a neurologist or physiatrist who understands the functions and demands of commercial driving. Specialist may recommend a simulated driving skills test or equivalent functional test.*
- *Annual recertification that repeats specialist evaluation and driving test when indicated.*

Monitoring/Testing

Not applicable.

Follow-up

Not applicable.

Neuromuscular Junction Disorders

This group of disorders includes:

- Myasthenia gravis.
- Myasthenic syndrome.

In addition to limb muscle weakness, vision is often affected and easy fatigability is a common manifestation.

Waiting Period

Not applicable.

Decision

Recommend to certify if:

Not applicable.

Recommend not to certify if:

The driver has a diagnosis of a neuromuscular junction disorder.

NOTE: *Neuromuscular disorders represent a complex group of conditions. The severity can vary with the individual and in certain instances may be treatable or nonprogressive. Guidelines for reconsideration of the decision not to certify include:*

- *Evaluation by a neurologist or physiatrist who understands the functions and demands of commercial driving. Specialist may recommend a simulated driving skills test or equivalent functional test.*
- *Annual recertification that repeats specialist evaluation and driving test when indicated.*

Monitoring/Testing

Not applicable.

Follow-up

Not applicable.

Peripheral Neuropathies

This group of disorders consists of hereditary and acquired conditions where the nerves, including the axon and myelin or the myelin selectively outside the spinal cord, are affected. These conditions may affect the sensory or motor nerves individually, or both may be affected.

Peripheral neuropathy may be a complication of diabetes mellitus. You should evaluate the sensory modalities of pain, light touch, position, and vibratory sensation in the toes, feet, fingers, and hands for signs of peripheral neuropathy.

Waiting Period

Not applicable.

Decision

Recommend to certify if:

Not applicable.

Recommend not to certify if:

The driver has a diagnosis of a peripheral neuropathy.

NOTE: *Neuromuscular disorders represent a complex group of conditions. The severity can vary with the individual and in certain instances may be treatable or nonprogressive. Guidelines for reconsideration of the decision not to certify include:*

- *Evaluation by a neurologist or physiatrist who understands the functions and demands of commercial driving. Specialist may recommend a simulated driving skills test or equivalent functional test.*
- *Annual recertification that repeats specialist evaluation and driving test when indicated.*

Monitoring/Testing

Not applicable.

Follow-up

Not applicable.

Progressive Neurological Conditions

Guidelines recommend that any driver having neurological signs or symptoms be referred to a neurologist for more detailed and qualified evaluation of neurological status in relation to certification for driving a commercial motor vehicle.

When requesting additional evaluation from a specialist, the specialist must understand the role and function of a driver; therefore, it is helpful if you include a copy of the Medical Examination Report form description of the driver role and a copy of the applicable medical standards (page 4) and guidelines with the request.

Central Nervous System Tumors

The central nervous system (CNS) is the seat of our intelligence and emotions, and an affliction of the CNS impacts everyday functioning in a direct and visible manner. Brain tumors may alter cognitive abilities and judgment, and these symptoms may occur early in the course of the condition. Sensory and

motor abnormalities may be produced both by brain tumors and by spinal cord tumors, depending on the location. For some benign tumors, certification may be possible after successful surgical treatment.

The length of time an individual is seizure free and off of anticonvulsant medication is considered the best predictor of future risk for seizures. Therefore, for the entire waiting period before being considered for certification, the driver must be both:

- Seizure free.
- Off anticonvulsant medication prescribed for control of seizures.

Waiting Period

Minimum — 1 year post-surgical removal of:

- Infratentorial meningiomas.
- Acoustic neuromas.
- Pituitary adenomas.
- Spinal benign tumors.
- Benign extra-axial tumors.

Minimum — 2 years post-surgical removal of:

- Benign supratentorial tumors.
- Spinal tumors.

NOTE: *If more than one waiting period applies (because of multiple conditions or other comorbid diseases), examine the driver for certification after the completion of the longest waiting period.*

Decision

Maximum certification — 1 year

Recommend to certify if:

The driver has:

- Completed the appropriate minimum waiting period.
- Stable nonprogressive deficit or no neurological deficit.
- Imaging that shows no tumors.

NOTE: *If the driver has a history of seizures, use the appropriate seizure guidelines.*

Recommend not to certify if:

The driver has:

- Not completed appropriate waiting period.
- Primary or metastatic malignant tumors of the nervous system.
- Benign nervous system tumors.

Monitoring/Testing

Since meningiomas may be multiple, residual examinations must show no evidence of recurrent or new tumors. Evaluation should be performed by a neurologist or physiatrist who understands the functions and demands of commercial driving.

Follow-up

The driver should have an annual medical examination.

Dementia

Dementia is a progressive decline in mental functioning that can interfere with memory, language, spatial functions, higher order perceptual functions, problem solving, judgment, behavior, and emotional functions. Alzheimer's and Pick's diseases both cause dementia and have symptoms that are incompatible with the safe driving. Neither disease has a specific diagnostic test, with mild symptoms typically present for years before the diagnosis is made. Alzheimer's is the most common degenerative disease.

The rationale for making a decision not to certify when a diagnosis of dementia is present includes:

- There are no current data providing evidence that a driver with diagnosed dementia can drive a commercial motor vehicle safely.
- The disease rate of progression is variable.

Waiting Period

Not applicable.

Decision

Recommend to certify if:

Not applicable.

Recommend not to certify if:

The driver has a diagnosis of dementia.

Monitoring/Testing

Not applicable.

Follow-up

Not applicable.

Static Neurological Conditions

Static neurological conditions include common cerebrovascular disease, as well as head and spinal cord injuries.

Cerebrovascular events may cause cognitive, judgment, attention, concentration, and/or motor and sensory impairments that can interfere with normal operation of a commercial motor vehicle (CMV). Drivers with several types of cerebrovascular disease are also at risk for recurring events that can happen without warning. Drivers with ischemic cerebrovascular disease are also at high risk for acute cardiac events, including myocardial infarction or sudden cardiac death. Recurrent cerebrovascular symptoms or cardiac events can occur with sufficient frequency to cause concern about the safe operation of a CMV.

The common types of cerebrovascular disease are:

- Transient ischemic attack/minor stroke with minimal or no residual impairment.
- Embolic or thrombotic cerebral infarction with moderate to major residual impairment.
- Intracerebral or subarachnoid hemorrhage.

Head injury recommendations include complete physical examination, neurological examination, and neuropsychological testing with normal results and the use of the seizure guidelines to determine certification status. Spinal cord injury resulting in paraplegia is disqualifying. Any weakness should be evaluated to determine whether the deficit interferes with the job requirements of a commercial driver.

Any driver with a neurological deficit that requires special evaluation and screening should have annual medical examinations.

Embolic and Thrombotic Strokes

More than 3 million individuals have survived a stroke, and it is a major cause of long-term disability. Embolic and thrombotic cerebral infarctions are the most common forms of cardiovascular disease. Risk for complicating seizures is associated with the location of the lesions.

- Cerebellum and brainstem vascular lesions are not associated with an increased risk for seizures.
- Cortical and subcortical deficits are associated with an increased risk for seizures.
- Evaluation by a neurologist is necessary to confirm the area of involvement.

Drivers with embolic or thrombotic cerebral infarctions will have residual intellectual or physical impairments. Fatigue, prolonged work, and stress may exaggerate the neurological residuals from a stroke. Most recovery from a stroke will occur within 1 year of the event.

The neurological examination should include assessment of:

- Cognitive abilities.
- Judgment.
- Attention.
- Concentration.
- Vision.
- Physical strength and agility.
- Reaction time.

Waiting Period

Minimum — 1 year if not at risk for seizures (cerebellum or brainstem vascular lesions)

Minimum — 5 years if at risk for seizures (cortical or subcortical deficits)

NOTE: *If more than one waiting period applies (because of multiple conditions or other comorbid diseases), examine the driver for certification after the completion of the longest waiting period.*

Decision

Maximum certification — 1 year

Recommend to certify if:

The driver with a history of stroke has:

- Completed the appropriate waiting period.
- Normal physical examination, neurological examination including neuro-ophthalmological evaluation, and neuropsychological testing.
- No neurological residuals or, if present, residuals of a severity that does not interfere with ability to operate a commercial motor vehicle.
- Clearance from a neurologist who understands the functions and demands of commercial driving.

Recommend not to certify if:

The driver:

- Has not completed the appropriate waiting period.
- Uses oral anticoagulant therapy because of the risks associated with excessive bleeding.
- Uses any other drug or combination of drugs that have potentially high rates of complications (e.g., depressing effects on the nervous system).
- Has residual intellectual or physical impairments that interfere with commercial driving.
- Does not have clearance from a neurologist who understands the functions and demands of commercial driving.

Monitoring/Testing

You may on a case-by-case basis obtain additional tests and/or consultation to adequately assess driver medical fitness for duty.

Follow-up

The driver should have an annual medical examination.

Intracerebral and Subarachnoid Hemorrhages

Intracerebral hemorrhage results from bleeding into the substance of the brain and subarachnoid hemorrhage reflects bleeding primarily into the spaces around the brain. Bleeding occurs as a result of a number of conditions including hypertension, hemorrhagic disorders, trauma, cerebral aneurysms, neoplasms, arteriovenous malformations, and degenerative or inflammatory vasculopathies.

Subarachnoid and intracerebral hemorrhages can cause serious residual neurological deficits in:

- Cognitive abilities.
- Judgment.
- Attention.
- Physical skills.

The risk for seizures following intracerebral and subarachnoid hemorrhages is associated with the location of the hemorrhage:

- Cerebellum and brainstem vascular hemorrhages are not associated with an increased risk for seizures.

- Cortical and subcortical hemorrhages are associated with an increased risk for seizures.
- Appropriate evaluation by a neurologist is required to confirm the area of involvement.

The recommendations for intracranial and subarachnoid hemorrhages parallel recommendations for strokes.

Waiting Period

Minimum — 1 year if not at risk for seizures (cerebellum or brainstem vascular lesions)

Minimum — 5 years if at risk for seizures (cortical or subcortical deficits)

NOTE: *If more than one waiting period applies (because of multiple conditions or other comorbid diseases), examine the driver for certification after the completion of the longest waiting period.*

Decision

Maximum certification — 1 year

Recommend to certify if:

The driver with a history of intracranial or subarachnoid hemorrhage has:

- Completed the appropriate waiting period.
- Normal physical examination, neurological examination including neuro-ophthalmological evaluation, and neuropsychological testing.
- No neurological residuals or, if present, residuals of a severity that do not interfere with the ability to operate a commercial motor vehicle.
- Clearance from a neurologist who understands the functions and demands of commercial driving.

Recommend not to certify if:

The driver:

- Has not completed the appropriate waiting period
- Uses oral anticoagulant therapy because of the risks associated with excessive bleeding.
- Uses any other drug or drug combination with a potentially high rate of complications (e.g., depressing effects on the nervous system).
- Has residual intellectual or physical impairments that interfere with commercial driving.
- Does not have clearance from a neurologist who understands the functions and demands of commercial driving.

Monitoring/Testing

You may on a case-by-case basis obtain additional tests and/or consultation to adequately assess driver medical fitness for duty.

Follow-up

The driver should have an annual medical examination.

Transient Ischemic Attack

Intracerebral hemorrhage results from bleeding into the substance of the brain and subarachnoid hemorrhage reflects bleeding primarily into the spaces around the brain. Bleeding occurs as a result of a number of conditions including hypertension, hemorrhagic disorders, trauma, cerebral aneurysms, neoplasms, arteriovenous malformations, and degenerative or inflammatory vasculopathies.

Subarachnoid and intracerebral hemorrhages can cause serious residual neurological deficits in:

- Cognitive abilities.
- Judgment.
- Attention.
- Physical skills.

The risk for seizures following intracerebral and subarachnoid hemorrhages is associated with the location of the hemorrhage:

- Cerebellum and brainstem vascular hemorrhages are not associated with an increased risk for seizures.
- Cortical and subcortical hemorrhages are associated with an increased risk for seizures.
- Appropriate evaluation by a neurologist is required to confirm the area of involvement.

The recommendations for intracranial and subarachnoid hemorrhages parallel recommendations for strokes.

Waiting Period

Minimum — 1 year if not at risk for seizures (cerebellum or brainstem vascular lesions)

Minimum — 5 years if at risk for seizures (cortical or subcortical deficits)

NOTE: *If more than one waiting period applies (because of multiple conditions or other comorbid diseases), examine the driver for certification after the completion of the longest waiting period.*

Decision

Maximum certification — 1 year

Recommend to certify if:

The driver with a history of intracranial or subarachnoid hemorrhage has:

- Completed the appropriate waiting period.
- Normal physical examination, neurological examination including neuro-ophthalmological evaluation, and neuropsychological testing.
- No neurological residuals or, if present, residuals of a severity that do not interfere with the ability to operate a commercial motor vehicle.
- Clearance from a neurologist who understands the functions and demands of commercial driving.

Recommend not to certify if:

The driver:

- Has not completed the appropriate waiting period
- Uses oral anticoagulant therapy because of the risks associated with excessive bleeding.
- Uses any other drug or drug combination with a potentially high rate of complications (e.g., depressing effects on the nervous system).
- Has residual intellectual or physical impairments that interfere with commercial driving.
- Does not have clearance from a neurologist who understands the functions and demands of commercial driving.

Monitoring/Testing

You may on a case-by-case basis obtain additional tests and/or consultation to adequately assess driver medical fitness for duty.

Follow-up

The driver should have an annual medical examination.

Traumatic Brain Injury

Traumatic brain injury (TBI) is an insult to the brain caused by an external physical force, which may produce a diminished or altered state of consciousness, including coma, resulting in long-term impairment of cognitive or physical function.

Disturbances of behavioral or emotional functioning may result in total or partial disability and/or psychological maladjustment. Many people with TBI suffer loss of memory and reasoning ability, experience speech and/or language problems, and exhibit emotional and behavioral changes that are medically disqualifying for commercial driving.

TBI is classified by depth of dural penetration and duration of loss of consciousness. The three classes are:

- Severe head injury penetrates the dura and causes a loss of consciousness lasting longer than 24 hours. There is a high risk for unprovoked seizures, and the risk does not diminish over time.
- Moderate head injury does not penetrate the dura but causes a loss of consciousness lasting longer than 30 minutes, but less than 24 hours.
- Mild head injury has no dural penetration or loss of consciousness and lasts for fewer than 30 minutes. Be sure to distinguish between mild TBI with or without early seizures.

The length of time an individual is seizure free and off anticonvulsant medication is considered the best predictor of future risk for seizures. Therefore, for the entire waiting period before being considered for certification, the driver must be both:

- Seizure free.
- Off anticonvulsant medication prescribed for control of seizure.

NOTE: *Surgical procedures involving dural penetration have a risk for subsequent epilepsy similar to that of severe head trauma. Individuals who have undergone such procedures, including those who have had surgery for epilepsy, should not be considered eligible for certification.*

Waiting Period

Minimum — 2 years seizure free and off anticonvulsant medication following:

- Moderate TBI without early seizures.
- Mild TBI with early seizures.

Minimum — 5 years seizure free and off anticonvulsant medication following:

- Moderate TBI with early seizures.

NOTE: *If more than one waiting period applies (because of multiple conditions or other comorbid diseases), examine the driver for certification after the completion of the longest waiting period.*

Decision

Maximum certification — 1 year

Maximum certification — 2 years for mild TBI without early seizures

Recommend to certify if:

The driver with a mild or moderate TBI who has:

- Completed the minimum waiting period seizure free and off anticonvulsant medication.
- Normal physical examination, neurological examination including neuro-ophthalmological evaluation, and neuropsychological test.
- Clearance from a neurologist who understands the functions and demands of commercial driving.

Recommend not to certify if:

The driver has sustained a severe TBI with or without early seizures.

The driver with a mild or moderate TBI:

- Has not completed the minimum waiting period seizure free and off anticonvulsant medication.
- Does not have a normal physical examination, neurological examination including neuro-ophthalmological evaluation, or neuropsychological test.
- Does not have clearance from a neurologist who understands the functions and demands of commercial driving.

Monitoring/Testing

You may on a case-by-case basis obtain additional tests and/or consultation to adequately assess driver medical fitness for duty.

Follow-up

The driver should have an annual medical examination.

Summary of Neurological Waiting Periods

Seizure Waiting Periods

The driver must complete the minimum waiting period seizure free and off anticonvulsant medication.

Waiting Period	Diagnosis
10 years	**History of epilepsy.** **Viral encephalitis with early seizures.**
5 years	**Single unprovoked seizure, no identified acute change, may be distant cause (possible earlier return to driving if normal neurological examination by a specialist in epilepsy who understands the functions and demands of commercial driving, and the driver has a normal electroencephalogram).** **Bacterial meningitis and early seizures.**
2 years	**Acute seizure with acute structural central nervous system insult.**
Based on risk of recurrence of primary condition.	**Acute seizure with acute systemic/metabolic illness.**

Table 5 - Seizure Waiting Periods

Other Neurological Event Waiting Periods

The driver must complete the minimum waiting period seizure free and off anticonvulsant medication.

Waiting Period	Diagnosis
5 years	**Moderate traumatic brain injury (TBI) with early seizures.** **Stroke with risk for seizures.** **Intracerebral or subarachnoid hemorrhage with risk for seizures.**
2 years	**Moderate TBI without early seizures.** **Surgically removed supratentorial or spinal tumors.**
1 year	**Transient ischemic attack, stroke, or intracerebral or subarachnoid hemorrhages with no risk for seizures.** **Surgically-repaired arteriovenous malformations/aneurysm with no risk for seizures.**

	Surgically removed infratentorial meningiomas, acoustic neuromas, pituitary adenomas, and benign spinal tumors or other benign extraaxial tumors with no risk for seizures. **Infections of the central nervous system (e.g., bacterial meningitis, viral encephalitis without early seizures).**

Table 6 - Other Neurological Event Waiting Periods

Musculoskeletal (b)(1)(2)(7)

Disorders of the musculoskeletal system affect driving ability and functionality necessary to perform heavy labor tasks associated with the job of commercial driving. Medical certification means the driver is physically able to safely drive and perform nondriving tasks as described in the driver role section of the Federal Motor Carrier Safety Administration (FMCSA) Medical Examination Report form.

Drivers have a multitude of job demands. The least physically demanding part may be the actual driving. For example, the duties of a commercial driver may include loading and unloading, making multiple stops, driving cross-country and in heavy city traffic, working with load securement devices, and changing tires.

Other common driving tasks include:

- Manipulating the wheel.
- Shifting gears.
- Maintaining pressure on the pedals.
- Braking.
- Monitoring traffic.

Other job tasks include:

- Performing pre- and post-trip safety checks.
- Ensuring the vehicle is loaded properly.
- Securing the load.
- Evaluating and managing vehicle breakdowns.
- Responding to emergency situations.

Musculoskeletal Regulations 4 CF 391.41(b)(1)(2)(7)

49 CFR 391.41(b)(1)

"A person is physically qualified to drive a commercial motor vehicle if that person —

Has no loss of a foot, a leg, a hand, or an arm, or has been granted a skill performance evaluation certificate pursuant to §391.49."

49 CFR 391.41(b)(2)

"Has no impairment of:

(i) A hand or finger which interferes with prehension or power grasping; or

(ii) An arm, foot, or leg which interferes with the ability to perform normal tasks associated with operating a commercial motor vehicle; or any other significant limb defect or limitation which interferes with the ability to perform normal tasks associated with operating a commercial motor vehicle; or has been granted a skill performance evaluation certificate pursuant to §391.49."

49 CFR 391.41(b)(7)

"Has no established medical history or clinical diagnosis of rheumatic, arthritic, orthopedic, muscular, neuromuscular, or vascular disease which interferes with his/her ability to control and operate a commercial motor vehicle safely."

Health History and Physical Examination

General Purpose of Health History and Physical Examination

The general purpose of the history and physical examination is to detect the presence of physical, mental, or organic conditions of such character and extent as to affect the ability of the driver to operate a commercial motor vehicle (CMV) safely. This examination is for public safety determination and is considered by FMCSA to be a “medical fitness for duty" examination.

