



**TEXAS**  
Health and Human  
Services

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**Texas Department of State  
Health Services**

**Texas Medical Advisory Board**

Texas Department of State Health Services

**Guide for Determining  
Driver Limitation**



## PREFACE

The Texas Medical Advisory Board (MAB) for Driver Licensing was established in 1970 to advise the Texas Department of Public Safety (DPS) in the licensing of drivers having medical limitations, which might adversely affect driving. See Chapter 12 of the Texas Health and Safety Code, Sections 12.092–12.098.

Realizing a need for criteria with which to judge the cases consistently and fairly, the MAB members assembled a set of guidelines. The original set of guidelines was composed of some information borrowed from the American Medical Association's Physician's Guide for Determining Driver Limitation with input from MAB members. However, further revisions in 2013 were made, utilizing the expertise of MAB members and other physicians along with a guide, entitled: "Driver Fitness Medical Guidelines" produced in 2009 by the National Highway Traffic Safety Association (NHTSA) and The American Association of Motor Vehicle Administrators (AAMVA) to assist licensing agencies in making decisions about an individual's fitness for driving. MAB's current revised guidelines are entitled: "Guide for Determining Driver Limitations for the Medical Advisory Board".

The ultimate goal is to allow all who can drive safely to do so, and to continue to reduce the number and severity of motor vehicle accidents in Texas. The Texas Transportation Code, Chapter 521 charges DPS with the responsibility of determining if applicants or licensees should or should not be licensed when a medical condition exists that could possibly affect their ability to drive. There are several types of examinations that can legally be required as part of the medical review and licensing process to help make the determination - one of which is a complete medical examination.

The Medical Advisory Board operates solely in an advisory capacity and DPS relies heavily on their professional advice, and has the final responsibility for licensure.

**No individual is permitted to appear personally before the Medical Advisory Board.** The MAB reviews medical facts provided by the licensee's attending physician and sometimes other relevant evidence. MAB member physicians utilize their expertise and accumulated years of experience along with its MAB guidelines in reaching an opinion. MAB meets every other week to review cases. After completion of its reviews, the MAB makes a written recommendation for each case reviewed which is forwarded to the DPS Driver License Division. After receiving MAB's opinion, DPS notifies the individual by mail of its decision concerning licensure. This takes approximately two (2) weeks from the time it receives the MAB recommendation.

As the driver licensing agency for Texas, DPS is solely responsible for all actions taken or initiated. Neither the Medical Advisory Board nor the attending physicians are legally liable for the decisions or actions taken by DPS in the suspension, revocation or denial of driver licenses. The DPS decision may be appealed to the courts for final determination.



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## FUNCTIONAL ABILITY PROFILES

Functional ability to operate a vehicle safely may be affected by a wide range of physical, mental or emotional impairments. To simplify reporting and to make possible a comparison of relative risks and limitations, the Medical Advisory Board has developed Functional Ability Profiles for ten categories and seven subcategories, with multiple levels under each profile. These categories and subcategories are listed in Tables 1-15. Each profile follows the same format:

1. **No diagnosed condition.** This section is used for a patient who has indicated to the Department of Public Safety a problem for which no evidence is found, or for which no ongoing condition can be identified. For example, this category might apply to a person with a heart murmur as a young child who indicates heart trouble, or to a teenager who fainted in gym class once on a hot day who indicates blackouts.
2. **Condition.** Fully recovered/compensated. This category indicates a history of a condition which has been resolved or which does not warrant review. Guidance for the use of this section is given in each profile
3. **Active impairment**
  - a. **Minimal.** This section may call for a periodic review because of an ongoing condition which could deteriorate.
  - b. **Mild.** This section deals with conditions which may impair driving but which are controlled so that a person can still operate a motor vehicle safely. Reviews are more frequent than in (a).
  - c. **Moderate.** This section identifies impairment which often precludes driving, but for which there is the potential for recovery to the point of allowing safe operation of a motor vehicle.
  - d. **Severe.** This section identifies permanent conditions with little or no potential for improvement and which precludes safe operation of a motor vehicle.
4. **Condition under investigation.** This section is for newly identified conditions. Follow-up reports will place condition in its proper part of section 3.