As a medical examiner, your fundamental obligation during the musculoskeletal assessment is to establish whether a driver has the musculoskeletal strength, flexibility, dexterity, and balance to maintain control of the vehicle and safely perform nondriving tasks.

The examination is based on information provided by the driver (history), objective data (physical examination), and additional testing requested by the medical examiner. Your assessment should reflect physical, psychological, and environmental factors.

Medical certification depends on a comprehensive medical assessment of overall health and informed medical judgment about the impact of single or multiple conditions on the whole person.

Key Points for Musculoskeletal Examination

During the physical examination, you should ask the same questions as you would for any individual who is being assessed for musculoskeletal concerns. Adapt the observation, inspection, palpation, and screening tests of the general musculoskeletal examination to ensure that the physical demands of commercial driving are assessed (e.g., rotation of the outstretched arms against resistance as if turning a large steering wheel, movement of the legs in braking and clutching, etc.).

The FMCSA Medical Examination Report form includes health history questions. Additional questions should be asked to supplement information requested on the form. You may ask about musculoskeletal symptoms. Any musculoskeletal or neuromuscular condition should be evaluated for the nature and severity of the condition, the degree of limitation present, the likelihood of progressive limitation, and the potential for gradual or sudden incapacitation.

Regulations — You must review and discuss with the driver any "yes" answers

Does the driver have:

- A muscular disease?
- A missing hand, arm, foot, leg, finger, or toe?
- A nonfunctioning or dysfunctional hand, arm, foot, leg, finger, or toe?

- An injury or disease of the spine?
- Chronic low back pain?

Recommendations — Questions that you may ask include

Does the driver:

- Have physical limitations caused by weakness, pain, or decreased mobility and range of motion (nature and degree)?
- Use musculoskeletal agents (effects and/or side effects)?
- Have mild, moderate, or severe chronic musculoskeletal pain (frequency and intensity)?

Regulations — You must evaluate

Does the driver have:

- A missing or impaired leg, foot, toe, arm, hand, or finger?
- Sufficient power grasp and prehension of hands and fingers to maintain steering wheel grip?
- Sufficient strength and mobility in lower limbs to operate pedals properly?
- A perceptible limp?
- Signs of previous spine or other musculoskeletal surgery?
- Deformities of the spine and/or torso?
- Sufficient mobility and strength of spine and/or torso to drive safely and perform other job tasks?
- Limitations of motion of the spine and/or torso?
- Spine, torso, and/or other musculoskeletal tenderness?

NOTE: *As a medical examiner, you determine if the severity of a reversible or progressive musculoskeletal disease interferes with driving ability. If findings so dictate, radiology and other examinations should be used to diagnose congenital or acquired defects or spondylolisthesis and scoliosis.*

Examination by a neurologist or physiatrist who understands the functions and demands of commercial driving may be required to assess the status of the disease. However, as a medical examiner, it is your responsibility to determine certification status.

Record

Regulations — You must document discussion with the driver about

- Any affirmative musculoskeletal history, including if available:
    - Onset date and diagnosis.
    - Medication(s), dose, and frequency.
    - Any current limitation(s).
- Potential negative effects of medication used while driving, including over-the-counter medication.
- Any abnormal finding(s), noting:

- Effect on driver ability to operate a CMV safely.
    - Necessary steps to correct the condition as soon as possible, particularly if the untreated condition could result in more serious illness that might affect driving.
- Any additional tests and evaluation.

REMEMBER: *Medical fitness for duty includes the ability to perform strenuous labor. Overall requirements for commercial drivers as well as the specific requirements in the job description of the driver should be deciding factors in the certification process.*

Advisory Criteria/Guidance

Fixed Deficit of an Extremity

When the loss of (hand, foot, leg, or arm) or a fixed impairment to an extremity may interfere with the ability of the driver to operate a commercial motor vehicle (CMV) safely, you are responsible for determining if the driver is otherwise medically fit to drive. A driver may be allowed to drive if the qualification requirements for a Skill Performance Evaluation (SPE) certificate under 49 CFR 391.49 are met.

Skill Performance Evaluation — 4 CFR 391.49

See the Skill Performance Evaluation section of this handbook.

NOTE: *As a medical examiner, you determine if the severity of a fixed deficit that is less than the whole hand is medically disqualifying unless the driver has an SPE certificate pursuant to 49 CFR 391.49. The SPE is applicable only for fixed deficits of the extremities.*

In order to legally operate a CMV, the driver must carry an SPE certificate and a valid medical examiner's certificate. The driver is responsible for ensuring that both certificates are renewed prior to expiration.

Waiting Period

No recommended time frame

The driver must be otherwise medically fit for duty before certification or recertification in accordance with 49 CFR 391.49.

Decision

Maximum certification period — 2 years

Recommend to certify (accompanied by an SPE) if:

The driver has:

- A fixed deficit of an extremity and is otherwise medically qualified at physical examination (required for both certification and recertification).
- A valid SPE certificate and documentation of compliance with medical requirements (required for recertification with a current SPE certificate).

NOTE: *The SPE applies only to fixed deficits of the extremities, not those caused by a progressive disease. To be certified, the driver with a deficit of an extremity caused by a progressive disease must*

meet 49 CFR 391.41 requirements, including adequate range of motion, strength, grip, and prehension to safely operate a CMV.

Recommend not to certify if:

The driver has:

- An impairment that affects the torso.
- Not provided proof of compliance with SPE certification requirements.
- A disqualifying limb impairment caused by a progressive disease (e.g., multiple sclerosis).

NOTE: *The SPE applies only to fixed deficits of the extremities, not those caused by a progressive disease. The driver with a deficit of an extremity caused by a progressive disease must not be certified if the driver cannot meet 49 CFR 391.41 requirements.*

Recommend not to certify if:

Monitoring/Testing

SPE initial and renewal applications also require a medical evaluation summary completed by either a board qualified or board certified physiatrist or orthopedic surgeon. You should review the report at recertification for any medical changes before determining driver certification status.

Follow-up

The driver should have at least biennial physical examinations or more frequently when indicated. The driver is responsible for maintaining current medical and SPE certification.

Musculoskeletal Tests

Detection of an undiagnosed musculoskeletal finding during the physical examination may indicate the need for further testing and examination to adequately assess medical fitness for duty. Diagnostic-specific testing may be required to detect the presence and/or severity of the musculoskeletal condition. The additional testing may be ordered by the medical examiner, primary care physician, or musculoskeletal specialist (e.g., orthopedic surgeon, physiatrist).

When requesting additional evaluation, the specialist must understand the role and function of a driver; therefore, it is helpful if you include a description of the role of the driver and a copy of the applicable medical standard(s) and guidelines with the request.

Record

Record additional tests in the Medical Examination Report form, "6. LABORATORY AND OTHER TEST FINDINGS" section and/or attach additional test reports.

6. LABORATORY AND OTHER TEST FINDINGS **Numerical readings must be recorded**

Urinalysis is required. Protein, blood or sugar in the urine may be an indication for further testing to rule out any underlying medical problem.

Other Testing (Describe and record) _____

	SP. GR.	PROTEIN	BLOOD	SUGAR
URINE SPECIMEN	1.020	Neg	Neg	Neg

Table 7 - Medical Examination Report Form: Laboratory and Other Test Findings

Grip Strength Tests

The Federal Motor Carrier Safety Administration does not require any specific test for assessing grip power. Examples of grip strength tests include:

- Dynamometer designed to measure grip strength.
- Sphygmomanometer used as a screening test for grip by having the applicant repeatedly squeeze the inflated cuff while noting the maximum deflection on the gauge.

REMEMBER: *The driver must have sufficient grasp and prehension to control an oversize steering wheel, shift gears using a manual transmission, and maneuver a vehicle in crowded areas.*

Neuromuscular Diseases

See Neuromuscular Diseases section of this handbook.

Diabetes Mellitus

The Center for Disease Control and Prevention (CDC) 2007 National Diabetes Fact Sheet reports the prevalence of diagnosed and undiagnosed diabetes mellitus in the United States, for all ages, as:

- **Total:** 23.6 million people, or 7.8% of the population, have diabetes.
- **Diagnosed:** 17.9 million people.
- **Undiagnosed:** 5.7 million people.

The most common form of diabetes mellitus is Type 2 (adult onset or non-insulin-dependent diabetes mellitus). Individuals with Type 2 diabetes mellitus:

- Can produce insulin and have intact blood glucose control counter-regulatory mechanisms.
- May preserve blood glucose control counter-regulatory mechanisms for many years with lifestyle changes and oral hypoglycemic medications.
- May, over time, have insulin production fail and require insulin replacement therapy.

While the detection and management of both hyperglycemia and hypoglycemia are important aspects of the overall medical management of a person with diabetes mellitus, the detection and management of hypoglycemia is more relevant to safety considerations, in the certification of the commercial motor vehicle (CMV) driver, with diabetes mellitus.

Blood Glucose Control

Some of the factors related to commercial driving that affect blood glucose control include:

- Fatigue.
- Lack of sleep.
- Poor diet.
- Missed meals.
- Emotional conditions.
- Stress.
- Concomitant illness.

These same factors may hasten the need for the driver with diabetes mellitus who does not use insulin to start insulin therapy. Poorly controlled diabetes mellitus can result in serious, life-threatening health consequences. However, with good management of the disease process, a driver with diabetes mellitus can safely operate a CMV.

Hyperglycemia Risk

Poor blood glucose control can lead to fatigue, lethargy, and sluggishness. Complications related to acute hyperglycemia may affect the ability of a driver to operate a motor vehicle. Although ketoacidosis and hyperosmolar states significantly impair cognitive function. Onset is gradual and frequency is generally low.

The complications of diabetes mellitus can lead to medical conditions severe enough to be disqualifying, such as neuropathy, retinopathy, and nephropathy. Accelerated atherosclerosis is a major complication of diabetes mellitus involving the coronary, cerebral, and peripheral vessels. Individuals with diabetes mellitus are at increased risk for coronary heart disease and have a higher incidence of painless myocardial infarction than individuals who do not have diabetes mellitus.

Preventing hypoglycemia is the most critical and challenging safety issue for any driver with diabetes mellitus. Hypoglycemia can occur in individuals with diabetes mellitus who both use and do not use insulin. Mild hypoglycemia causes rapid heart rate, sweating, weakness, and hunger. Severe hypoglycemia can cause symptoms that interfere with safe driving. The Federal Motor Carrier Safety Administration (FMCSA) defines a severe hypoglycemic reaction as one that results in:

- Seizure.
- Loss of consciousness.
- Need of assistance from another person.
- Period of impaired cognitive function that occurred without warning.

The occurrence of a severe hypoglycemic reaction while driving endangers the safety and health of the driver and the public.

Diabete Mellitus Regulation 4 CF 391.41(b)(3)

"A person is physically qualified to drive a commercial motor vehicle if that person —

Has no established medical history or clinical diagnosis of diabetes mellitus currently requiring insulin for control."

Health History and Physical Examination

General Purpose of Health History and Physical Examination

The general purpose of the history and physical examination is to detect the presence of physical, mental, or organic conditions of such character and extent as to affect the driver ability to operate a CMV safely. This examination is for public safety determination and is considered by FMCSA to be a “medical fitness for duty" examination.

As a medical examiner, your fundamental obligation during the assessment of a driver with diabetes mellitus is to establish whether the driver is at an unacceptable risk for sudden death or incapacitation, thus endangering public safety. The risk may be associated with the disease process and/or the treatment for the disease.

The examination is based on information provided by the driver (history), objective data (physical examination), and additional testing requested by the medical examiner. Your assessment should reflect physical, psychological, and environmental factors.

Medical certification depends on a comprehensive medical assessment of overall health and informed medical judgment about the impact of single or multiple conditions on the whole person.

Key Points for Diabetes Mellitus Examination

Medical qualification of the driver with diabetes mellitus should be determined through a case-by-case evaluation of the ability of the driver to manage the disease and meet qualification standards. The FMCSA Medical Examination Report form includes health history questions and physical examination checklists. Additional questions about diabetes mellitus symptoms, treatment, and driver adjustment to living with a chronic condition should be asked to supplement information requested on the form.

Regulations — You must review and discuss with the driver any "yes" answers

Does the driver have diabetes mellitus or elevated blood glucose controlled by:

- Diet?
- Pills?
- Insulin?
- Other injectable medications?

Recommendations — Questions that you may ask include

Does the driver:

- Routinely monitor blood glucose level?
- Use over-the-counter medications and/or supplements?
- Use an incretin mimetic?
- Have a history of fainting, dizziness, or loss of consciousness?
- Have a history of hypoglycemic reactions that resulted in:
    - Seizure?
    - Loss of consciousness?
    - Need of assistance from another person?
    - Period of impaired cognitive function that occurred without warning?

NOTE: *When the driver has a positive history for severe hypoglycemic reactions, ask about occurrences, including has the driver had:*

- *One or more occurrences within last 12 months?*
- *Two or more occurrences within last 5 years?*

Regulations — You must evaluate

On examination, does the driver have:

- Glycosuria (dip stick urinalysis)?
- Signs of target organ damage associated with dysfunction of the senses, including:
    - Retinopathy?
    - Macular degeneration?
    - Peripheral neuropathy?
- Signs of target organ damage that can cause gradual or sudden incapacitation, including:
    - Coronary heart disease?
    - Cerebrovascular disease, including:
        - Transient ischemic attack?
        - Embolic or thrombotic stroke?
        - Peripheral vascular disease?
    - Autonomic neuropathy?
    - Nephropathy?

Record

Regulations — You must document discussion with the driver about

- Any affirmative history, including if available:
    - Onset date, diagnosis.
    - Medication(s), dose, and frequency.
    - Any current limitation(s).
- Potential negative effects of medication use, including over-the-counter medications, while driving.
- Any abnormal finding(s), noting:
    - Effect on driver ability to operate a CMV safely.
    - Necessary steps to correct the condition as soon as possible, particularly if the condition, if neglected, could result in more serious illness that might affect driving.
- Any additional medical tests and evaluation.

REMEMBER: *The diabetes qualification standard parameter is use of insulin, not the diagnosis of diabetes mellitus.*

Advisory Criteria/Guidance

Diabetes Mellitus

The driver with diabetes mellitus who does not use insulin is eligible for certification, unless the driver also has a disqualifying complication, comorbidity, or fails to meet one or more of the other standards for qualification.

You may choose to consult with the primary care provider and/or specialist to adequately assess driver medical fitness for duty. When requesting additional evaluation, including a copy of the Medical Examination Report form description of the driver role and medical standards is helpful.

Remember that the provider treating the driver is primarily concerned with minimizing target organ damage associated with elevated levels of blood glucose. As a medical examiner, your assessing any driver with diabetes mellitus for the risk of a severe hypoglycemic episode is the most critical and challenging safety issue.

NOTE: *If the driver with diabetes mellitus uses insulin, use the Federal Diabetes Exemption Program and insulin therapy guidelines to determine certification status. See the* Federal Diabetes Exemption Program *section of this document.*

Waiting Period

No recommended time frame

You should not certify the driver until the treatment has been shown to be adequate/effective, safe, and stable.

Decision

Maximum certification — 2 years

NOTE: *Because of the progressive nature of diabetes mellitus, the Federal Motor Carrier Safety Administration (FMCSA) believes that 1 year maximum certification time is reasonable when the driver has a diagnosis of diabetes mellitus.*

Recommend to certify if:

The driver with diabetes mellitus:

- Meets all the physical qualification standards.
- Has a treatment plan that manages the disease and does not:
    - Include the use of insulin.
    - Interfere with safe driving.

Recommend not to certify if:

The driver with diabetes mellitus has:

- In the last 12 months, experienced a hypoglycemic reaction resulting in:
    - Seizure.
    - Loss of consciousness.
    - Need of assistance from another person.
    - Period of impaired cognitive function that occurred without warning.
- In the last 5 years, had recurring (two or more) disqualifying hypoglycemic reactions (as described above).
- Loss of position sensation.
- Loss of pedal sensation.
- Resting tachycardia.
- Orthostatic hypotension.
- Diagnosis of:
    - Peripheral neuropathy.
    - Proliferative retinopathy (e.g., unstable proliferative or non-proliferative).

Monitoring/Testing

Urinalysis

Glycosuria may indicate poor blood glucose control. When urinalysis shows glycosuria, you may elect to perform a finger stick test to obtain a random blood glucose.

Blood Glucose

Hemoglobin A1c (HbA1c) greater than 10% is an indicator of poor blood glucose control. It is recommended that you obtain further evaluation or monitor the driver more frequently to determine if the disease process interferes with medical fitness for duty and safe driving.

Follow-up

The driver must have biennial physical examinations. You may require the driver to have more frequent examinations, if indicated, to adequately monitor the progression of the condition.

NOTE: *Encourage the driver with diabetes mellitus to participate in annual diabetes mellitus education.*

Incretin Mimetic

An incretin mimetic, such as exenatide (Byetta), is used to improve glycemic control in people with Type 2 diabetes by reducing fasting and postprandial glucose concentrations. An incretin mimetic is indicated as adjunctive therapy to individuals who are taking metformin or a combination of other oral agents. Use of an incretin mimetic in conjunction with a sulfonylurea has an increased risk of hypoglycemia.

Incretin mimetics are not insulin and can be used without an exemption.

Waiting Period

No recommended time frame

You should not certify the driver until the treatment has been shown to be adequate/effective, safe, and stable.

Decision

Maximum certification — 1 year

NOTE: *The Federal Motor Carrier Safety Administration (FMCSA) recommends frequent monitoring determined on a case-by-case basis.*

Recommend to certify if:

The driver with diabetes mellitus who uses an incretin mimetic:

- Meets all the physical qualification standards.
- Has a treatment plan that manages the disease and does not:
    - Include the use of insulin.
    - Have side effects that interfere with safe driving.

Recommend not to certify if:

As a medical examiner, you believe that the nature and severity of the medical condition and/or the treatment of the driver endangers the safety and health of the driver and the public.

Monitoring/Testing

FMCSA recommends that a driver taking an incretin mimetic provide a written statement from the treating health care professional. The written statement should:

- Describe driver tolerance to the medication.
- Indicate how frequently the driver is monitored for adequate blood glucose control.
- Include efficacy of treatment.

Follow-up

FMCSA recommends frequent monitoring of the driver who is taking an incretin mimetic.

Insulin Therapy

Individuals who require insulin for control of diabetes mellitus blood glucose levels also have treatment conditions that can be adversely affected by the use of too much or too little insulin, or food intake that is not consistent with the insulin dosage.

The administration of insulin is a complicated process requiring insulin, syringe, needle, alcohol sponge, and a sterile technique. Factors related to long-haul commercial motor vehicle (CMV) operations, such as fatigue, lack of sleep, poor diet, emotional conditions, stress, and concomitant illness, compound the dangers. The Federal Motor Carrier Safety Administration (FMCSA) has consistently held that a driver with diabetes mellitus who uses insulin does not meet the minimum physical requirements of 49 CFR 391.41.

Some drivers with diabetes mellitus who use insulin may be medically certified if the driver:

- Has or is eligible to apply for a Federal diabetes exemption.
- Has an FMCSA-issued letter that states the driver may be qualified by operation of 49 CFR 391.64(a) (grandfathered status).

NOTE: *Proof of grandfathered status is the original letter from 1996 granting the right to continue to drive as long as the driver can meet physical qualification requirements. If a letter is not provided, you may verify driver participation in the study program—and the driver can obtain a new copy of the letter—by calling the FMCSA Exemption Program Office at 703-448-3094.*

Hypoglycemia Risk

Preventing hypoglycemia is the most critical and challenging safety issue for any driver with diabetes mellitus. Individuals who use insulin are at an increased risk for hypoglycemic reactions.

NOTE: *FMCSA defines a severe hypoglycemic reaction as one that results in:*

- Seizure.
- Loss of consciousness.
- Need of assistance from another person.
- Period of impaired cognitive function that occurs without warning.

Rescue Glucose

In some cases, hypoglycemia can be self-treated by the ingestion of at least 20 grams of glucose tablets or carbohydrates. Consuming "rescue" glucose or carbohydrates may avert a hypoglycemic reaction for

less than a 2-hour period. The driver with a diabetes exemption must carry a source of rapidly absorbable glucose while driving.

Waiting Period

Minimum — 1 month, if the driver with diabetes mellitus was previously diagnosed and on treatment that did not include the use of insulin

Minimum — 2 months, if the driver with diabetes mellitus is newly diagnosed and was not on prior treatment

Decision

Maximum certification — 1 year

Recommend to certify if:

The driver with diabetes mellitus:

- Meets all other physical qualification requirements of 49 CFR 391.41(b) except for use of insulin and:
    - Has a Federal diabetes exemption or is eligible to apply for the exemption.
    - Was a participant in good standing on March 31, 1996, in the Federal diabetes waiver study program and continues to meet all qualification requirements of 49 CFR 391.64(a).

Recommend not to certify if:

The driver with diabetes mellitus has:

- Other than the use of insulin to treat diabetes mellitus, any other medical problem or condition that prevents certification in accordance with the qualification requirements of 49 CFR 391.41(b).
- In the last 12 months, had a severe hypoglycemic reaction resulting in:
    - Seizure.
    - Loss of consciousness.
    - Need of assistance from another person.
    - Period of impaired cognitive function that occurred without warning.
- In the last 5 years, has had recurring (two or more) disqualifying severe hypoglycemic reactions (as described above).
- Loss of position sensation.
- Loss of pedal sensation.
- Resting tachycardia.
- Orthostatic hypotension.
- Diagnosis of:
    - Peripheral neuropathy that interferes with safe driving.
    - Proliferative retinopathy (e.g., unstable proliferative or non-proliferative).

Monitoring/Testing

Annual Recertification Physical Examinations

The driver with a Federal diabetes exemption should provide you with a copy of the completed Annual Diabetes Assessment Package that includes the:

- Endocrinologist Annual Evaluation Checklist.
  - Exemption requires evaluation by a board-certified or board-eligible endocrinologist.
- Vision Annual Evaluation Checklist.
  - Exemption requires evaluation by an ophthalmologist or optometrist.
  - The driver diagnosed with diabetic retinopathy is required to have an eye examination by an ophthalmologist.

The grandfathered driver should provide a copy of the endocrinologist report addressing the requirements listed in 49 CFR 391.64(a).

Urinalysis

Glycosuria may indicate poor blood glucose control. When urinalysis shows glycosuria, you may elect to perform a finger stick test to obtain a random blood glucose.

Blood Glucose

Poor blood glucose control may indicate a need for further evaluation or more frequent monitoring to determine if the disease process interferes with safe driving.

Blood Glucose Monitoring Guidelines

The Federal Diabetes Exemption Program guidelines for blood glucose monitoring include using a device that records the results for later review and measuring blood glucose level:

- Before driving.
- Every 2 to 4 hours while driving.

Blood glucose levels that remain within the 100 milligrams per deciliter (mg/dL) to 400 mg/dL range are generally considered safe for commercial driving.

NOTE: *You should review and consider the findings of the most recent specialist evaluation reports and blood glucose monitoring documentation before determining if the driver is medically fit for duty.*

Follow-up

The driver must have an annual physical examination.

NOTE: *The driver is responsible for maintaining both a current Medical Examiner's Certificate and Federal diabetes exemption.*

Oral Hypoglycemics

Hypoglycemic drugs taken orally are frequently prescribed for persons with diabetes mellitus to help stimulate natural body production of insulin. If diabetes mellitus can be controlled by the use of oral medication and diet, an individual may be considered for driver certification using the physical qualification requirements of 49 CFR 391.41.

NOTE: *If the driver with diabetes mellitus uses insulin, use the Federal Diabetes Exemption Program and insulin therapy guidelines to determine certification status.*

Waiting Period

No recommended time frame

You should not certify the driver until the treatment has been shown to be adequate/effective, safe, and stable.

Decision

Maximum certification — 1 year

Recommend to certify if:

The driver with diabetes mellitus who uses an oral hypoglycemic medication:

- Meets all the physical qualification standards.
- Has a treatment plan that manages the disease and does not:
    - Include the use of insulin.
    - Have side effects that interfere with safe driving.

Recommend not to certify if:

As a medical examiner, you believe that the nature and severity of the medical condition and/or the treatment of the driver endangers the safety and health of the driver and the public.

Monitoring/Testing

Not applicable.

Follow-up

The driver should have biennial physical examinations. You may require the driver to have more frequent physical examinations, if indicated, to adequately monitor driver medical fitness for duty.

Other Diseases

The fundamental question when deciding if a commercial driver should be certified is whether the driver has a condition that so increases the risk of sudden death or incapacitation that the condition creates a danger to the safety and health of the driver, as well as to the public sharing the road.

The qualification standards cover 13 areas that directly relate to the driving function; however, on a case-by-case basis, use your clinical skills and knowledge of the Federal Motor Carrier Safety Administration (FMCSA) physical qualification standards to evaluate the overall medical fitness for duty of the driver.

The medical advisory criteria for 49 CFR 391.41(b)(9) includes examples of how medical conditions might interfere with operation of a commercial motor vehicle (CMV). You are expected to assess the nature and severity of the medical condition and determine certification outcomes on a case-by-case basis and with knowledge of the demands of commercial driving.

- "Emotional or adjustment problems contribute directly to an individual's level of memory, reasoning, attention, and judgment. These problems often underlie physical disorders."
- "A variety of functional disorders can cause drowsiness, dizziness, confusion, weakness, or paralysis that may lead to incoordination, inattention, loss of functional control, and susceptibility to crashes while driving."

- "Physical fatigue, headache, impaired coordination, recurring physical ailments, and chronic 'nagging' pain may be present to such a degree that certification for commercial driving is inadvisable."

Disorders of the genitourinary and gastrointestinal systems have not been widely associated with significant impact on driving ability for drivers as a group but may, on a case-by-case basis, interfere with safe driving. You should not certify the driver until the etiology is confirmed, and treatment has been shown to be adequate/effective, safe, and stable.

Other Diseases Regulation 4 CF 391.41(b)(9)

"A person is physically qualified to drive a commercial motor vehicle if that person —

Has no mental, nervous, organic, or functional disease or psychiatric disorder likely to interfere with his/her ability to drive a commercial motor vehicle safely."

Health History and Physical Examination

General Purpose of Health History and Physical Examination

The general purpose of the history and physical examination is to detect the presence of physical, mental, or organic conditions of such character and extent as to affect the driver ability to operate a CMV safely. This examination is for public safety determination and is considered by FMCSA to be a "medical fitness for duty" examination.

As the medical examiner, your fundamental obligation during the medical assessment is to establish whether a driver has any disease or disorder that increases the risk for sudden death or incapacitation, thus endangering public safety.

The examination is based on information provided by the driver (history), objective data (physical examination), and additional testing requested by the medical examiner. Your assessment should reflect physical, psychological, and environmental factors.

Medical certification depends on a comprehensive medical assessment of overall health and informed medical judgment about the impact of single or multiple conditions on the whole person.

Key Points for Other Diseases

The FMCSA Medical Examination Report form includes health history questions and physical examination checklists. Additional questions should be asked, to supplement information requested on the form, to adequately assess medical fitness for duty of the driver. You should ask about and document any other conditions that might impact the ability to safely operate a CMV.

Regulations — You must review and discuss with the driver any "yes" answers

- Any illness or injury in the last 5 years?
- Kidney disease, dialysis?
- Liver disease?
- Digestive problems?

Recommendations — Questions that you may ask include

Does the driver have:

- Medical therapy that requires monitoring?
- Any current limitation?

Regulations — You must evaluate

On examination, does the driver have:

- Abnormal urinalysis?
- Enlarged liver?
- Enlarged spleen?
- Masses?
- Bruits?
- Hernia?
- Significant abdominal wall muscle weakness?

Record

Regulations — You must document discussion with the driver about

- Any affirmative history, including if available:
    - Onset date, diagnosis.
    - Medication(s), dose, and frequency.
    - Any current limitation(s).
- Potential negative effects of medication use, including over-the-counter medications, while driving.
- Any abnormal finding(s), noting:
    - Effect on driver ability to operate a CMV safely.
    - Necessary steps to correct the condition as soon as possible, particularly if the untreated condition could result in more serious illness that might affect driving.
- Any additional cardiovascular tests and evaluation.

***REMEMBER**: Medical fitness for duty includes the ability to perform strenuous labor. Overall requirements for commercial drivers, as well as the specific requirements in the job description of the driver, should be deciding factors in the certification process.*

Advisory Criteria/Guidance

Hernia

The Medical Examination Report form physical examination section includes checking for hernia for both the abdomen and viscera body system and the genitourinary system.

If a hernia causes discomfort or the diagnosis suggests that the condition might interfere with the control and safe operation of a commercial motor vehicle (CMV), further testing and evaluation may be required to determine driver certification status.

Waiting Period

No recommended time frame

You should not certify the driver until the etiology is confirmed, and treatment has been shown to be adequate/effective, safe, and stable.

Decision

Maximum certification — 2 years

Recommend to certify if:

As the medical examiner, you believe that the nature and severity of the medical condition of the driver does not endanger the safety and health of the driver and the public.

Recommend not to certify if:

As the medical examiner, you believe that the nature and severity of the medical condition of the driver endangers the safety and health of the driver and the public.

Monitoring/Testing

You may, on a case-by-case basis, obtain additional tests and/or consultation to adequately assess driver medical fitness for duty.

Follow-up

The driver must have at least biennial medical examinations.

Nephropathy

Diabetic nephropathy accounts for a significant number of the new cases of end-stage renal disease. The first sign of nephropathy commonly is the development of persistent proteinuria. End-stage renal disease follows some time later. Whether nephropathy is a disqualifying factor should be determined on the basis of the degree of disease progression and the associated impact on driver ability to function.

The prevalence of nephropathy is strongly related to the duration of diabetes mellitus. After 15 years of living with diabetes mellitus, the frequency of nephropathy is higher among individuals who use insulin than with individuals who do not use insulin.

Waiting Period

No recommended time frame

You should not certify the driver until the etiology is confirmed, and treatment has been shown to be adequate/effective, safe, and stable.

Decision

Maximum certification — 2 years

Recommend to certify if:

The driver:

- Meets all the physical qualification standards.
- Has a treatment plan that manages the disease and does not interfere with safe driving.

Recommend not to certify if:

As the medical examiner, you believe that the nature and severity of the medical condition of the driver endangers the safety and health of the driver and the public.

Monitoring/Testing

Urinalysis - An abnormal urinalysis, including but not limited to proteinuria, may indicate some degree of renal dysfunction. You may, on a case-by-case basis, obtain additional tests and/or consultation to adequately assess driver medical fitness for duty.

When requesting additional evaluation from a specialist, the specialist must understand the role and function of a driver. Therefore, including copies of the Medical Examination Report form description of the driver role and the applicable medical standard(s) and guidelines with the request is helpful.

Follow-up

The driver must have biennial medical examinations. You may require more frequent examinations, if indicated, to adequately monitor the progression of the condition.

Urinalysis

You are required to perform a urinalysis (dip stick) as a part of every driver certification and recertification medical examination and to record test results for:

- Specific gravity.
- Protein.
- Blood.
- Glucose.

Proteinuria, hematuria, or glycosuria may be an indication for further testing to rule out any underlying medical problem.

You should advise the driver of any abnormal findings and when indicated, encourage the driver to seek primary care provider evaluation, particularly if an abnormal urinalysis could indicate the presence of a medical condition that if left untreated could result in a serious illness that might affect driving.

When an abnormal urinalysis is indicative of a medical condition that endangers the safety and health of the driver and the public, you should not certify the driver until the etiology is confirmed and treatment has been shown to be adequate/effective, safe, and stable.

Psychological Disorders (b)(9)

Safe and effective operation of a commercial motor vehicle (CMV) requires high levels of physical strength, skill, and coordination as well as the ability to maintain adequate attention and react promptly and appropriately to traffic, emergency situations, and other job-related stressors.

Some psychological or personality disorders can directly affect memory, reasoning, attention, and judgment. Somatic and psychosomatic complaints should be thoroughly examined when determining overall fitness to drive. Disorders of a periodically incapacitating nature, even in the early stages of development, may warrant disqualification.

Risk factors associated with personality disorders can interfere with driving ability by compromising:

- Attention, concentration, or memory affecting information processing and the ability to remain vigilant to the surrounding traffic and environment.
- Visual-spatial function (e.g., motor response latency).
- Impulse control, including the degree of risk taking.
- Judgment, including the ability to predict and anticipate.
- Ability to problem solve (i.e., executive functioning), including the ability to respond to simultaneous stimuli in a changing environment when potentially dangerous situations could exist.

The driver with:

- Active psychotic disorder may exhibit unpredictable behavior and poor judgment.
- Mood disorder may, during a
    - Manic episode exhibit grandiosity, impulsiveness, irritability, and aggressiveness.
    - Depressive episode exhibit slowed reaction time and poor judgment.
- Personality disorders, depending on severity and type, may exhibit inflexible and maladaptive behaviors and have an increased crash rate.

Psychological Regulation 4 CF 391.41(b)(9)

"A person is physically qualified to drive a commercial motor vehicle if that person —

Has no mental, nervous, organic, or functional disease or psychiatric disorder likely to interfere with his/her ability to drive a commercial motor vehicle safely."

Health History and Physical Examination

General Purpose of Health History and Physical Examination

The general purpose of the history and physical examination is to detect the presence of physical, mental, or organic conditions of such character and extent as to affect the ability of the driver to operate a CMV safely. This examination is for public safety determination and is considered by the Federal Motor Carrier Safety Administration (FMCSA) to be a "medical fitness for duty" examination.

As a medical examiner, your fundamental obligation during the psychological assessment is to establish whether a driver has a psychological disease or disorder that increases the risk for periodic, residual, or insidious onset of cognitive, behavioral, and/or functional impairment that endangers public safety.

The examination is based on information provided by the driver (history), objective data (physical examination), and additional testing requested by the medical examiner. Your assessment should reflect physical, psychological, and environmental factors.

Medical certification depends on a comprehensive medical assessment of overall health and informed medical judgment about the impact of single or multiple conditions on the whole person.

Key Points for Psychological Examination

During the physical examination, you should ask the same questions as you would for any individual who is being assessed for psychological concerns. The FMCSA Medical Examination Report form includes health history questions and physical examination checklists. Additional questions should be asked to supplement information requested on the form. You may ask about psychological symptoms and screening tests when indicated by the driver's affect, behavior, or your interactions with the driver.

It is the degree of inappropriateness and the cumulative effect of driver presentation and interaction that provide a cue that a driver may require more in-depth mental health evaluation.

Regulations — You must review and discuss with the driver any "yes" answers

Does the driver:

- Have a nervous or psychiatric disorder (e.g., severe depression)?
- Have loss of or altered consciousness?
- Use medication for a nervous or psychiatric disorder?
- Use alcohol regularly and/or frequently?
- Use narcotic or habit-forming drugs?

Recommendations — You should observe driver presentation and interaction

Does the driver display any of the following:

- Inappropriate dress?
- Suspiciousness?
- Evasiveness?
- Threatening behavior?
- Hostility?
- Distractibility?
- Flat affect or no emotional expression?
- Unusual or bizarre ideas?
- Auditory or visual hallucinations?
- Dishonesty?
- Omission of important information?

Recommendations — Ask the driver

- Have you ever thought of hurting yourself?
- Have you ever thought of suicide?
- Have you ever attempted suicide, including using a vehicle like a car or truck?
- Do you ever get into fights?
- Have you ever thought of hurting or killing other people?

- Do you ever have problems with your concentration or memory?
- Have you ever heard voices that other people don't seem to hear or that weren't really there?
- Have you ever seen things that weren't really there?
- Have you ever been hospitalized for psychiatric problems?
- Are you taking any medication for nerves?
- Have you ever used medicines for a purpose other than what was prescribed?

Recommendations — In addition to health history, you may inquire about

- Work history.
- Driving history.
- Drug and alcohol history.
- Military history, including type of discharge.
- Legal history.

Regulations — You must evaluate

On examination, does the driver have:

- Tremor?
- Enlarged liver and/or spleen?
- Signs of alcoholism or problem drinking?
- Drug abuse?

Record

Regulations — You must document discussion with the driver about

- Any affirmative history, including if available:
    - Onset date, diagnosis.
    - Medication(s), dose, and frequency.
    - Any current limitation(s).
- Potential negative effects of medication use, including over-the-counter medications, while driving.
- Any abnormal finding(s), noting:
    - Effect on driver ability to operate a commercial vehicle safely.
    - Necessary steps to correct the condition as soon as possible, particularly if the untreated condition could result in more serious illness that might affect driving.
- Any additional psychological tests and evaluation.

REMEMBER: *Medical fitness for duty includes the ability to perform strenuous labor and to have good judgment, impulse control, and problem-solving skills. Overall requirements for commercial drivers as well as the specific requirements in the job description of the driver should be deciding factors in the certification process.*

Advisory Criteria/Guidance

There are three categories of risk associated with psychological disorders.

- The **mental disorder**, including symptoms and/or disturbances in performance that are an integral part of the disorder and may pose hazards for driving.
- **Residual symptoms** occurring after time-limited reversible episodes or initial presentation of the full syndrome that can interfere with safe CMV driving.
- **Psychopharmacology**, as many psychotropic medications can compromise performance to the degree that CMV driving would be hazardous.

The recommendations do not support automatic exclusion from CMV driving based solely on the diagnosis. Typically, the more serious the diagnosis, the more likely it is that the driver will be medically disqualified. Careful consideration should also be given to the side effects and interactions of medications in the overall qualification determination.

Many of the medications used to treat psychological disorders have effects and/or side effects that render driving unsafe. The recommendations use the degree of impairment produced by a 0.04 percent blood alcohol concentration as a benchmark. This standard was chosen based on the FMCSA exclusionary rule related to alcohol usage.

Antidepressant Therapy

Guidelines recommend case-by-case assessment of drivers treated with antidepressant medication. Evidence indicates that some antidepressant drugs significantly interfere with skills performance and that these medications vary widely in the degree of impact. With long-term use of antidepressants, many drivers will develop a tolerance to the sedative effects. Your evaluation must consider both the specific medicine used and the pertinent characteristics of the patient.

First generation antidepressants have consistently been shown to interfere with safe driving. First generation antidepressants include tricyclics such as amitriptyline (Elavil) and imipramine (Tofranil).

Second generation antidepressants have fewer side effects and are generally safe; however, these medications can still interfere with safe driving and require case-by-case evaluation. Second generation antidepressants include selective serotonin reuptake inhibitors (SSRIs) such as fluoxetine (Prozac) and sertraline (Zoloft); serotonin and norepinephrine reuptake modulators such as venlafaxine (Effexor); and unicyclic aminoketones such as bupropion (Wellbutrin). You should consider the underlying reason for treatment when determining certification.

Waiting Period

No recommended time frame

You should not certify the driver until the medication has been shown to be adequate/effective, safe, and stable.

Decision

Maximum certification — 1 year

Recommend to certify if:

As the medical examiner, you believe:

- Nature and severity of the underlying condition does not interfere with safe driving.

- Effects or side effects of medication use while operating a commercial motor vehicle do not endanger the safety of the driver and the public.

Recommend not to certify if:

The driver:

- Uses a first generation antidepressant.
- Has treatment effects or side effects that interfere with safe driving.

NOTE: *Federal Motor Carrier Safety Administration recommendations favor not certifying the driver who uses a first generation tricyclic antidepressant stating that "only under exceptional circumstances would continuous use of amitriptyline be acceptable for a commercial driver."*

Monitoring/Testing

You may on a case-by-case basis obtain additional tests and/or consult with a mental health specialist, such as a psychiatrist or psychologist, who understands the functions and demands of commercial driving to evaluate:

- **Dose, plasma concentration, and duration of drug therapy.**
- **Severity of the underlying mental disorder.**

Follow-up

The driver should have annual medical examinations.

Antipsychotic Therapy

Antipsychotic drugs include typical and atypical neuroleptics. These agents are used to treat schizophrenia, psychotic mood disorders, and some personality disorders. Some cases of nausea and chronic pain are also treated with antipsychotic agents. Many of the conditions are associated with behaviors and symptoms such as impulsiveness, disturbances in perception and cognition, and an inability to sustain attention. Often the behaviors and symptoms are only partially corrected by neuroleptics.