In all cases, periodic reviews may place the driver being evaluated in a higher or lower section as the condition improves or deteriorates.

### Note to Physicians:

Completion of the medical forms by the physician is a great service to the patient, in that it may help the patient retain their ability to drive their vehicle; it is also a great service to the people of Texas in helping to remove unsafe drivers who might endanger lives and property.

Physician comments can be of benefit in making a proper determination, and should be made with consideration of the patient's ability to drive in a safe and responsible manner.

Please complete the forms for the specific medical problem and do not just mark does not apply to all questions. **Specific information of the medical problem is needed.**

## DRIVER CLASSIFICATION

The holder of a valid driver's license may drive all vehicles in the class for which that license is issued, and all lesser classes of vehicles except motorcycles and mopeds.

A Commercial driver's license is required for operation of vehicles used to transport passengers or property if the motor vehicle:

- (1) Has a gross combination weight rating of 26,001 or more pounds inclusive of a towed unit with a gross vehicle weight rating of more than 10,000 pounds;
- (2) Has a gross vehicle weight rating of 26,001 or more pounds;
- (3) Is designed to transport 16 or more passengers, including the driver; or
- (4) Is transporting hazardous materials and is required to be placarded in accordance with 49 C. F. R. Part 172, Subpart F.

**Class A:** Permits a person to drive any vehicle or combination of vehicles with a gross combination weight rating of 26,001 pounds or more, provided the gross vehicle weight rating of the vehicle(s) being towed is in excess of 10,000 pounds.

**Class B:** Permits a person to drive:

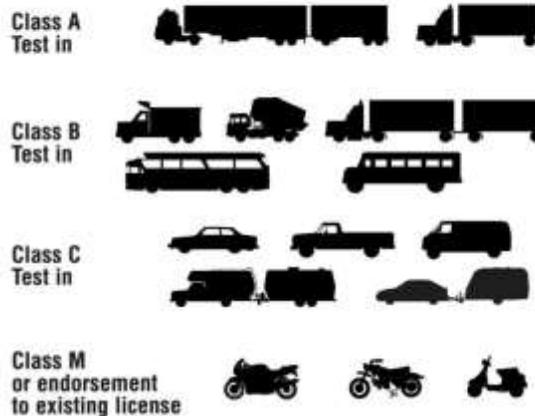
- (1) A single vehicle with a gross vehicle weight rating of 26,001 pounds or more, and any such vehicle towing either a vehicle with a gross vehicle weight rating that does not exceed 10,000 pounds or a farm trailer with a gross vehicle weight rating that does not exceed 20,000 pounds; and
- (2) A bus with a seating capacity of 24 passengers or more, including the driver.

**Class C:** Permits a person to drive:

- (1) A single vehicle with a gross vehicle weight rating of less than 26,001 pounds, or any such vehicle towing either a vehicle with a gross vehicle weight rating that does not exceed 10,000 pounds or a farm trailer with a gross vehicle weight rating that does not exceed 20,000 pounds; and
- (2) A bus with a seating capacity of less than 24 passengers, including the driver.

**Class M:** Permits operation of a motorcycle or moped subject to applicable restrictions.

### Examples of Vehicles for Road Test



## GENERAL DEBILITY

**AGING:** The quality of life for the aging can be greatly affected by their mode of transportation. Attempts should be made to preserve for this group the privilege of driving as long as the danger to themselves and others is no greater than that of the general driving population.

Because the aging process cannot be measured chronologically, the opinion of the treating physician regarding the applicant's functional capacity cannot be overestimated. This is a responsibility which the treating physician should not neglect. In some cases it might be feasible to suggest a period of restricted driving before the license is removed. It should be remembered that aging accounts for the most important organic factors contributing to driving problems.

Information to be considered in licensing this group of drivers includes: general weakness; organic brain syndrome causing memory loss; slowed reaction time; confusion or psychoses; musculoskeletal disabilities; and loss of visual acuity and peripheral fields. Requiring comprehensive written and driving tests can produce results which will determine whether a license should be issued and whether or not it should be restricted. Frequent reevaluations are advisable at yearly intervals or more often if indicated.