Neuroleptics can cause a variety of side effects that can interfere with driving, such as motor dysfunction that affects coordination and response time, sedation, and visual disturbances (especially at night).

Waiting Period

No recommended time frame.

You should not certify the driver until the medication has been shown to be adequate/effective, safe, and stable.

Decision

Maximum certification — 1 year

Recommend to certify if:

As the medical examiner, you believe:

- Nature and severity of the underlying condition does not interfere with safe driving.
- Effects of medication use while operating a commercial motor vehicle does not endanger the safety of the driver and the public.

Recommend not to certify if:

The driver has:

- Disqualifying underlying condition.
- Treatment side effects that interfere with safe driving.

Monitoring/Testing

You may on a case-by-case basis obtain additional tests and/or consult with a mental health specialist, such as a psychiatrist or psychologist, who understands the functions and demands of commercial driving to evaluate:

- Dose, plasma concentration, and duration of drug therapy.
- Severity of the underlying mental disorder.

Follow-up

The driver should have annual medical examinations.

Anxiolytic and Sedative Hypnotic Therapy

Anxiolytic drugs used for the treatment of anxiety disorders and to treat insomnia are termed sedative hypnotics. Studies have demonstrated that benzodiazepines, the most commonly used anxiolytics and sedative hypnotics, impair skills performance in pharmacologically active dosages.

The effects of benzodiazepines on skills performance generally also apply to virtually all non-benzodiazepines sedative hypnotics, although the impairment is typically less profound. However, barbiturates and other sedative hypnotics related to barbiturates cause greater impairment in performance than benzodiazepines. Epidemiological studies indicate that the use of benzodiazepines and other sedative hypnotics are probably associated with an increased risk of automobile crashes.

Waiting Period

No recommended time frame

You should not certify the driver until the medication has been shown to be adequate/effective, safe, and stable.

Decision

Maximum certification — 2 years

Recommend to certify if:

The driver uses:

- Hypnotic, if the medication is:
    - Short-acting (half-life of less than 5 hours).
    - The lowest effective dose.
    - Used for a short period of time (less than 2 weeks).
- Non-sedating anxiolytic.

Recommend not to certify if:

The driver:

- Uses a sedating anxiolytic.
- Has symptoms or side effects that interfere with safe driving.

Monitoring/Testing

You may on a case-by-case basis obtain additional tests and/or consult with a mental health specialist, such as a psychiatrist or psychologist, to adequately assess driver medical fitness for duty.

Follow-up

The driver should have at least biennial medical examinations or more frequently if indicated.

Central Nervous System Stimulant Therapy

Psychiatric uses of central nervous system (CNS) stimulants (e.g., dextroamphetamine, methylphenidate, and pemoline) include primary treatment of narcolepsy and adult attention deficit hyperactivity disorder (ADHD), both of which are associated with psychomotor deficits related to sleepiness or hyperactivity. CNS stimulants may also be used as adjuncts to antidepressants.

CNS stimulants improve performance on simple tasks, but not on tasks requiring complex intellectual functions. For some conditions (e.g., fatigue, brain damage, adult ADHD), low doses of CNS stimulants can enhance:

- Vigilance and attention.
- Performance of simple tasks (not complex intellectual functions).

Before qualifying a driver with ADHD who is using a CNS stimulant:

- Request evaluation from the treating provider.
- Verify the diagnosis of adult ADHD.
- Use caution when determining the side effects of medication.

Waiting Period

No recommended time frame

You should not certify the driver until the medication has been shown to be adequate/effective, safe, and stable.

Decision

Maximum certification — 1 year

Recommend to certify if:

The driver has:

- Non-disqualifying underlying condition (e.g., adult ADHD).
- No drug-induced impairment.
- No tendency to increase the dose.

Recommend not to certify if:

The driver has:

- Disqualifying underlying condition (e.g., narcolepsy).
- Treatment side effects that interfere with safe driving.

Monitoring/Testing

You may on a case-by-case basis obtain additional tests and/or consult with a mental health specialist, such as a psychiatrist or psychologist, who understands the functions and demands of commercial driving to evaluate:

- Dose, plasma concentration, and duration of drug therapy.
- Severity of the underlying mental disorder.

Follow-up

The driver should have annual medical examinations.

Electroconvulsive Therapy

Electroconvulsive therapy (ECT) is sometimes used to treat depression. ECT produces an acute organic mental syndrome characterized by confusion, disorientation, and loss of short-term memory even with low-dose, brief pulse, unilateral treatment. Clinical experience has shown that acute side effects usually resolve rapidly and almost invariably within a few months.

Waiting Period

Minimum — 6 months symptom free following a course of ECT

NOTE: *If more than one waiting period applies (because of multiple cardiac conditions or other comorbid diseases), examine the driver for certification after the completion of the longest waiting period.*

Decision

Recommend to certify if:

The driver:

- Completes the waiting period.
- Has a comprehensive evaluation from an appropriate mental health professional who understands the functions and demands of commercial driving.
- Is not undergoing maintenance ECT.
- Tolerates treatment without disqualifying side effects (e.g., sedation or impaired coordination).

Recommend not to certify if:

The driver has:

- Maintenance ECT.
- Treatment side effects that interfere with safe driving.

Monitoring/Testing

You may on a case-by-case basis obtain additional tests and/or consult with a mental health specialist, such as a psychiatrist or psychologist to adequately assess driver medical fitness for duty.

Follow-up

The driver should have annual medical examinations.

Lithium Therapy

Lithium (Eskalith) is used for the treatment of bipolar and depressive disorders. Studies suggest that there is little evidence of lithium interfering with driver skill performance.

Waiting Period

No recommended time frame

You should not certify the driver until etiology is confirmed and treatment has been shown to be adequate/effective, safe, and stable.

Decision

Recommend to certify if:

The driver:

- Is asymptomatic.
- Has lithium levels that are maintained in the therapeutic range.
- Has no impairment that interferes with safe driving.

Recommend not to certify if:

The driver has:

- Disqualifying underlying condition.
- Disqualifying symptoms.
- Lithium levels that are not in the therapeutic range.

Monitoring/Testing

You may on a case-by-case basis obtain additional tests and/or consult with a mental health specialist, such as a psychiatrist or psychologist, who understands the functions and demands of commercial driving to evaluate:

- Dose, plasma concentration, and duration of drug therapy.
- Severity of the underlying mental disorder.

Follow-up

The driver should have annual medical examinations.

Adult Attention Deficit Hyperactivity Disorder

Children who had attention deficit hyperactivity disorder (ADHD) often continue to show signs of the disorder into adulthood.

Essential features of adult ADHD include age-inappropriate levels of inattention, impulsiveness, and hyperactivity. Symptoms include mood lability, low frustration tolerance, and explosiveness.

Risks to safe driving associated with adult ADHD include comorbid antisocial or borderline personality disorder and/or other disorders, side effects of medication, and a high incidence of substance abuse; however, a significant percentage of individuals with adult ADHD show a moderate to marked degree of improvement on central nervous system stimulant medication.

Waiting Period

No recommended time frame

You should not certify the driver until the etiology is confirmed and treatment has been shown to be adequate/effective, safe, and stable.

Decision

Maximum certification — 1 year

Recommend to certify if:

The driver:

- Complies with treatment program.
- Tolerates treatment without disqualifying side effects (e.g., sedation or impaired coordination).
- Has a comprehensive evaluation from an appropriate mental health professional who understands the functions and demands of commercial driving.

Recommend not to certify if:

The driver has:

- An active psychosis.
- Prominent negative symptoms, including:
    - Substantially compromised judgment.
    - Attentional difficulties.
    - Suicidal behavior or ideation.
    - Personality disorder that is repeatedly manifested by overt, inappropriate acts.
- Side effects that interfere with safe driving.

Monitoring/Testing

You may on a case-by-case basis obtain additional tests and/or consult with a mental health specialist, such as a psychiatrist or psychologist, to adequately assess driver medical fitness for duty.

Follow-up

The driver should have annual medical examinations.

Bipolar Mood Disorder

Mood disorders are characterized by their pervasiveness and symptoms that interfere with the ability of the individual to function socially and occupationally. The two major groups of mood disorders are bipolar and depressive disorders. Bipolar disorder is characterized by one or more manic episodes and is usually accompanied by one or more depressive episodes.

The onset of manic episodes may be sudden or gradual. Symptoms include excessively elevated, expansive, or irritable moods. During a manic episode, judgment is frequently diminished, and there is an increased risk of substance abuse. Some episodes may present with delusions or hallucinations. Treatment for bipolar mania may include lithium and/or anticonvulsants to stabilize mood and antipsychotics when psychosis manifests.

Symptoms of a depressive episode include loss of interest and motivation, poor sleep, appetite disturbance, fatigue, poor concentration, and indecisiveness. A severe depression is characterized by psychosis, severe psychomotor retardation or agitation, significant cognitive impairment (especially poor concentration and attention), and suicidal thoughts or behavior. In addition to the medication used to treat mania, antidepressants may be used to treat bipolar depression.

Other psychiatric disorders, including substance abuse, frequently coexist with bipolar disorder.

NOTE: *Cyclothymia is a mild form of bipolar disorder that causes brief episodes of depression or elevated mood, but typically does not cause marked impairment. Treatment may include medication.*

Determination is not based on diagnosis alone. The actual ability to drive safely and effectively should not be determined solely by diagnosis but instead by an evaluation focused on function **and relevant history.**

Waiting Period

Minimum — 6 months symptom free following a nonpsychotic major depression unaccompanied by suicidal behavior

Minimum — 1 year symptom free following a severe depressive episode, a suicide attempt, or a manic episode

NOTE: *If more than one waiting period applies (because of multiple conditions or other comorbid diseases), examine the driver for certification after the completion of the longest waiting period.*

Decision

Maximum certification — 1 year

Recommend to certify if:

The driver:

- Completes an appropriate symptom-free waiting period.
- Complies with treatment program.
- Tolerates treatment without disqualifying side effects (e.g., sedation or impaired coordination).
- Has a comprehensive evaluation from an appropriate mental health professional who understands the functions and demands of commercial driving.

Recommend not to certify if:

The driver has:

- Active psychosis.
- Prominent negative symptoms, including:
    - Substantially compromised judgment.
    - Attentional difficulties.
    - Suicidal behavior or ideation.
    - Personality disorder that is repeatedly manifested by overt inappropriate acts.
- Treatment side effects that interfere with safe driving.

Monitoring/Testing

At least every 2 years the driver with a history of a major mood disorder should have evaluation and clearance from a mental health specialist, such as a psychiatrist or psychologist, who understands the functions and demands of commercial driving.

Advise the certified driver with a major mood disorder to report any manic or severe major depressive episode within 30 days of onset to the driver's employer, medical examiner, or appropriate health care professional and to seek medical intervention.

Follow-up

The driver should have annual medical examinations.

Major Depression

Major depression consists of one or more depressive episodes that may alter mood, cognitive functioning, behavior, and physiology. Symptoms may include a depressed or irritable mood, loss of interest or pleasure, social withdrawal, appetite and sleep disturbance that lead to weight change and fatigue, restlessness and agitation or malaise, impaired concentration and memory functioning, poor judgment, and suicidal thoughts or attempts. Hallucinations and delusions may also develop, but they are less common in depression than in manic episodes.

Most individuals with major depression will recover; however, some will relapse within 5 years. A significant percentage of individuals with major depression will commit suicide; the risk is the greatest within the first few years following the onset of the disorder.

Although precipitating factors for depression are not clear, many patients experience stressful events in the 6 months preceding the onset of the episode. In addition to antidepressants, other drug therapy may include anxiolytics, antipsychotics, and lithium. Prophylactic treatment may prevent or shorten future episodes. Electroconvulsive therapy is also used to treat some cases of severe depression.

Determination is not based on diagnosis alone. The actual ability to drive safely and effectively should not be determined solely by diagnosis but instead by an evaluation focused on function and relevant history.

Waiting Period

Minimum — 6 months symptom free following a nonpsychotic major depression unaccompanied by suicidal behavior

Minimum — 1 year symptom free following a severe depressive episode, a suicide attempt, or a manic episode

NOTE: *If more than one waiting period applies (because of multiple conditions or other comorbid diseases), examine the driver for certification after the completion of the longest waiting period.*

Decision

Maximum certification — 1 year

Recommend to certify if:

The driver:

- Completes an appropriate symptom-free waiting period.
- Complies with treatment program.
- Tolerates treatment without disqualifying side effects (e.g., sedation or impaired coordination).
- Has a comprehensive evaluation from an appropriate mental health professional who understands the functions and demands of commercial driving.

Recommend not to certify if:

The driver has:

- Active psychosis.
- Prominent negative symptoms, including:
    - Substantially compromised judgment.
    - Attentional difficulties.
    - Suicidal behavior or ideation.
    - Personality disorder that is repeatedly manifested by overt, inappropriate acts.
- Treatment side effects that interfere with safe driving.

Monitoring/Testing

At least every 2 years the driver with a history of a major mood disorder should have evaluation and clearance for commercial driving from a mental health specialist, such as a psychiatrist or psychologist, who understands the functions and demands of commercial driving.

Advise the certified driver with a major mood disorder to report any manic or severe major depressive episode within 30 days of onset to the driver's employer, medical examiner or appropriate health care professional and to seek medical intervention.

Follow-up

The driver should have annual medical examinations.

Personality Disorders

Any personality disorder characterized by excessive, aggressive, or impulsive behaviors warrants further inquiry for risk assessment to establish whether such traits are serious enough to adversely affect behavior in a manner that interferes with safe driving.

A person is medially unqualified if the disorder is severe enough to have repeatedly been manifested by overt acts that interfere with safe operation of a commercial vehicle.

NOTE: *Alcohol and drug dependency and abuse are profound risk factors in the presence of personality disorders.*

Determination is not based on diagnosis alone. The actual ability to drive safely and effectively should not be determined solely by diagnosis but instead by an evaluation focused on function and relevant history.

Waiting Period

No recommended time frame

You should not certify the driver until the etiology is confirmed and treatment has been shown to be adequate/effective, safe, and stable.

Decision

Maximum certification — 1 year

Recommend to certify if:

The driver:

- Complies with treatment program.
- Tolerates treatment without disqualifying side effects (e.g., sedation or impaired coordination).
- Has a comprehensive evaluation from an appropriate mental health professional who understands the functions and demands of commercial driving.

Recommend not to certify if:

The driver has:

- An active psychosis.

- Prominent negative symptoms, including substantially compromised judgment, attentional difficulties, suicidal behavior or ideation, or a personality disorder that is repeatedly manifested by overt, inappropriate acts.
- Treatment side effects that interfere with safe driving.

Monitoring/Testing

You may on a case-by-case basis obtain additional tests and/or consult with a mental health specialist, such as a psychiatrist or psychologist, to adequately assess driver medical fitness for duty.

Follow-up

The driver should have annual medical examinations.

Schizophrenia and Related Psychotic Disorders

Schizophrenia is the most severe condition within the spectrum of psychotic disorders. Characteristics of schizophrenia include psychosis (e.g., hearing voices or experiencing delusional thoughts), negative or deficit symptoms (e.g., loss of motivation, apathy, or reduced emotional expression), and compromised cognition, judgment, and/or attention. There is also an increased risk for suicide.

Individuals with chronic schizophrenia should not be considered medically qualified for commercial driving.

Related conditions include:

- Schizophreniform disorder.
- Brief reactive psychosis.
- Schizoaffective disorder.
- Delusional disorder.

Risks for Commercial Driving

Clinical experience shows that a person who is actively psychotic may behave unpredictably in a variety of ways. For example, a person who is hearing voices may receive a command to do something harmful or dangerous, such as self-mutilation. Delusions or hallucinations may lead to violent behavior. Moreover, antipsychotic therapy may cause sedation and motor abnormalities (e.g., muscular rigidity or tremors) and impair coordination, particularly as the medication is being initiated and doses are adjusted.

Except for a confirmed diagnosis of schizophrenia, determination may not be based on diagnosis alone. The actual ability to drive safely and effectively should not be determined solely by diagnosis but instead by an evaluation focused on function and relevant history.

Waiting Period

Minimum — 6 months symptom free if a brief reactive psychosis or schizophreniform disorder

Minimum — 1 year symptom free if any other psychotic disorder

NOTE: *If more than one waiting period applies (because of multiple conditions or other comorbid diseases), examine the driver for certification after the completion of the longest waiting period.*

Decision

Maximum certification — 1 year

Recommend to certify if:

The driver:

- Completes an appropriate symptom-free waiting period.
- Complies with treatment program.
- Tolerates treatment without disqualifying side effects (e.g., sedation or impaired coordination).
- Has a comprehensive evaluation from an appropriate mental health professional who understands the functions and demands of commercial driving.

Recommend not to certify if:

The driver has:

- Diagnosis of schizophrenia.
- Active psychosis.
- Prominent negative symptoms, including:
    - Substantially compromised judgment.
    - Attentional difficulties.
    - Suicidal behavior or ideation.
    - Personality disorder that is repeatedly manifested by overt, inappropriate acts.
- Treatment side effects that interfere with safe driving.

NOTE: *Chronic schizophrenia is usually a clear-cut condition. Individuals with this condition tend to be severely incapacitated and frequently lack the cognitive skills necessary for steady employment, may have impaired judgment and poor attention, and have a high risk for suicide.*

Monitoring/Testing

At least every 2 years, the driver with a history of mental illness with psychotic features should have evaluation and clearance for commercial driving from a mental health specialist, such as a psychiatrist or psychologist, who understands the functions and demands of commercial driving.

Advise the certified driver with a major mood disorder to report any manic or severe major depressive episode within 30 days of onset to the driver's employer, medical examiner, or appropriate health care professional and to seek medical intervention.

Follow-up

The driver should have annual medical examinations.

Drug Abuse and Alcoholism

There is overwhelming evidence that drug and alcohol use and/or abuse interferes with driving ability. Although there are separate standards for alcoholism and other drug problems, in reality much substance abuse is polysubstance abuse, especially among persons with antisocial and some personality disorders.

Alcohol and other drugs cause impairment through both intoxication and withdrawal. Episodic abuse of substances by commercial drivers that occurs outside of driving periods may still cause impairment during withdrawal. However, when in remission, alcoholism is not disabling unless transient or permanent neurological changes have occurred.

Alcohol and other drug dependencies and abuse are profound risk factors associated with personality disorders that may interfere with safe driving.

Even in the absence of abuse, the commercial driver should be made aware of potential effects on driving ability resulting from the interactions of drugs with other prescription and nonprescription drugs and alcohol (e.g., alcohol enhances hypoglycemic effects of sulfonylureas).

The Office of Drug & Alcohol Policy & Compliance oversees intermodal (e.g., Federal Motor Carrier Safety Administration (FMCSA), Federal Railroad Administration, Federal Transit Administration, and Federal Aviation Administration) drug and alcohol testing programs in accordance with the Omnibus Transportation Employee Testing Act of 1991.

See the FMCSA Drug and Alcohol Program at http://www.fmcsa.dot.gov/safety-security/drug-alcohol/index.aspx for more information about the regulations and guidelines governing CMV drivers.

Drug Abuse and Alcoholism Regulations 4 CF 391.41(b)(12)(13)

49 CFR 391.41(b)(12)i)(ii)(A)(B)

"A person is physically qualified to drive a commercial motor vehicle if that person —

Does not use a controlled substance identified in 21 CFR 1308.11 *Schedule I*, an amphetamine, a narcotic, or any other habit-forming drug.

Exception. A driver may use such a substance or drug, if the substance or drug is prescribed by a licensed medical practitioner who:

Is familiar with the driver's medical history and assigned duties; and

Has advised the driver that the prescribed substance or drug will not adversely affect the driver's ability to safely operate a commercial motor vehicle."

49 CFR 391.41(b)(13)

"Has no current clinical diagnosis of alcoholism."

Health History and Physical Examination

General Purpose of Health History and Physical Examination

The general purpose of the history and physical examination is to detect the presence of physical, mental, or organic conditions of such character and extent as to affect the ability of the driver to operate a commercial motor vehicle (CMV) safely. This examination is for public safety determination and is considered by FMCSA to be a "medical fitness for duty exam."

As a medical examiner, your fundamental obligation is to medically evaluate a driver to ensure that the driver has no medical condition that interferes with the safe performance of driving tasks on a public road. If a driver has a current drinking problem, clinical alcoholism, or uses a Schedule I drug or other substance such as an amphetamine, a narcotic, or any other habit-forming drug, the effects and/or side effects may interfere with driving performance, thus endangering public safety.

The examination is based on information provided by the driver (history), objective data (physical examination), and additional testing requested by the medical examiner. Your assessment should reflect physical, psychological, and environmental factors.

Medical certification depends on a comprehensive medical assessment of overall health and informed medical judgment about the impact of single or multiple conditions on the whole person.

Key Points for Medical Assessment for Drug Abuse and/or Alcoholism

During the physical examination, you should ask the same questions as you would for any individual who is being assessed for psychological or behavior concerns. The FMCSA Medical Examination Report form includes health history questions and physical examination check lists. Additional questions should be asked to supplement information requested on the form. You may use drug and/or alcohol abuse screening tests.

NOTE: *A test for controlled substances is not required as part of the medical certification process. The FMCSA or the employer should be contacted directly for information on controlled substances and alcohol testing under Part 382 of the FMCSRs.*

Regulations — You must review and discuss with the driver any "yes" answers

Does the driver use:

- Alcohol, regularly and frequently?
- Narcotic or habit-forming drugs?

Recommendations — Questions that you may ask include

Does the driver who uses alcohol:

- Have a consumption pattern that indicates additional evaluation may be needed based on quantity per occasion or per day/week?
- Pass standardized screening questions (e.g., Alcohol Use Disorders Identification Test (AUDIT), CAGE, and T-ACE)?
- Have a history of driver and/or family alcohol-related medical and/or behavioral problems?

Does the driver who uses narcotic or habit-forming drugs have a:

- Therapeutic or habitual need?
- Goal to alter mood, affect, or state of consciousness?
- Goal to extend physical limits by use of stimulants?
- History of drug rehabilitation?

NOTE: *Certification may require successful completion of a substance abuse professional (SAP)-required drug rehabilitation program.*

- *Participation in a self-help program cannot be substituted for completion of a SAP-required drug rehabilitation program.*
- *Voluntary, ongoing participation in a self-help program to support recovery is not disqualifying.*

Regulations — You must evaluate

On examination, does the driver have signs of alcoholism, problem drinking, or drug abuse, including:

- Tremor.
- Enlarged liver.

Record

Regulations — You must document discussion with the driver about

- Any affirmative history, including if available:
    - Onset date, diagnosis.
    - Medication(s), dose, and frequency.
    - Any current limitation(s).
- Potential negative effects of medication use, including over-the-counter medications, while driving.
- Any abnormal finding(s), noting:
    - Effect on driver ability to operate a CMV safely.
    - Necessary steps to correct the condition as soon as possible, particularly if the untreated condition could result in more serious illness that might affect driving.
- Any additional drug abuse or alcohol screening tests and evaluation.

REMEMBER: *The Medical Review Officer oversees the drug and alcohol testing process. Medical fitness for duty includes the ability to perform strenuous labor and to have good judgment, impulse control, and problem-solving skills. Overall requirements for commercial drivers as well as the specific requirements in the driver role job description should be deciding factors in the certification process.*

About 49 CF 382 Alcohol and Drug Rules

The purpose of this part is to establish programs designed to help prevent crashes and injuries resulting from the misuse of alcohol or use of controlled substances by drivers of commercial motor vehicles (CMVs).

Key Points About 49 CFR Part 382

Who must be tested?

- All drivers, including part-time, holding a commercial driver's license (CDL) and operating CMVs (greater than 26,000 combined gross vehicle weight rating, or transporting more than 16 passengers, or placarded hazardous materials) on the public roadways must be U.S. Department of Transportation (DOT) drug and alcohol tested. This means any driver required to possess a CDL, including:
    - Drivers employed by Federal, State, and local government agencies.
    - Owner operators.
    - Equivalently licensed drivers from foreign countries.
    - For-hire motor carriers.

NOTE: *Drivers who only operate CMVs on private property not open to the public do not require testing.*

When is drug and/or alcohol testing required?

- Pre-employment:
  - Drug testing is required; however, a driver may be exempted from testing if the driver was in a testing program within the last 30 days and tested within the last 6 months or in a program for the previous 12 months.
  - Alcohol testing is **not** required; however, the employer may require alcohol testing before the driver can perform safety-sensitive functions. The employer may make the job offer contingent upon passing an alcohol test.
- **Post-accident** drug and/or alcohol testing is required for all fatal crashes and when the driver is cited for a moving traffic violation.
- **Reasonable suspicion** testing is conducted when a trained supervisor or company official observes behavior or appearance that is characteristic of drug and/or alcohol misuse.
- **Random** drug and/or alcohol testing is conducted on a random, unannounced basis just before, during, or just after performance of safety-sensitive functions.
- **Return-to-duty** and **follow-up** testing is conducted when an individual who has violated the prohibited drug and/or alcohol conduct standards returns to performing safety-sensitive duties.

Employer responsibilities include:

- Implementing and conducting drug and alcohol testing programs.
- Providing a list of substance abuse professionals (SAPs).
- Ensuring that the driver who is returning to a safety-sensitive position has complied with SAP recommendations.
- Conducting follow-up testing to monitor that the driver is compliant with DOT alcohol conduct guidelines and abstaining from unauthorized drug use.

Employer responsibilities do not include:

- Providing SAP evaluations.
- Paying for driver SAP evaluation, education, or treatment.

For more information see Federal Motor Carrier Safety Administration Web site http://www.fmcsa.dot.gov/rules-regulations/topics/drug/engtesting.htm.

Advisory Criteria/Guidance

Alcoholism

Except where absolute criteria exist (i.e., a current clinical diagnosis of alcoholism), as a medical examiner, you make the final determination as to whether the driver meets the Federal Motor Carrier Safety Administration (FMCSA) medical standards for driver certification.

Use whatever tools or additional assessments you feel are necessary. If the driver shows signs of alcoholism, have the driver consult a specialist for further evaluation.

If you believe immediate testing for alcohol is warranted, contact FMCSA or contact the employer of the driver directly for information on controlled substances and alcohol testing under Part 382 of the Federal Motor Carrier Safety Regulations.

A driver MUST submit to alcohol testing if there is reasonable suspicion that the U.S. Department of Transportation (DOT) prohibitions concerning alcohol are violated. Suspicion MUST be based on specific observations concerning driver behavior, speech, or body odor.

Interpretation for 49 CFR 391.41

When an interstate driver tests positive for alcohol or controlled substances under Part 382, the driver is not required to be medically re-examined or to obtain a new medical examiner's certificate provided the driver is seen by a SAP who evaluates the driver and does not make a clinical diagnosis of alcoholism. The SAP provides the driver with documentation allowing the driver to return to work.

If the SAP determines that alcoholism exists, the driver is not qualified to drive a commercial motor vehicle in interstate commerce. The ultimate responsibility rests with the motor carrier to ensure the driver is medically qualified and to determine whether a new medical examination should be completed.

Waiting Period

No recommended time frame

You should not certify the driver until the driver has successfully completed counseling and/or treatment.

Decision

Maximum certification — 2 years

Recommend to certify if:

The driver with a history of alcoholism has:

- No residual disqualifying physical impairment.
- Successfully completed counseling and/or treatment.
- No current disqualifying alcohol-related disorders.

Do not to certify if:

The driver has:

- A current clinical diagnosis of alcoholism.
- Signs of a current alcoholic illness and/or non-compliance with DOT alcohol conduct guidelines.
- An alcohol-related unstable physical condition, regardless of the time element.
- Not met return-to-duty requirements.

NOTE: *Ongoing voluntary attendance at self-help groups (e.g., 12-step programs) for maintenance of recovery is not disqualifying.*

Monitoring/Testing

You may on a case-by-case basis obtain additional tests and/or consultation to adequately assess driver medical fitness for duty.

Follow-up

No specific follow up is required.

Drug Abuse

All drug test results are reviewed and interpreted by a physician who is certified as a medical review officer (MRO). When there is a positive result, the MRO contacts the driver and conducts an interview to determine if there is an alternative medical explanation for finding drugs in the urine specimen. The MRO notifies the employer only after determining that a positive test result was caused by unauthorized driver use of a controlled substance.

All urine specimens are tested for:

- Marijuana.
- Cocaine.
- Amphetamines.
- Opiates.
- Phencyclidine (PCP).

A driver MUST be removed from safety-sensitive duty when the driver has a positive drug test result caused by the unauthorized use of a controlled substance. To be returned to safety-sensitive duties the driver MUST:

- Be evaluated by a substance abuse professional (SAP).
- Comply with recommended rehabilitation.
- Have a negative result on a return-to-duty drug test.

Waiting Period

No recommended time frame

You should not certify the driver for the duration of the prohibited drug(s) use and until a second examination shows the driver is free from the prohibited drug(s) use and has completed any recertification requirements.

To be returned to safety-sensitive duties the driver MUST:

- Be evaluated by a SAP.
- Comply with recommended rehabilitation.
- Have a negative result on a return-to-duty drug test.

Decision

Maximum certification — 2 years

Recommend to certify if:

The driver with a history of drug abuse has:

- No residual disqualifying physical condition.
- Proof of successful completion of return-to-duty requirements.

Do not to certify if:

The driver uses:

- Schedule I controlled substances.
- Amphetamines.
- Narcotics.
- Any other habit-forming drug for which the exception guidelines do not apply.
- Methadone (regardless of the reason for the prescription).
- Marijuana (even if in a State that allows medicinal use).

NOTE: *Ongoing voluntary attendance at self-help groups (e.g., 12-step programs) for maintenance of recovery is not disqualifying.*

Monitoring/Testing

You have the option to certify for a period of less than 2 years if more frequent monitoring is required.

Follow-up

The driver should have at least biennial medical examinations or more frequently if indicated.

Medications/Drug Use 49 CFR 391.41(b)(12)

The effects and/or side effects of medications may interfere with safe driving. The driver may experience an altered state of alertness, attention, or even temporary confusion. Other medications may cause physical symptoms such as hypotension, sedation, or increased bleeding that can interfere with task performance or put the driver at risk for gradual or sudden incapacitation. Combinations of medications and/or supplements may have synergistic effects that potentiate side effects, causing gradual or sudden incapacitation.

The demands of commercial driving may complicate adherence to prescribed dosing intervals and precautions. Irregular meal timing, periods of sleep deprivation or poor sleep quality, and irregular or extended work hours can alter the effects of medicine and contribute to missed or irregular dosing. Physical demands may increase pain and the need for medication.

Three types of medications may be used by the commercial driver:

- Prescription.
- Over-the-counter (OTC).
- Supplements and herbs.

Every year, more medications are available without prescription and provider supervision. Nonprescription medications are not necessarily safe to use while driving

In the advisory criteria general information, you are instructed to discuss common prescriptions and OTC medications relative to the side effects and hazards of these medications while driving. In addition, educate the driver to read warning labels on all medications.

Medications/Drug Use Regulation 49 CFR 391.41(b)(12)

"A person is physically qualified to drive a commercial motor vehicle if that person —

Does not use a controlled substance identified in 21 CFR 1308.11 *Schedule I*, an amphetamine, a narcotic, or any other habit-forming drug.

Exception. A driver may use such a substance or drug, if the substance or drug is prescribed by a licensed medical practitioner who:

Is familiar with the driver's medical history and assigned duties; and

Has advised the driver that the prescribed substance or drug will not adversely affect the driver's ability to safely operate a commercial motor vehicle."

Health History and Physical Examination

General Purpose of Health History and Physical Examination

The general purpose of the history and physical examination is to detect the presence of physical, mental, or organic conditions of such character and extent as to affect the ability of the driver to operate a commercial motor vehicle (CMV) safely. This examination is for public safety determination and is considered by the Federal Motor Carrier Safety Administration (FMCSA) to be a "medical fitness for duty" examination.

As the medical examiner, your fundamental obligation is to establish whether a driver uses one or more medications and supplements that have cognitive or physical effects or side effects that interfere with safe driving, thus endangering public safety.

The examination is based on information provided by the driver (history), objective data (physical examination), and additional testing requested by the medical examiner. Your assessment should reflect physical, psychological, and environmental factors.

Medical certification depends on a comprehensive medical assessment of overall health and informed medical judgment about the impact of single or multiple conditions on the whole person.

Key Points for Medications Use Examination

During the physical examination, you should ask the driver to provide a complete history of medication use, including OTC medications and food and herbal supplements. The FMCSA Medical Examination Report form includes health history questions and physical examination checklists. Additional questions should be asked to supplement information requested on the form. You may ask questions to ascertain the level of knowledge regarding appropriate use of the medication while driving.

Regulations — You must review and discuss with the driver any "yes" answers

Does the driver use medications to:

- Treat cardiovascular disease?
- Reduce hypertension?
- Control blood glucose level?
    - Oral hypoglycemics?
    - Insulin (regardless of route)?
- Control seizures or treat epilepsy?
- Treat nervous or psychiatric disorders?

Did the driver list all medications (including OTC medications) used regularly or recently?

Recommendations — Question that you may ask include

Does the driver experience:

- Dizziness or light-headedness?
- Hypotension?
- Sedation?
- Depressed mood?
- Cognitive deficit?
- Decreased reflex responses?
- Unsteadiness?

Regulations — You must evaluate

On examination, does the medication have:

- The desired effect on the underlying disease (e.g., blood pressure is lowered)?
- Side effects that interfere with safe driving (e.g., uncontrollable tremor or orthostatic hypotension)?

Important considerations for medication use while driving

Does the medication:

- Indicate the presence of underlying disqualifying disease or injury?
- Effectively treat the disease or medical condition?
- Exhibit side effects that interfere with safe driving?
- Have side effects that interfere with lifestyle functions such that the driver may cease to comply with treatment (e.g., decreased libido).
- Have potential for gradual or sudden incapacitation, or exacerbation of underlying medical condition, due to missed dose (e.g., seizure, psychosis)?
- Require monitoring to maintain a therapeutic dose or prevent toxicity (e.g., Coumadin)?
- Interact with other drugs, food, and/or alcohol, interfering with the ability to drive?

Does the driver:

- Understand and comply with medication plan, including monitoring?
- Know what warning signs might indicate medication toxicity, interaction, etc.?
- Store medications properly when driving long haul or cross country?
- Read and understand warning labels on medications and supplements?
- Consult the treating healthcare professional and/or a pharmacist before using new medication or combining medications while driving.

Record

Regulations — You must document discussion with the driver about

- Any affirmative history, including:
  - Onset date, diagnosis.
  - Medication(s), dose, and frequency.
  - Any current limitation(s).
- Potential negative effects of medication use, including OTC medications, while driving.
- Any abnormal finding(s), noting:
  - Effect on driver ability to operate a CMV safely.
  - Necessary steps to correct the condition if appropriate, or reasons for disqualification.
- Any additional tests and evaluation.

REMEMBER: *Medical fitness for duty includes the ability to perform strenuous labor and to have good judgment, impulse control, and problem-solving skills. Overall requirements for commercial drivers as well as the specific requirements in the driver role job description should be deciding factors in the certification process.*

Advisory Criteria/Guidance

About 21 USC Sec. 812 Schedules of Controlled Substances

49 CFR 391.41(b)(12) identifies driver use of Schedule I drugs as medically disqualifying. The 1970 Comprehensive Drug Abuse Prevention and Control Act provides the framework for the current Drug Enforcement Administration (DEA) drug schedules.

There are five schedules of controlled substances, I, II, III, IV, and V. The drug schedules are based on addiction potential and medical use but not on side effects. The lists are updated annually.

NOTE: *The advisory criteria first directs you to 21 CFR 1308.11 TITLE 21— FOOD AND DRUGS CHAPTER 13 — DRUG ABUSE PREVENTION AND CONTROL SUBCHAPTER I — CONTROL AND ENFORCEMENT Part B — Authority To Control; Standards and Schedules. This regulation describes the rules and procedures used to establish and maintain the 21 USC Sec. 812 controlled substance lists.*

Key Points About 21 USC Sec. 812

Schedule I

These drugs have no currently accepted medical use in the United States, have a high abuse potential, and are not considered safe, even under medical supervision. These substances include many opiates, opiate derivatives, and hallucinogenic substances. Heroin and marijuana are examples of Schedule I drugs. The exception criteria of 49 CFR 41(b)(12)(ii) does not apply to any Schedule I substance.

NOTE: *The driver taking medical marijuana cannot be certified.*

Schedule II

These drugs have currently accepted medical uses but have a high abuse potential that may lead to severe psychological or physical dependence. Schedule II drugs include opioids, depressants, and

amphetamines. The opioids in Schedule II include natural opioids (e.g., morphine) and synthetic opioids (e.g., OxyContin).

NOTE: *Interpretation for 49 CFR 391.41- Methadone is a habit-forming narcotic which can produce drug dependence and is not an allowable drug for operators of commercial motor vehicles (CMV).*

Schedules III - V

These drugs have decreasing potential for abuse than preceding schedules. Abuse may lead to moderate or low physical dependence or high psychological dependence. Schedule III drugs include tranquilizers. Schedule IV drugs include drugs such as chlorhydrol and phenobarbital. Schedule V drugs have the lowest potential for abuse and include narcotic compounds or mixtures.

Side effects are not part of the DEA schedule rating criteria. Therefore, a substance can have little risk for addiction and abuse but still have side effects that interfere with driving ability.

See About 49 CFR 382 Alcohol and Drug Rules **section of this handbook.**

Appendix A: Medical Examination Report Form

To print a sample Medical Examination Report form, visit:
http://www.fmcsa.dot.gov/documents/safetyprograms/Medical-Report.pdf

Medical Examination Report Form - Page 1

The first page of the Medical Examination Report form is for recording Driver Information and Health History. The driver completes these sections.

Driver Information

A complete physical examination is required for new certification and recertification. Verify that the date of the examination is accurate because this is used to calculate the expiration date.

Any individual can request and be given a Federal Motor Carrier Safety Administration physical examination. A person must be at least 21 years of age to operate a commercial motor vehicle (CMV) in interstate commerce. A person operating a CMV in interstate commerce must be medically examined, carry an original or copy of the medical examiner's certificate while driving, and be currently licensed (commercial or noncommercial).

Health History

The health history is an essential part of the driver physical examination. Are there limitations resulting from a current or past medical condition? Are there symptoms that indicate additional testing or evaluation is needed? Discuss the safety implications of effects and/or side effects of prescription and over-the-counter medications, supplements, and herbs.

Ensure that the driver signs and dates the Medical Examination Report form. By signing the form, the driver certifies that the information and history are "complete and true." The driver signature also acknowledges that providing inaccurate or false information or omitting information could invalidate the medical examiner's certificate. A civil penalty may be levied under 49 U.S.C. 521(b)(2)(b) against the driver who provides a false or intentionally incomplete medical history. Everything above the driver signature should be completed by the driver.

As a medical examiner, you must clarify yes answers. Document the significant findings of the health history in the comments section below the signature of the driver.

Medical Examination Report Form - Page 2

The results of the four required tests: vision, hearing, blood pressure/pulse, and urinalysis are recorded on the second page of the Medical Examination Report form. Abnormal test results may disqualify a driver or indicate that additional evaluation and/or testing are needed.

Drug and alcohol testing are not required for the driver physical examination unless findings indicate they are needed to determine medical fitness for duty.

Vision

The medical examiner or a licensed ophthalmologist or optometrist can examine and certify vision test results.

Visual acuity is measured in each eye individually and both eyes together:

- Distant visual acuity of at least 20/40 (Snellen) in each eye, with or without corrective lenses.
- Distant binocular visual acuity of at least 20/40 (Snellen) in both eyes, with or without corrective lenses.
- Field of vision of at least 70° in the horizontal meridian in each eye.

Color vision must be sufficient to recognize and distinguish traffic signals and devices showing the standard red, amber, and green colors.

When corrective lenses are used to meet vision qualification requirements, the corrective lenses must be used while driving.

A driver with monocular vision, who is otherwise medically qualified, may apply for a Federal vision exemption. The driver with a Federal vision exemption may be certified for up to 1 year.