**PULMONARY DISEASES:** To be considered are such diseases as emphysema, bronchitis and asthma. In advanced stages any one or a combination of these could produce dyspnea and syncope, thus limiting the applicant's capacity to drive safely.

Most patients with chronic pulmonary diseases of various etiologies will have no difficulty maintaining their driving privilege. Two pulmonary disorders which deserve special attention are Chronic Obstructive Pulmonary Disease (COPD) and Sleep Apnea (discussed elsewhere in this manual).

Those individuals suffering from COPD with dyspnea on exertion or at rest should be evaluated. As a guideline, the oxygen saturation should be measured to determine their oxygen-carrying capacity. Those using supplemental oxygen would also fall into this category.

Evaluation of the driver should take place after optimal medical treatment.

**Pulmonary Conditions – Table 1**

Profile Levels	Circumstances*	Condition Example	Interval for Review
1.	No diagnosed condition	No known disorder	
2.	Condition fully recovered or compensated	Restrictive, tonic, infectious, Bronchospastic or obstructive lung disease, recovered	N/A
3.	Active impairment: a. Minimal b. Mild	a. Pulmonary disease with episodic symptoms, controlled with medication. b. Mild-moderate dyspnea on exertion, no dyspnea at rest. Oxygen saturation >88% with exertion.	a. N/A b. 24 months review

	c. Moderate	c. Moderate-severe dyspnea on exertion, no dyspnea at rest, O saturation >88% using supplemental oxygen.	c. 12 months review
	d. Severe	d. Same as (c), Cannot maintain O saturation >88% with or without oxygen.	d. No driving
4.	Condition under investigation	Newly discovered pulmonary disorder	As needed

**\*For further explanation, refer to page 1**

**MALIGNANCIES:** Malignancies involving the central nervous system or other vital organ systems, when causing general debility or disturbance of judgment or consciousness, should be a contraindication to the operation of any motor vehicle. The determination should be made on an individual basis with a **Comprehensive Driving Test**.

## **CARDIOVASCULAR DISEASE**

The degree of limitation caused by an applicant's cardiovascular status should be noted utilizing the American Heart Association's functional and therapeutic classification.

### **FUNCTIONAL CAPACITIES:**

- Class I: No symptoms - no limitations to private, cargo transport vehicles, or passenger transport vehicles in classes A, B & C.
- Class II: Symptoms with strenuous activity – no limitations to private or cargo transport vehicles in classes A, B & C; precludes passenger transport vehicles in classes A, B & C.
- Class III: Symptoms with normal activity – consider restrictions to private vehicles in class C; precludes cargo transport and passenger transport vehicles in classes A, B and C.
- Class IV: Symptoms at rest – precludes private, cargo transport and passenger transport vehicles in classes A, B and C.

### **THERAPEUTIC CAPACITIES:**

- Class A: No restrictions
- Class B: Restricted from strenuous activities
- Class C: Slight restriction of normal activity
- Class D: Severe restriction of activity
- Class E: Complete bed rest

Angina pectoris should be characterized by the **Canadian Cardiovascular Society classification** and heart failure by the **New York Heart Association classification** as outlined below.

### **ANGINA PECTORIS:**

- Class 0: Asymptomatic
- Class 1: Angina with strenuous exercise
- Class 2: Angina with moderate exertion
- Class 3: Angina with mild exertion
1. Walking 1-2 level blocks at normal pace
  2. Climbing 1 flight of stairs at normal pace
- Class 4: Angina at any level of physical exertion

### **HEART FAILURE:**

- Class I (mild): No limitation of physical activity. Ordinary physical activity does not cause undue fatigue, palpitation or dyspnea (shortness of breath).
- Class II (mild): Slight limitation of physical activity. Comfortable at rest but ordinary physical activity results in fatigue, palpitation or dyspnea.
- Class III (moderate): Marked limitation of physical activity. Comfortable at rest but less than ordinary activity causes fatigue, palpitation or dyspnea.
- Class IV (severe): Unable to carry out any physical activity without discomfort. Symptoms or cardiac insufficiency at rest. If any physical activity is undertaken, discomfort is increased.