You may certify the driver who meets vision qualification requirements, with or without the use of corrective lenses, for up to 2 years.

Hearing

To qualify, the driver must meet the hearing requirement of either the forced whisper test or the audiometric test in one ear.

The requirement for the:

- Forced whisper test is to first perceive a forced whispered voice, in one ear, at not less than five feet.
- Audiometric test is to have an average hearing loss, in one ear, less than or equal to 40 decibels (dB).

The driver who wears a hearing aid to meet the hearing qualification requirement must wear a hearing aid while driving.

Blood Pressure/Pulse

Record pulse rate and rhythm on the Medical Examination Report Form.

The cardiovascular recommendations for certification using the JNC-6 stages of hypertension are summarized in the Medical Examination Report form table. Blood pressure (BP) readings are defined as:

- 140-159/90-99 = Stage 1 hypertension.
- 160-179/100-109 = Stage 2 hypertension.
- Greater than or equal to 180/110 = Stage 3 hypertension.

The driver with hypertension and BP less than or equal to 139/89 may be certified for up to 1 year. Confirm an elevated BP by a second elevated BP later in the examination. The driver with stage 1 or stage 2 hypertension may be certified in accordance with the cardiovascular recommendations, which take into consideration known hypertension history. Disqualify a driver with stage 3 hypertension.

Urinalysis

Record the test results of the required dipstick urinalysis (UA) in the **Laboratory and Other Medical Test Findings** section of the Medical Examination Report form. The dipstick urinalysis must measure specific

gravity and test for protein, blood, and glucose in the urine. Positive test results may indicate that additional evaluation is needed.

Attach copies of additional test results and interpretation reports to the Medical Examination Report form.

Medical Examination Report Form - Page 3

Record the physical examination and certification status on the third page of the Medical Examination Report form.

Physical Examination

The physical examination should be as thorough as described in the Medical Examination Report form, at a minimum. Note any abnormal finding, including the safety implication, even if not disqualifying. Inform the driver of any abnormal findings and as needed advise the driver to obtain follow-up evaluation.

Physical examination may indicate the need for additional evaluation and/or tests. Specialists, such as cardiologists and endocrinologists, may perform additional medical evaluation, but it is the medical examiner who decides if the driver is medically qualified to drive. Document the certification decision, including the rationale for any decision that does not concur with the recommendations.

Certification and Documentation

Certification Status

Document the certification decision in the space provided for certification status. There are two possible outcomes: the driver is certified and issued a medical examiner's certificate or the driver is disqualified and is not issued a medical examiner's certificate.

- Certify the driver
    - **The driver meets all the standards** — The maximum length of time a driver can be medically certified is 2 years. The driver who must wear corrective lenses, a hearing aid, or have a Skill Performance Evaluation certificate may be certified for up to 2 years when there are no other conditions that require periodic monitoring.
    - **The driver meets the standards but has a condition that requires frequent monitoring (and certification)** — Certify for less than 2 years as needed to monitor continued medical fitness for duty. Federal exemptions and some Federal Motor Carrier Safety Administration guidelines specify annual medical examinations.
- Disqualify the driver
    - **The driver does not meet the standards —** Do not issue a medical examiner's certificate.
    - Discuss the disqualification decision with the driver, including what the driver can do to meet the Federal qualification requirements for commercial drivers.

Certification and recertification occur only when the medical examiner determines that the driver is medically fit for duty in accordance with Federal qualification requirements for commercial drivers.

Medical Examiner's Certificate

Provide the medical examiner's certificate to the qualified driver. Ensure that the date entered is the date of the physical examination. The expiration date should be consistent with the Medical Examination Report form certification status and cannot exceed 2 years from the date of the examination. The driver

must sign the medical examiner's certificate. The certificate expires at midnight on the date of expiration. There is no grace period.

The driver must carry a valid medical examiner's certificate when operating a commercial vehicle. The motor carrier is also required to maintain a copy of the medical examiner's certificate.

The certificate can be the original or a photocopy, and can be reduced in size (usually wallet-sized). Lamination is prohibited in some States.

49 CFR 391.43 REGULATION AMENDMENT 73 FR 73127, Dec. 1, 2008

There are now two paragraphs in 49 CFR 391.43(g):

(g)(1) If the medical examiner finds that the person examined is physically qualified to operate a commercial motor vehicle in accordance with §391.41(b), the medical examiner should complete a certificate in the form prescribed in paragraph (h) of this section and furnish the original to the person who was examined. The examiner may provide a copy to a prospective or current employing motor carrier who requests it.

(g)(2) For all drivers examined, the medical examiner should retain a copy of the Medical Examination Report at least 3 years from the date of the examination. If the driver was certified as physically qualified, then the medical examiner should also retain the medical certificate as well for at least 3 years from the date the certificate was issued.

Appendix B: Federal Exemption Programs

49 CFR 381.300 What is an exemption?

"(a) An exemption is temporary regulatory relief from one or more FMCSR given to a person or class of persons subject to the regulations, or who intend to engage in an activity that would make them subject to the regulations.

(b) An exemption provides the person or class of persons with relief from the regulations for up to two years, and may be renewed.

(c) Exemptions may only be granted from one or more of the requirements contained in the following parts and sections of the FMCSRs ...

(c)(3) Part 391 — Qualifications of Drivers."

Federal Vision Exemption Program

The FMCSA Vision Exemption Program is for monocular vision. The vision exemption is issued for a maximum of 2 years and is renewable.

The driver must be otherwise qualified under 49 CFR 391.41(b)(1-13) or hold another valid medical exemption to legally operate a commercial motor vehicle in interstate commerce. Provisions of the vision exemption include an annual medical examination and an eye examination by an ophthalmologist or an optometrist.

At the annual recertification examination, the driver should present the current vision exemption and a copy of the specialist eye examination report. Certify the qualified driver for 1 year and issue a medical examiner's certificate with the "accompanied by" exemption checkbox marked and write "vision" to identify the type of Federal exemption.

The motor carrier is responsible for ensuring that the driver has the required documentation before driving a commercial vehicle. The driver is responsible for carrying both the vision exemption and the medical examiner's certificate while driving and keeping both current.

Qualified by Operation of 49 CFR 391.64: "Grandfathered"

Prior to the implementation of the Federal Vision Exemption Program, FMCSA conducted an initial vision study program that ran from 1992 to 1996. At the conclusion of that study, 2,656 drivers received a one-time letter confirming participation in the study and granting a continued exemption from the monocular vision requirement, as long as the driver is otherwise medically fit for duty and can meet the vision qualification requirements with the one eye. The driver who was grandfathered must have an annual medical examination and an eye examination by an ophthalmologist or optometrist. There are very few remaining drivers from that program.

At the annual medical examination, the driver should present to the medical examiner the letter identifying the driver as a participant in the vision study program and a copy of the specialist eye examination report. Certify the qualified driver for 1 year and issue a medical examiner's certificate with the "Qualified by operation of 49 CFR 391.64" checkbox marked.

Federal Diabetes Exemption Program

About the Federal Diabetes Exemption Program

Background

Prior to the implementation of the Federal Diabetes Exemption Program, the Federal Motor Carrier Safety Administration (FMCSA) conducted a waiver study program concerning commercial motor vehicle (CMV) operation by drivers with insulin-controlled diabetes. A small number of the drivers who participated in the study and were participants in good standing on March 31, 1996, were provided a letter from FMCSA that grandfathered them an exemption from standard 49 CFR 391.41(b)(3), by operation of 49 CFR 391.64(a), as long as they were in compliance with the requirements. These drivers are governed by 49 CFR 391.64(a) and must provide the letter from FMCSA as proof of their grandfathered status before you issue a Medical Examiner's Certificate to the driver.

On September 3, 2003, FMCSA published a Notice of Final Disposition announcing the decision to issue exemptions to the diabetes mellitus prohibition under 49 CFR 391.41(b)(3). This program allows some drivers who meet all medical standards and guidelines, other than the use of insulin, to be medically certified and operate a CMV if the driver also meets the parameters for issuance of a Federal diabetes exemption.

The 2003 Notice explained that in considering exemptions, FMCSA must ensure that the issuance of diabetes exemptions will not be contrary to the public interest, and that the exemption achieves an acceptable level of safety.

Responsibilities

As a medical examiner, you are responsible for determining if the driver is otherwise medically fit for duty and issuing a Medical Examiner's Certificate that indicates the driver is certified ONLY IF the driver has a diabetes exemption.

The Federal Diabetes Exemption Program is responsible for determining if the driver meets program requirements and for issuing the diabetes exemption.

The motor carrier is responsible for ensuring that the driver has a current medical examiner's certificate and diabetes exemption before allowing the driver to operate a commercial vehicle.

The driver is responsible for carrying both the Medical Examiner's Certificate and the diabetes exemption while driving and keeping both certificates current. The Federal diabetes exemption must be renewed every 2 years. The driver must also comply with program requirements that include:

- Annual:
    - CMV driver medical qualification examination.
    - Endocrinologist evaluation.
    - Ophthalmologist/optometrist evaluation.
    - Diabetes mellitus education.
- Monitoring blood glucose.

NOTE: *Although you, as a medical examiner, are not involved in the Diabetes Exemption Program monitoring, it is helpful for you to understand the requirements. The driver must provide a quarterly evaluation checklist from his/her endocrinologist throughout the 2-year period or risk losing the exemption.*

The Safe, Accountable, Flexible, Efficient Transportation Equity Act — A Legacy for Users (SAFETEA-LU), August 10, 2005, eliminated the driving experience requirement.

For more information, review the Diabetes Exemption Application at http://www.fmcsa.dot.gov/documents/safetyprograms/Diabetes/diabetes-exemption-package.pdf. Please direct questions concerning Driver Exemption Programs to medicalexemptions@dot.gov or call 1-703-448-3094.

Relevance to Driving

The Center for Disease Control and Prevention (CDC) 2007 National Diabetes Fact Sheet (http://www.cdc.gov/features/dsdiabetes/) reports that in adults, type 1 diabetes accounts for 5–10% of all diagnosed cases of diabetes. Individuals with type 1 diabetes mellitus:

- Are distinguished by a virtual lack of insulin production and often severely compromised counter-regulatory mechanisms.
- Must have insulin replacement therapy.
- May lack blood glucose control counter-regulatory mechanisms.

Although hypoglycemia can occur in non-insulin-treated diabetes mellitus, it is most often associated with insulin-treated diabetes mellitus. Mild hypoglycemia causes rapid heart rate, sweating, weakness, and hunger, while severe hypoglycemia causes headache and dizziness. FMCSA defines a severe hypoglycemic reaction as one that results in:

- Seizure.
- Loss of consciousness.
- Need of assistance from another person.
- Period of impaired cognitive function that occurs without warning.

Health History and Physical Examination

General Purpose of Health History and Physical Examination

The general purpose of the history and physical examination is to detect the presence of physical, mental, or organic conditions of such character and extent as to affect the driver ability to operate a CMV safely. This examination is for public safety determination and is considered by FMCSA to be a “medical fitness for duty" examination.

As a medical examiner, your fundamental obligation during the assessment of a driver with diabetes mellitus who uses insulin is to establish whether the driver meets all medical standards and guidelines in accordance with 49 CFR 391.41(b)(1-13), other than the use of insulin to treat diabetes.

The examination is based on information provided by the driver (minimum 5-year history), objective data (physical examination), and additional testing requested by the medical examiner. Your assessment should reflect physical, psychological, and environmental factors.

Medical certification depends on a comprehensive medical assessment of overall health and informed medical judgment about the impact of single or multiple conditions on the whole person.

Key Points for Examination When the Driver Has Diabetes Mellitus and Uses Insulin

This physical examination starts the Federal Diabetes Exemption Program application process. The medical examiner evaluation guidelines (http://nrcme.fmcsa.dot.gov/documents/DMCertLet.pdf) stipulate

that the medical examiner review the 5-year medical history of the driver. The driver must provide a 5-year medical history for your review before you determine certification status.

The FMCSA Medical Examination Report form includes health history questions and physical examination checklists. Additional questions should be asked to supplement information requested on the form. You should ask about and document diabetes mellitus symptoms, blood glucose monitoring, insulin treatment, and history of hypoglycemic episodes.

It is your responsibility to determine if the driver meets all medical standards and guidelines, other than diabetes, in accordance with 49 CFR 391.41(b)(1-13). Any other medical problems or conditions that prevent a driver being certified by the medical examiner must be corrected BEFORE the driver submits an application to the Federal Diabetes Exemption Program.

Regulations — You must review and discuss with the driver any "yes" answers

Does the driver have diabetes mellitus or elevated blood glucose controlled by:

- Diet?
- Pills?
- Insulin?
    - Dosage?
    - Route?
    - Frequency?

Recommendations — Questions that you may ask include

Does the driver:

- Newly started on insulin have documentation of completion of minimum waiting period?
- With a valid Federal diabetes exemption have documentation of compliance with program requirements for specialist evaluation?
- Routinely monitor blood glucose level and have device record for review?
- Use over-the-counter medications and/or supplements?
- Use an incretin mimetic?
- Have a history of fainting, dizziness, or loss of consciousness?
- Have a history of hypoglycemic reactions that resulted in:
    - Seizure?
    - Loss of consciousness?
    - Need of assistance from another person?
    - Period of impaired cognitive function that occurred without warning?
- Carry rescue glucose while driving?

NOTE: *When the driver has a positive history for severe hypoglycemic reactions, ask about occurrences, including has the driver had:*

- *One or more occurrences within last 12 months?*
- *Two or more occurrences within last 5 years?*

Regulations — You must evaluate

On examination, does the driver have:

- Glycosuria (dip stick urinalysis)?
- Signs of target organ damage associated with dysfunction of the senses, including:
  - Retinopathy?
  - Macular degeneration?
  - Peripheral neuropathy?
- Signs of target organ damage that can cause gradual or sudden incapacitation, including:
  - Coronary heart disease?
  - Cerebrovascular disease, including:
    - Transient ischemic attack?
    - Embolic or thrombotic stroke?
    - Peripheral vascular disease?
  - Autonomic neuropathy?
  - Nephropathy?

State-issued Medical Waivers and Exemptions

It is important that as a medical examiner you distinguish between intrastate waivers/exemptions and Federal diabetes exemptions for insulin-treated diabetes mellitus.

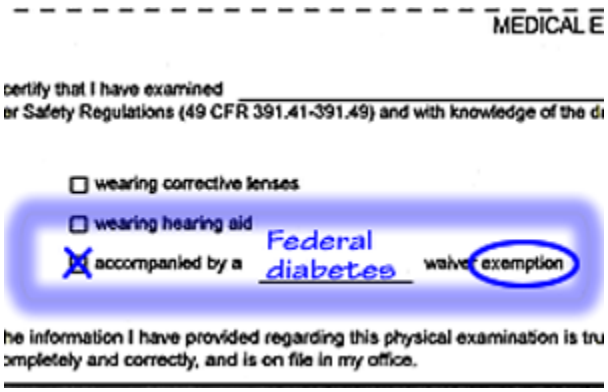
Record

Regulations — You must document discussion with the driver about:

- Any affirmative history, including if available:
  - Onset date, diagnosis.
  - Medication(s), dose, and frequency.
  - Any current limitation(s).
- Potential negative effects of medication use, including over-the-counter medications, while driving.
- Any abnormal finding(s), noting:
  - Effect on driver ability to operate a CMV safely.
  - Advice to take the necessary steps to correct the condition as soon as possible particularly if the condition, if neglected, could result in more serious illness that might affect driving.
- Any additional medical tests and evaluation.

When documenting the certification of the driver with diabetes mellitus who uses insulin, ensure that the Medical Examination Report form periodic monitoring interval and the Medical Examiner's Certificate expiration date agree and do not exceed 1 year. When the driver has or must obtain a Federal diabetes exemption:

- Mark the "accompanied by a _____" exemption checkbox.
- Write "Federal diabetes" on the line.
- Circle "exemption."


MEDICAL E

certify that I have examined _____
er Safety Regulations (49 CFR 391.41-391.49) and with knowledge of the di

☐ wearing corrective lenses

☐ wearing hearing aid

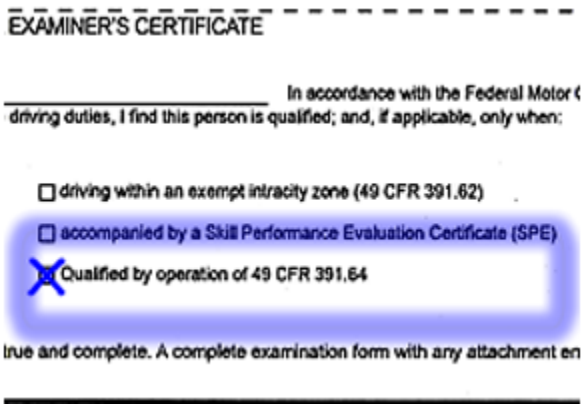
☒ accompanied by a Federal diabetes waiver exemption

he information I have provided regarding this physical examination is tru
ompletely and correctly, and is on file in my office.

Figure 24 - Medical Examination Report: Federal Diabetes Exemption

In the case of the driver who has documentation of having been a participant in good standing in the Federal diabetes study on March 31, 1996, mark the "Qualified by operation of 49 CFR 391.64" checkbox.

NOTE: *Proof of grandfathered status is the original letter from 1996 granting the right to continue to drive as long as the driver can meet physical qualification requirements. If a letter is not provided, you may verify driver participation in the study program—and the driver can obtain a new copy of the letter—by calling the FMCSA Exemption Program Office at 703-448-3094.*


EXAMINER'S CERTIFICATE

_____ In accordance with the Federal Motor C
driving duties, I find this person is qualified; and, if applicable, only when:

☐ driving within an exempt intracity zone (49 CFR 391.62)

☐ accompanied by a Skill Performance Evaluation Certificate (SPE)

☒ Qualified by operation of 49 CFR 391.64

true and complete. A complete examination form with any attachment en

Figure 25 - Medical Examination Report: Grandfathered Status

REMEMBER: *The diabetes qualification standard parameter is use of insulin, not the diagnosis of diabetes mellitus.*

Appendix C: Skill Performance Evaluation

Fixed Deficit of an Extremity

When the loss of (hand, foot, leg, or arm) or a fixed impairment to an extremity may interfere with the ability of the driver to operate a commercial motor vehicle (CMV) safely, you are responsible for determining if the driver is otherwise medically fit to drive. A driver may be allowed to drive if the qualification requirements for a Skill Performance Evaluation (SPE) certificate under 49 CFR 391.49 are met.

NOTE: *As a medical examiner, you determine if the severity of a fixed deficit that is less than the whole hand is medically disqualifying unless the driver has an SPE certificate pursuant to 49 CFR 391.49. The SPE is applicable only for fixed deficits of the extremities.*

In order to legally operate a CMV, the driver must carry an SPE certificate and a valid medical examiner's certificate. The driver is responsible for ensuring that both certificates are renewed prior to expiration.

Waiting period

No recommended time frame

The driver must be otherwise medically fit for duty before certification or recertification in accordance with 49 CFR 391.49.

Decision

Maximum certification period — 2 years

Recommend to certify (accompanied by an SPE) if:

The driver has:

- A fixed deficit of an extremity and is otherwise medically qualified at physical examination (required for both certification and recertification).
- A valid SPE certificate and documentation of compliance with medical requirements (required for recertification with a current SPE certificate).

NOTE: *The SPE applies only to fixed deficits of the extremities, not those caused by a progressive disease. To be certified, the driver with a deficit of an extremity caused by a progressive disease must meet 49 CFR 391.41 requirements, including adequate range of motion, strength, grip, and prehension to safely operate a CMV.*

Recommend not to certify if:

The driver has:

- An impairment that affects the torso.
- Not provided proof of compliance with SPE certification requirements.
- A disqualifying limb impairment caused by a progressive disease (e.g., multiple sclerosis).

NOTE: *The SPE applies only to fixed deficits of the extremities, not those caused by a progressive disease. The driver with a deficit of an extremity caused by a progressive disease must not be certified if the driver cannot meet 49 CFR 391.41 requirements.*

Recommend not to certify if:

Monitoring/Testing

SPE initial and renewal applications also require a medical evaluation summary completed by either a board qualified or board certified physiatrist or orthopedic surgeon. You should review the report at recertification for any medical changes before determining driver certification status.

Follow-up

The driver should have at least biennial physical examinations or more frequently when indicated. The driver is responsible for maintaining current medical and SPE certification.

Appendix D: Cardiovascular Recommendation Tables

The first publication of the Cardiovascular Recommendation Tables occurred in the October 2002, **Cardiovascular Advisory Panel Guidelines for the Medical Examination of Commercial Motor Vehicle Drivers,** FMCSA-MCP-02-002. To review this publication, visit:
http://www.fmcsa.dot.gov/facts-research/research-technology/publications/cardio.htm

Preface

The Federal Motor Carrier Safety Administration (FMCSA) has an ongoing process for reviewing all Federal medical standards and guidelines used to determine driver medical fitness for duty.

These tables will be updated when changes are made to FMCSA medical standards and guidelines. All proposed changes to the medical standards are subject to public notice-and-comment rulemaking.

As part of its review process, FMCSA considers medical evidence reports, medical expert panel (MEP) opinion, and Medical Review Board (MRB) recommendations. FMCSA also considers other factors such as feasibility and impact.

These tables do not include recommendations that have been submitted to FMCSA for consideration but not adopted by FMCSA. However, FMCSA posts copies of the medical evidence report executive summaries and MEP recommendations on the FMCSA Web page Reports - How Medical Conditions Impact Driving found at http://www.fmcsa.dot.gov/rules-regulations/topics/mep/mep-reports.htm

Reports of MRB proceedings are posted on the MRB Web site at http://www.mrb.fmcsa.dot.gov/proceedings.aspx, and the MRB public meeting schedule at http://www.mrb.fmcsa.dot.gov/.

Medical examiners may submit questions or comments to the FMCSA Office of Medical Programs by sending an email to fmcsamedical@dot.gov.

ANEURYSMS 2002 Cardiovascular Conference Report Recommendation Tables, Page 145			
DIAGNOSIS	**PHYSIOLOGY/ FUNCTIONAL**	**CERTIFICATION**	**RE-CERTIFICATION**
Abdominal Aortic Aneurysm (AAA)	Evaluate for associated cardiovascular diseases.		
	Aneurysm < 4.0 cm.	Yes, if asymptomatic.	Annual
	Aneurysm 4.0 to <5.0 cm. Ultrasound to identify change in size.	Yes if: Asymptomatic; Cleared by vascular specialist.	Annual Ultrasound for change in size.
		No, if: Symptomatic; Surgery recommended by vascular specialist.	
		Yes if: At least 3 months after surgical repair. Cleared by cardiovascular specialist.	Annual
	Aneurysm > 5.0 cm.	No.	
		Yes if: At least 3 months after surgical repair. Cleared by cardiovascular specialist.	Annual
Thoracic Aneurysm	Evaluate for associated cardiovascular diseases.	No, if >3.5cm.	
		Yes if: At least 3 months after surgical repair. Cleared by cardiovascular specialist.	Annual
Aneurysms of other vessels	Assess for risk of rupture and for associated cardiovascular diseases.	No	
		Yes if: At least 3 months after surgical repair. Cleared by cardiovascular specialist.	Annual

AORTIC CONGENITAL HEART DISEASE 2002 Cardiovascular Conference Report Recommendation Tables, Page 122			
DIAGNOSIS	**PHYSIOLOGY/ FUNCTIONAL**	**CERTIFICATION**	**RE-CERTIFICATION**
Bicuspid Aortic Valve	May result in aortic stenosis or regurgitation (see section on Valvular Diseases), aortic root enlargement, aortic aneurysm formation and aortic rupture.	See section on Valvular Diseases. No if: Aortic transverse diameter > 5.5 cm. Yes if: Surgical intervention successfully performed.	See section on Valvular Diseases. Annual
Subvalvular Aortic Stenosis	Mild = favorable Has potential for progression. Moderate or severe = unfavorable.	Yes if: No valvular abnormality or hypertrophic cardiomyopathy. No if: Symptomatic and mean pressure gradient >30 mm Hg. Yes if: At least 3 months after successful surgical resection when cleared by cardiologist knowledgeable in congenital heart disease.	Annual Evaluation by cardiologist knowledgeable in adult congenital heart disease is require. Annual Evaluation by cardiologist knowledgeable in adult congenital heart disease required, including echocardiogram.
Discrete Supravalvular Aortic Stenosis	Unfavorable prognosis due to associated coronary and aortic disorder.	No, unless surgery. Yes if: At least 3 months post surgical intervention; Cleared by cardiologist knowledgeable in adult congenital heart disease.	Annual Evaluation by cardiologist knowledgeable in adult congenital heart disease is recommended.

AORTIC CONGENITAL HEART DISEASE (Continued) 2002 Cardiovascular Conference Report Recommendation Tables, Page 122			
DIAGNOSIS	**PHYSIOLOGY/ FUNCTIONAL**	**CERTIFICATION**	**RE-CERTIFICATION**
Marfan Syndrome	Cardiovascular disorders are the major cause of morbidity and mortality including risk of sudden death.	Yes if: No cardiovascular involvement. No if: Any aortic root enlargement; moderate or more severe aortic regurgitation; > mild mitral regurgitation related to mitral valve prolapse; LV dysfunction with EF <40% and no associated valve disease.	Annual Evaluation by cardiologist knowledgeable in adult congenital heart disease required including aortic root imaging and echocardiography.

AORTIC REGURGITATION 2002 Cardiovascular Conference Report Recommendation Tables, Page 79			
DIAGNOSIS	**PHYSIOLOGY/ FUNCTIONAL**	**CERTIFICATION**	**RE-CERTIFICATION**
Mild Aortic Regurgitation		Yes, if asymptomatic.	Annual Echocardiogram every 2 to 3 years.
Moderate Aortic Regurgitation		Yes if: Normal LV function; No or mild LV enlargement.	Annual Echocardiogram every 2 to 3 years.
Severe Aortic Regurgitation		Yes if: Asymptomatic; Normal LV function (EF = 50%); LV dilatation (LVEDD < 60mm, LVESD < 50mm).	Every 6 months. Echocardiogram every 6 to 12 months.
		If LVEDD = 60mm or LVESD = 50mm.	Every 4 - 6 months. Echocardiogram every 4 - 6 months if no surgery performed.
		No if: Symptoms, Unable to complete Bruce protocol Stage II, Reduced EF < 50%, LV dilatation LVEDD > 70mm or LVESD > 55mm.	
		Yes if: Valve surgery and at least 3 months post surgery. Asymptomatic; cleared by cardiologist.	Annual

EF=Ejection fraction
LVESD=Left ventricular end-systolic dimension
LVEDD=Left ventricular end-diastolic dimension

AORTIC STENOSIS 2002 Cardiovascular Conference Report Recommendation Tables, Page 78			
DIAGNOSIS	**PHYSIOLOGY/ FUNCTIONAL**	**CERTIFICATION**	**RE-CERTIFICATION**
Mild Aortic Stenosis (AVA > 1.5 cm^2)	If symptoms are consistent with aortic stenosis but calculated valve area suggests mild aortic stenosis, the severity of the stenosis and an alternative explanation for symptoms needs to be reassessed.	Yes, if asymptomatic.	Annual Echocardiogram every 5 years.
Moderate Aortic Stenosis (AVA $\geq$1.0-1.5 cm^2)		Yes, if asymptomatic. Yes if: At least 3 months after surgery. No if: Angina, Heart failure, Syncope; Atrial fibrillation; LV dysfunction with EF <50%; Thromboembolism.	Annual Echocardiogram every 1 to 2 years. Annual
Severe Aortic Stenosis (AVA <1.0 cm^2)		No, irrespective of symptoms or LV function. Yes, if at least 3 months after surgery.	 Annual

AVA = aortic valve area

ATRIAL SEPTAL DEFECTS 2002 Cardiovascular Conference Report Recommendation Tables, Page 124			
DIAGNOSIS	**PHYSIOLOGY/ FUNCTIONAL**	**CERTIFICATION**	**RE-CERTIFICATION**
Atrial Septal Defect (ASD): Ostium Secundum	Small ASD = favorable.	Yes if: Asymptomatic.	Annual Evaluation by cardiologist knowledgeable in congenital heart disease including echocardiogram.
	Moderate to large ASD = unfavorable.	No if: Symptoms of dyspnea, palpitations or a paradoxical embolus; Pulmonary hypertension; Right-to-left shunt; or Pulmonary to systemic flow ratio > 1.5 to 1.	
		Yes if: At least 3 months after surgery or at least 4 weeks after device closure; asymptomatic and clearance by cardiologist knowledgeable in adult congenital heart disease.	Annual Evaluation by cardiologist knowledgeable in adult congenital heart disease every 2 years.

ATRIAL SEPTAL DEFECTS (Continued) 2002 Cardiovascular Conference Report Recommendation Tables, Page 125			
DIAGNOSIS	**PHYSIOLOGY/ FUNCTIONAL**	**CERTIFICATION**	**RE-CERTIFICATION**
Atrial Septal Defect (ASD): Ostium Primum	Small ASD = favorable prognosis.	Yes, if: Asymptomatic.	Annual Evaluation by cardiologist knowledgeable in adult congenital heart disease required including echocardiogram.
	Moderate to large ASD = unfavorable prognosis	No if: Symptoms of dyspnea, palpitations or a paradoxical embolus; Echo-Doppler demonstrates pulmonary artery pressure > 50% systemic; Echo-Doppler demonstrates right-to-left shunt; Pulmonary to systemic flow ratio greater than 1.5 to 1; Heart block on an electrocardiogram; More than mild mitral valve regurgitation; Left ventricular outflow tract obstruction with a gradient >30 mm Hg.	
		Yes if: At least 3 months after surgical intervention if none of the above disqualifying criteria; No symptomatic arrhythmia and no significant residual shunt; Cleared by cardiologist knowledgeable in adult congenital heart disease.	Annual Evaluation by cardiologist knowledgeable in adult congenital heart disease.

ATRIAL SEPTAL DEFECTS (Continued) 2002 Cardiovascular Conference Report Recommendation Tables, Page 126			
DIAGNOSIS	**PHYSIOLOGY/ FUNCTIONAL**	**CERTIFICATION**	**RE-CERTIFICATION**
Sinus Venosus Atrial Septal Defect	Usually associated with anomalous pulmonary venous connection. Prognosis depends on size of atrial septal defect. Commonly associated with sinus node dysfunction, particularly after surgery.	Yes if: Small shunt and hemodynamically insignificant.	Annual Evaluation by cardiologist knowledgeable in adult congenital heart disease.
		No if: Symptoms of dyspnea, palpitations or a paradoxical embolus; Echo-Doppler examination demonstrating pulmonary artery pressure greater than 50% systemic; Echo-Doppler examination demonstrating a right-to-left shunt; A pulmonary to systemic flow ratio greater than 1.5 to 1; Heart block or sinus node dysfunction on an electrocardiogram.	
		Yes if: At least 3 months after surgical intervention; Hemodynamics are favorable; Cleared by cardiologist knowledgeable in adult congenital heart disease.	Annual Evaluation by cardiologist knowledgeable in adult congenital heart disease, including Holter Monitor.

BUNDLE BRANCH BLOCKS AND HEMIBLOCKS 2002 Cardiovascular Conference Report Recommendation Tables, Page 100			
DIAGNOSIS	**PHYSIOLOGY/ FUNCTIONAL**	**CERTIFICATION**	**RE-CERTIFICATION**
Bundle Branch Block Axis Deviation	Progression of disease in the conduction system can lead to third degree heart block with total loss of electrical connection between the atria and ventricles causing syncope or sudden death.	Yes if: Asymptomatic. (Depends on risk from underlying heart disease.) Yes, if treated for symptomatic disease (see pacemaker); No disqualifying heart disease; Cleared by cardiologist. No, if symptomatic.	Every 2 years. Annual

CARDIOMYOPATHIES AND CONGESTIVE HEART FAILURE (CHF) 2002 Cardiovascular Conference Report Recommendation Tables, Page 82			
DIAGNOSIS	**PHYSIOLOGY/ FUNCTIONAL**	**CERTIFICATION**	**RE-CERTIFICATION**
Hypertrophic Cardiomyopathy		No	
Idiopathic Dilated Cardiomyopathy and Congestive Heart Failure		No, if symptomatic CHF.	
		No if: Asymptomatic; Ventricular arrhythmias present; and LVEF ≤50%.	
		No if: Asymptomatic; No ventricular arrhythmias; LVEF < 40%.	
		Yes if: Asymptomatic; No ventricular arrhythmias; and LVEF 40% to 50%.	Annual Requires annual cardiology evaluation including Echocardiography and Holter monitoring.
Restrictive cardiomyopathy		No	

COMMERCIAL DRIVERS WITH KNOWN CORONARY HEART DISEASE (CHD) 2002 Cardiovascular Conference Report Recommendation Tables, Page 36			
DIAGNOSIS	**PHYSIOLOGY/ FUNCTIONAL**	**CERTIFICATION**	**RE-CERTIFICATION**
Post Myocardial Infarction (MI)	Risk of recurrent major cardiac event highest within the first months post-MI; Drivers in a rehabilitation program can receive comprehensive secondary prevention therapy.	No if: Recurrent angina symptoms; Post-MI ejection fraction <40% (by echocardiogram or ventriculogram); Abnormal ETT demonstrated prior to planned work return; Ischemic changes on rest ECG; Poor tolerance to current cardiovascular medications. Yes if: At least 2 months post-MI; Cleared by cardiologist; No angina; Post-MI ejection fraction ≥40% (by echocardiogram or ventriculogram); Tolerance to current cardiovascular medications.	Annual Biennial ETT at minimum (If test positive or inconclusive, imaging stress test may be indicated); Cardiologist examination recommended.
Angina Pectoris	Lower end of spectrum among CHD patients for risk of adverse clinical outcomes. Condition usually implies at least one coronary artery has hemodynamically significant narrowing.	Yes, if asymptomatic. No if: Rest angina or change in angina pattern within 3 months of examination; Abnormal ETT; Ischemic changes on rest ECG; Intolerance to cardiovascular therapy.	Annual Biennial ETT at minimum (If test positive or inconclusive, imaging stress test may be indicated). Cardiologist examination recommended.

COMMERCIAL DRIVERS WITH KNOWN CORONARY HEART DISEASE (CHD) (Continued) 2002 Cardiovascular Conference Report Recommendation Tables, Page 37			
DIAGNOSIS	**PHYSIOLOGY/ FUNCTIONAL**	**CERTIFICATION**	**RE-CERTIFICATION**
Post Percutaneous Coronary Intervention (PCI)	Rapid recovery for elective PCIs for stable angina. Delayed re-stenosis is the major PCI limitation and requires intensive secondary prevention.	Yes if: At least 1 week after procedure; Approval by cardiologist; Tolerance to medications. ETT 3 to 6 months after PCI. No if: Incomplete healing or complication at vascular access site; Rest angina; Ischemic ECG changes.	Annual Recommend Cardiologist examination. Biennial ETT at minimum (If test positive or inconclusive, imaging stress test may be indicated).
Post Coronary Artery Bypass Surgery (CABG)	Delay in return to work to allow sternal incision healing. Because of increasing risk of graft closure over time, ETT is obtained.	Yes if: At least 3 months after CABG; LVEF > 40% post CABG; Approval by cardiologist; Asymptomatic; and tolerance to medications.	Annual After 5 years: Annual ETT. Imaging stress test may be indicated.

COMMERCIAL DRIVERS WITHOUT KNOWN CORONARY HEART DISEASE (CHD) 2002 Cardiovascular Conference Report Recommendation Tables, Page 35			
DIAGNOSIS	**PHYSIOLOGY/ FUNCTIONAL**	**CERTIFICATION**	**RE-CERTIFICATION**
Asymptomatic, healthy	Low CHD event risk. Assess for clinically apparent risk factors. Use, when possible, Framingham risk score model to predict 10-year CHD event risk; Increasing age is a surrogate marker for increasing atherosclerotic plaque burden.	Yes, if asymptomatic. Rarely disqualifying alone.	Biennial
Asymptomatic, high risk person (as designated by CHD risk-equivalent condition)* Asymptomatic, high risk person > 45 years with multiple risk factors for CHD	Sub-clinical coronary atherosclerosis is a concern. High-risk status requires close physician follow-up and aggressive comprehensive risk factor management.	Yes, if asymptomatic. No if: Abnormal ETT;** Ischemic changes on ECG; † Functional incapacitation by one of conditions.	Annual

*CHD risk equivalent is defined as presence of diabetes mellitus, peripheral vascular disease, or Framingham risk score predicting a 20% CHD event risk over the next 10 years.

** Abnormal Exercise Tolerance Test (ETT) is defined by an inability to exceed 6 METS (beyond completion of Stage II, or 6 minutes) on a standard Bruce protocol or the presence of ischemic symptoms and/or signs (e.g., characteristic angina pain or 1 mm ST depression or elevation in 2 or more leads), inappropriate SBP and/or heart rate responses (e.g., inability in the maximal heart rate to meet or exceed 85% of age-predicted maximal heart rate), or ventricular dysrhythmia.

† Ischemic ECG changes are defined by the presence of new 1 mm ST-segment elevation or depression and/or marked T wave abnormality.

CONGENITAL HEART DISEASE 2002 Cardiovascular Conference Report Recommendation Tables, Page 128			
DIAGNOSIS	**PHYSIOLOGY/ FUNCTIONAL**	**CERTIFICATION**	**RE-CERTIFICATION**
Patent Ductus Arteriosus (PDA)	Small = favorable. Moderate to large = unfavorable.	Yes, if small shunt. No if: Symptoms of dyspnea or palpitations; Pulmonary hypertension; Right to left shunt; Progressive LV enlargement or decreased systolic function. Yes if: At least 3 months after surgery or 1 month after device closure; None of above disqualifying criteria; Cleared by cardiologist knowledgeable in adult congenital heart disease.	Annual Annual Should have evaluation by cardiologist knowledgeable in adult congenital heart disease.
Coarctation of the Aorta	Mild = favorable. Moderate or severe = unfavorable prognosis.	Yes if: Mild and unoperated; BP controlled; and No associated disqualifying disease. No	Annual Evaluation by cardiologist knowledgeable in adult congenital heart disease recommended.
Coarctation of the Aorta after intervention	Unfavorable prognosis with persistent risk of cardiovascular events.	Yes, if perfect repair (see text p. 115 and 116).	Annual Evaluation by cardiologist knowledgeable in adult congenital heart disease required.

CONGENITAL HEART DISEASE (Continued) 2002 Cardiovascular Conference Report Recommendation Tables, Page 129			
DIAGNOSIS	**PHYSIOLOGY/ FUNCTIONAL**	**CERTIFICATION**	**RE-CERTIFICATION**
Pulmonary Valve Stenosis (PS)	Mild and moderate = favorable.	Yes, if mild or moderate.	Annual Evaluation by cardiologist knowledgeable in adult congenital heart disease.
	Severe PS may be unfavorable, associated with arrhythmias and rarely sudden death.	No if Symptoms of dyspnea, palpitations or syncope; Pulmonary valve peak gradient >50 mm Hg with normal output; RV pressuve >50% systemic pressure; >mile RVH; >mild RV dysfunction; >moderate pulmonary valve regurgitation; or main pulmonary artery >5cm.	
		Yes if: 3 months after surgical valvotomy or 1 month after balloon valvuloplasty; None of above disqualifying criteria; Cleared by cardiologist knowledgeable in adult congenital heart disease.	Annual Recommend evaluation by cardiologist knowledgeable in adult congenital heart disease.
Other causes of right ventricular outflow obstruction in persons with congenital heart disease.	Double chambered right ventricle. Infundibular pulmonary stenosis. Supravalvar pulmonary stenosis. Pulmonary artery stenosis.	Yes if: Hemodynamic data and criteria similar to individuals with isolated pulmonary valve stenosis who are eligible for certification.	Annual Recommend evaluation by cardiologist knowledgeable in adult congenital heart disease.

CONGENITAL HEART DISEASE (Continued) 2002 Cardiovascular Conference Report Recommendation Tables, Page 130			
DIAGNOSIS	**PHYSIOLOGY/ FUNCTIONAL**	**CERTIFICATION**	**RE-CERTIFICATION**
Ebstein anomaly	Mild = favorable.	Yes if: Mild; Asymtomatic; No intracardiac lesions; No shunt; No symptomatic arrhythmia or accessory conduction; Only mild cardiac enlargement; Only mild RV dysfunction.	Annual Evaluation by cardiologist knowledgeable in adult congenital heart disease.
	Moderate and severe variants = unfavorable.	No if: (see text, p. 117)	
		Yes if: At least 3 months post-surgical intervention; None of above disqualifying features.	Annual Echocardiogram and evaluation by cardiologist knowledgeable in adult congenital heart disease required.
Tetralogy of Fallot	Unfavorable in the unrepaired state.	No, if uncorrected.	
	Repaired = variable prognosis.	Yes if: Excellent result obtained from surgery; Asymptomatic; No significant pulmonary or tricuspid valve regurgitation; No pulmonary stenosis; No history of arrhythmias; No residual shunt.	Annual Evaluation by cardiologist knowledgeable in adult congenital heart disease required, including EKG, 24 hour Holter Monitor, exercise testing, Doppler Echocardiogram.

CONGENITAL HEART DISEASE (Continued) 2002 Cardiovascular Conference Report Recommendation Tables, Page 131			
DIAGNOSIS	**PHYSIOLOGY/ FUNCTIONAL**	**CERTIFICATION**	**RE-CERTIFICATION**
Transposition of the Great Vessels	Unfavorable if uncorrectable.	No	
	Atrial switch repair (Mustard or Senning procedures). Unfavorable long-term prognosis.	No	
	After Rastelli repair.	Yes if: Asymptomatic and excellent result obtained from surgery (see text). No if: (see text p. 119).	Annual Evaluation by cardiologist knowledgeable in adult congenital heart disease.
	After arterial switch repair, prognosis appears favorable.	No (Data currently not sufficient to support qualification in this group).	

CONGENITAL HEART DISEASE (Continued) 2002 Cardiovascular Conference Report Recommendation Tables, Page 132			
DIAGNOSIS	**PHYSIOLOGY/ FUNCTIONAL**	**CERTIFICATION**	**RE-CERTIFICATION**
Congenitally corrected transposition	95% have associated intracardiac lesions. Conduction system is inherently abnormal.	Yes if: None of below disqualifying criteria.	Annual Required annual evaluation by cardiologist knowledgeable in adult congenital heart disease, includes echocardiography and 24 hour Holter Monitor.
		No if: Symptoms of dyspnea, palpitations, syncope or paradoxical embolus; Intracardiac lesion such as VSD; >moderate pulmonary stenosis with a pulmonary ventricular pressure >50% systemic; >mild RV or LV enlargement or dysfunction; Moderate or greater tricuspid valve (systemic atrioventricular valve) regurgitation; History of atrial or ventricular arrhythmia; ECG with heart block; or Right-to-left shunt or significant residual left-to-right shunt.	
		Yes if: At least 3 months after surgery; None of above disqualifying criteria; Prosthetic valve - must meet requirements for that valve; Cleared by cardiologist knowledgeable in adult congenital heart disease.	Annual Evaluation by cardiologist knowledgeable in adult congenital heart disease.

HEART TRANSPLANTATION 2002 Cardiovascular Conference Report Recommendation Tables, Page 154			
DIAGNOSIS	**PHYSIOLOGY/ FUNCTIONAL**	**CERTIFICATION**	**RE-CERTIFICATION**
Heart Transplantation	Special attention to: Accelerated atherosclerosis, transplant rejection, general health.	Yes if: At least 1 year post-transplant; asymptomatic; stable on medications; no rejection; Consent from cardiologist to drive commercially.	Biannual Clearance by cardiologist required.

HYPERTENSION 2002 Cardiovascular Conference Report Recommendation Tables, Page 55			
DIAGNOSIS	**PHYSIOLOGY/ FUNCTIONAL**	**CERTIFICATION**	**RE-CERTIFICATION**
Essential Hypertension	Evaluate for other clinical CVD including TOD†; Presence of TOD, CVD or diabetes may affect therapy selected.	Yes, if asymptomatic. Rarely disqualifying alone.	
Stage 1 (140-159/90-99 mm Hg)	Usually asymptomatic; Low risk for near-term incapacitating event.	Yes Rarely disqualifying alone.	Annual BP ≤140/90 at annual exam; If not, but <160/100, certification extended one time for 3 months.
Stage 2 (160-179/100-109 mm Hg)	Low risk for incapacitating event; risk increased in presence of TOD; Indication for pharmacologic therapy.	Yes One time certification for 3 months. Yes, at recheck if: BP ≤140/90mmHg Certify for 1 year from date of initial exam.	Annual BP ≤140/90.
Stage 3 (>180/110 mm Hg	High risk for acute hypertension-related event.	No Immediately disqualifying; Yes, at recheck if: BP ≤140/90 mm Hg; Treatment is well tolerated. Certify for 6 months from date of initial exam.	Every 6 months; BP ≤140/90.
Secondary Hypertension	Evaluation warranted if persistently hypertensive on maximal or near-maximal doses of 2-3 pharmacologic agents; May be amenable to surgical/specific therapy.	Based on above stages. Yes if: Stage 1 or nonhypertensive. At least 3 months after surgical correction.	Annual BP ≤140/90

† TOD – Target Organ Damage – Heart Failure, Stroke or Transient Ischemic Attack, Peripheral Artery Disease, Retinopathy, Left Ventricular Hypertrophy, Nephropathy. Examiner may disqualify a driver if TOD significantly impairs driver's work capacity. Driver should have no excess sedation or orthostatic change in BP.

IMPLANTABLE DEFIBRILLATORS 2002 Cardiovascular Conference Report Recommendation Tables, Page 104			
DIAGNOSIS	**PHYSIOLOGY/ FUNCTIONAL**	**CERTIFICATION**	**RE-CERTIFICATION**
Primary prevention	Patient has high risk for death and sudden incapacitation.	No	
Secondary prevention	Patient demonstrated to have high risk for death and sudden incapacitation.	No	

MITRAL REGURGITATION 2002 Cardiovascular Conference Report Recommendation Tables, Page 77			
DIAGNOSIS	**PHYSIOLOGY/ FUNCTIONAL**	**CERTIFICATION**	**RE-CERTIFICATION**
Mild Mitral Regurgitation		Yes if: Asymptomatic; Normal LV size and function;* Normal PAP.	Annual Annual echo not necessary.
Moderate Mitral Regurgitation		Yes if: Asymptomatic; Normal LV size and function; * Normal PAP.	Annual Annual Echocardiogram.
Severe Mitral Regurgitation		Yes, if asymptomatic. Yes if: At least 3 months post-surgery. Asymptomatic; cleared by cardiologist. No if: Symptomatic; Inability to achieve > 6 METS on Bruce protocol; Ruptured chordae or flail leaflet; Atrial fibrillation; LV dysfunction;* Thromboembolism; Pulmonary artery pressure 50% of systolic arterial pressure;	Annual Echocardiogram every 6-12 months. Exercise testing may be helpful to assess symptoms. Annual

EF = Ejection fraction; LVESD = Left ventricular end-systolic dimension
LVEDD = Left ventricular end-diastolic dimension;
PAP = Pulmonary artery pressure
*Measures include: LVEF <60%; LVESD ≥45mm; LVEDD ≥70mm

MITRAL STENOSIS 2002 Cardiovascular Conference Report Recommendation Tables, Page 76			
DIAGNOSIS	**PHYSIOLOGY/ FUNCTIONAL**	**CERTIFICATION**	**RE-CERTIFICATION**
*Mild Mitral Stenosis MVA $\geq$1.6 cm^2	In the presence of symptoms consistent with moderate to severe mitral stenosis but a calculated valve area suggesting mild mitral stenosis, the severity of the stenosis should be reassessed and an alternative explanation for symptoms should be considered.	Yes, if asymptomatic.	Annual
Moderate Mitral Stenosis MVA 1.0 to 1.6 cm^2		Yes, if asymptomatic.	Annual
Severe Mitral Stenosis MVA $\leq$ 1.0 cm^2		No if: NYHA Class II or higher; Atrial fibrillation; Pulmonary artery pressure >50% of systemic pressure; Inability to exercise for >6 Mets on Bruce protocol (Stage II).	
		Yes if: At least 4 weeks post percutaneous balloon mitral valvotomy; or At least 3 months post surgical commissurotomy; Clearance by cardiologist.	Annual Annual evaluation by a cardiologist.

MVA = mitral valve area
*See text p.61 for additional echocardiogram criteria.

PACEMAKERS 2002 Cardiovascular Conference Report Recommendation Tables, Page 101			
DIAGNOSIS	**PHYSIOLOGY/ FUNCTIONAL**	**CERTIFICATION**	**RE-CERTIFICATION**
Sinus node dysfunction	Variable long term prognosis depending on underlying disease, but cerebral hypoperfusion corrected by support of heart rate by pacemaker.	No Yes if: 1 month after pacemaker implantation; and documented correct function by pacemaker center. Underlying disease is not disqualifying.	Annual Documented pacemaker checks.
Atrioventricular (AV) block	Variable long term prognosis depending on underlying disease, but cerebral hypoperfusion corrected by support of heart rate by pacemaker.	No Yes if: 1 month after pacemaker implantation and documented correct function by pacemaker center; Underlying disease is not disqualifying.	Annual Documented pacemaker checks.

PACEMAKERS (Continued) 2002 Cardiovascular Conference Report Recommendation Tables, Page 102			
DIAGNOSIS	**PHYSIOLOGY/ FUNCTIONAL**	**CERTIFICATION**	**RE-CERTIFICATION**
Neurocardiogenic Syncope	Excellent long-term survival prognosis but there is risk for syncope that may be due to cardioinhibitory (slowing heart rate) or vasodepressor (drop in blood pressure) components, or both. Pacemaker will affect only cardioinhibitory component, but will lessen effect of vasodepressor component.	No, with symptoms. Yes if: 3 months* after pacemaker implantation; Documented correct function by pacemaker center; Absence of symptom recurrence.	Annual Documented pacemaker checks; Absence of symptom recurrence

*Three months recommended due to possible vasodepressor component of syndrome not necessarily treated by pacing.

PACEMAKERS (Continued) 2002 Cardiovascular Conference Report Recommendation Tables, Page 103			
DIAGNOSIS	**PHYSIOLOGY/ FUNCTIONAL**	**CERTIFICATION**	**RE-CERTIFICATION**
Hypersensitive carotid sinus with syncope	Excellent long-term survival prognosis but there is risk for syncope that may be due to cardioinhibitory (slowing heart rate) or vasodepressor (drop in blood pressure) components, or both. Pacemaker will affect only cardioinhibitory component, but will lessen effect of vasodepressor component.	No, with symptoms. Yes if: 3 months* after pacemaker implantation; and documented correct function by pacemaker center; Absence of symptom recurrence.	Annual Documented regular pacemaker checks; and Absence of symptom recurrence

*Three months recommended due to possible vasodepressor component of syndrome not necessarily treated by pacing.

PERIPHERAL VASCULAR DISEASE 2002 Cardiovascular Conference Report Recommendation Tables, Page 146			
DIAGNOSIS	**PHYSIOLOGY/ FUNCTIONAL**	**CERTIFICATION**	**RE-CERTIFICATION**
Peripheral Vascular Disease (PVD)	Evaluate for associated cardiovascular diseases.	Yes, if no other disqualifying cardiovascular condition.	Annual
Intermittent Claudication	Most common presenting manifestation of occlusive arterial disease.	Yes if: At least 3 months after surgery; Relief of symptoms; No other disqualifying cardiovascular disease.	Annual
	Rest pain.	No, if symptoms.	
		Yes if: At least 3 months after surgery; Relief of symptoms and signs; No other disqualifying cardiovascular disease.	Annual

SUPRAVENTRICULAR TACHYCARDIAS 2002 Cardiovascular Conference Report Recommendation Tables, Page 96			
DIAGNOSIS	**PHYSIOLOGY/ FUNCTIONAL**	**CERTIFICATION**	**RE-CERTIFICATION**
Atrial Fibrillation			
Lone Atrial Fibrillation	Good prognosis and low risk for stroke.	Yes	Annual
Atrial fibrillation as cause of or a risk for stroke	Risk for stroke decreased by anticoagulation.	Yes if: Anticoagulated adequately for at least 1 month; Anticoagulation monitored by at least monthly INR; Rate/rhythm control deemed adequate (Recommend assessment by cardiologist).	Annual
Atrial fibrillation following thoracic surgery	Good prognosis and duration usually limited.	In atrial fibrillation at time of return to work; Yes if: Anticoagulated adequately for at least 1 month; Anticoagulation monitored by at least monthly INR; Rate/rhythm control deemed adequate (Recommend assessment by cardiologist).	Annual

SUPRAVENTRICULAR TACHYCARDIAS (Continued) 2002 Cardiovascular Conference Report Recommendation Tables, Page 97			
DIAGNOSIS	**PHYSIOLOGY/ FUNCTIONAL**	**CERTIFICATION**	**RE-CERTIFICATION**
Atrial flutter	Same as for atrial fibrillation.	Same as for atrial fibrillation. Yes if: Isthmus ablation performed and at least 1 month after procedure; Arrhythmia successfully treated; Cleared by electrophysiologist.	Same as for atrial fibrillation. Annual
Multifocal Atrial Tachycardia	Often associated with comorbidities, such as lung disease, that may impair prognosis.	Yes if: Asymptomatic; Unless associated condition is disqualifying. No, if symptomatic. Yes if: Symptoms controlled and secondary cause is not exclusionary.	Annual Annual.
Atrioventricular Nodal Reentrant Tachycardia (AVNRT) Atrioventricular Reentrant Tachycardia (AVRT) and Wolff-Parkinson-White (WPW) Syndrome Atrial Tachycardia Junctional Tachycardia	Prognosis generally excellent, but may rarely have syncope or symptoms of cerebral hypoperfusion. For those with WPW, pre-excitation presents risk for death or syncope if atrial fibrillation develops.	No if: Symptomatic; or WPW with atrial fibrillation. Yes if: Asymptomatic; Treated and asymptomatic for at least 1 month and assessed and cleared by expert in cardiac arrhythmias.	Annual Recommend consultation with cardiologist

VALVE REPLACEMENT 2002 Cardiovascular Conference Report Recommendation Tables, Page 80			
DIAGNOSIS	**PHYSIOLOGY/ FUNCTIONAL**	**CERTIFICATION**	**RE-CERTIFICATION**
Mechanical Valves		Yes if: At least 3 months post-op; Asymptomatic; Cleared by cardiologist. No if: Symptomatic; LV dysfunction-EF < 40%; Thromboembolic complication post procedure; Pulmonary hypertension; Unable to maintain adequate anticoagulation (based on monthly INR checks).	Annual Recommend evaluation by cardiologist.*
	Prosthetic valve dysfunction.	No Yes if: Surgically corrected; At least 3 months post-op; Asymptomatic; Cleared by cardiologist.	Annual Recommend evaluation by cardiologist.*

* Role of annual echocardiography in stable patients is controversial.

VALVE REPLACEMENT (Continued) 2002 Cardiovascular Conference Report Recommendation Tables, Page 81			
DIAGNOSIS	**PHYSIOLOGY/ FUNCTIONAL**	**CERTIFICATION**	**RE-CERTIFICATION**
	Atrial fibrillation.	Yes if: Anticoagulated adequately for at least 1 month and monitored by at least monthly INR, rate/rhythm control adequate; Cleared by cardiologist.	Annual
Biologic Prostheses	Antiocoagulant therapy not necessary in patients in sinus rhythm (after initial 3 mo0nths), in absence of prior emboli or hypercoagulable state.	Yes if: At least 3 months post-op; Asymptomatic; None of above disqualifying criteria for mechanical valves; Cleared by cardiologist.	Annual Recommend evaluation by cardiologist.*

VENOUS DISEASE 2002 Cardiovascular Conference Report Recommendation Tables, Page 147			
DIAGNOSIS	**PHYSIOLOGY/ FUNCTIONAL**	**CERTIFICATION**	**RE-CERTIFICATION**
Acute Deep Vein Thrombosis (DVT)		No, if symptoms. Yes if: No residual acute deep venous thrombosis; If on Coumadin: Regulated for at least 1 month; INR monitored at least monthly.	Annual
Superficial Phlebitis		Yes if: DVT ruled out; No other disqualifying cardiovascular disease.	Biennial
Pulmonary Embolus		No, if symptoms. Yes if: No pulmonary embolism for at least 3 months; On appropriate long-term treatment. If on Coumadin: Regulated for at least 1 month; INR monitored at least monthly; No other disqualifying cardiovascular disease.	Annual
Chronic Thrombotic Venous Disease		Yes, if no symptoms.	Biennial
Varicose veins		Yes, if no complications.	Biennial
Coumadin	Use of INR required.	Yes if: Stabilized for 1 month; INR monitored at least monthly.	Annual

VENTRICULAR ARRHYTHMIAS 2002 Cardiovascular Conference Report Recommendation Tables, Page 98			
DIAGNOSIS	**PHYSIOLOGY/ FUNCTIONAL**	**CERTIFICATION**	**RE-CERTIFICATION**
Coronary Heart Disease (CHD)	Sustained VT: Poor prognosis and high risk.	No	
	NSVT, LVEF < 0.40: Unfavorable prognosis.	No	
	NSVT, LVEF ≥0.40: Generally considered to have good prognosis.	No, if symptomatic.	
		Yes if: Asymptomatic. At least 1 month after drug or other therapy is successful; Cleared by cardiologist.	Annual Cardiology examination required.
Dilated Cardiomyopathy	NSVT (LVEF ≤ 0.40).	No	
	Sustained VT, any LVEF.	No	
	Syncope/near syncope, any LVEF: High risk.	No	
Hypertrophic Cardiomyopathy	Variable but uncertain prognosis.	No	

VENTRICULAR ARRHYTHMIAS (Continued) 2002 Cardiovascular Conference Report Recommendation Tables, Page 99			
DIAGNOSIS	**PHYSIOLOGY/ FUNCTIONAL**	**CERTIFICATION**	**RE-CERTIFICATION**
Right Ventricular Outflow VT	Favorable prognosis and low risk for syncope.	No, if symptomatic. Yes, if asymptomatic. Yes if: At least 1 month after drug or other therapy successful; Asymptomatic; Cleared by electrophysiologist.	 Annual Recommend evaluation by cardiologist. Annual Evaluation by cardiologist required.
Idiopathic Left Ventricular VT	Favorable prognosis and low risk for syncope.	No, if symptomatic Yes, if asymptomatic. Yes if: At least 1 month after successful drug therapy or ablation; Cleared by electrophysiologist.	 Annual Recommend evaluation by cardiologist. Annual Evaluation by cardiologist required.
Long QT Interval Syndrome	High risk for ventricular arrhythmic death.	No	
Brugada Syndrome	High risk for ventricular arrhythmic death.	No	

VENTRICULAR SEPTAL DEFECTS 2002 Cardiovascular Conference Report Recommendation Tables, Page 127			
DIAGNOSIS	**PHYSIOLOGY/ FUNCTIONAL**	**CERTIFICATION**	**RE-CERTIFICATION**
Ventricular Septal Defect	Small = favorable.	Yes, if small shunt.	Annual Evaluation by cardiologist knowledgeable in adult congenital heart disease recommended.
	Moderate to large VSD has effect on pulmonary pressure and ventricular size and function.	No if: Moderate to large VSD; Symptoms of dyspnea, palpitations or syncope; Pulmonary artery hypertension; Right-to-left shunt, left ventricular enlargement or reduced function; Pulmonary to systemic flow ratio greater than 1.5 to 1.	
		Yes if: At least 3 months after surgery; None of above disqualifying criteria; No serious dysrhythmia on 24 hour Holter Monitoring; QRS interval <120 ms; (If right ventricle conduction delay >120 ms on ECG, can be certified if invasive HIS bundle studies show no infra-His block or other serious electrophysiologic disorder); Cleared by cardiologist knowledgeable in adult congenital heart disease.	Annual Evaluation by cardiologist knowledgeable in adult congenital heart disease, including 24 hour Holter Monitoring.