**ATHEROSCLEROTIC CARDIOVASCULAR DISEASE** is a common disorder in which an inflammatory process of the arterial system results in aneurysms or obstructive lesions particularly involving the coronary arteries. All patients with atherosclerotic cardiovascular disease should receive optimum medical management and control of cardiovascular risk factors. Evaluation of driving limitation is dependent on severity and control of symptoms. Please refer to the section dealing with functional class **Completion of Stage II (>6 Metabolic Equivalent of Task (METS)) of the standard Bruce protocol is sufficient to demonstrate a commercial driver's capacity to perform job-related tasks.**

**ANGINA PECTORIS** Patients without angina on optimal medical therapy have no restrictions. Patients with angina pectoris controlled to **Canadian Cardiovascular Association (CCA) Class I to II are not restricted in driving. CCA Classification III angina pectoris precludes a class A or B license. A class C license is permitted with the "C" daytime only, "D" not to exceed 45 mph and "E" no expressway driving restrictions. CCA Classification IV angina pectoris precludes driving for all license types.** Commercial drivers with a history of angina need an examination and approval of fitness to drive by the driver's physician, generally a cardiologist at least every 2 years.

**MYOCARDIAL INFARCTION (MI):** A myocardial infarction precludes the operation of a passenger motor vehicle **(class C license) until the person is cleared by their attending physician.** A person with a **class A or B license is restricted from driving for at least 2 months post-MI and the applicant should be free of angina, tolerating current cardiovascular medications and cleared by a cardiologist prior to resuming commercial vehicle driving.**

**CORONARY ARTERY BYPASS GRAFTING (CABG)** Persons undergoing coronary artery bypass grafting must be fully recovered from surgical intervention prior to evaluation for the operation of any motor vehicle and clearance to drive must be obtained from the attending physician. **A commercial driver is precluded from driving for at least 3 months after surgery, must be asymptomatic and tolerating medications, and must be cleared by his cardiologist or cardiovascular surgeon prior to resuming driving.**

**PERCUTANEOUS CORONARY INTERVENTION** Patients receiving percutaneous coronary intervention should be **fully recovered (as defined by the attending physician) from the percutaneous intervention procedure itself before acquisition of a cargo & passenger transport license in class A, B, & C.** A commercial driver will need an examination and approval by the treating cardiologist.

#### **CONGESTIVE HEART FAILURE:**

**NEW YORK HEART ASSOCIATION CLASS (NYAH) I-II** Patients on adequate medical therapy and New York Heart Association Class I or II may be considered for permit to operate private vehicles in class C pending approval of their attending physician. To obtain licensing for a **cargo transport or passenger transport vehicle (class A or B license) the applicant must have an ejection fraction greater than 40%, have no ventricular arrhythmias, and be asymptomatic** (New York Heart Association Class I). Re-certification for class A or B license requires annual cardiology evaluation

**NEW YORK HEART ASSOCIATION CLASS III OR IV Precludes private, cargo transport and passenger transport vehicles in classes A, B and C.** Cardiovascular disease is complex to the individual and a physician should be consulted.

**MALIGNANT HYPERTENSION** – persons with uncontrolled severe hypertension should not drive until the hypertension is brought under control and they are released to drive by their physician.

## **SYNCOPE:**

**UNEXPLAINED SYNCOPE.** A single episode of unexplained syncope will preclude all driving for a period of **6 months**. If the cause of syncope is found and corrected, driving may resume with permission from the physician.

**NEUROCARDIOGENIC SYNCOPE (VASOVAGAL SYNCOPE)** which is uncontrollable or frequent, or which occurs **while driving precludes licensure of cargo and passenger transport vehicles in class A, B and C until it is controlled for a period of 6 months.**

**RECURRENT UNCONTROLLED SYNCOPE DUE TO ANYTHING OTHER THAN VASOVAGAL ATTACKS** precludes the operation of private, cargo transport and passenger transport vehicles in **classes A, B and C until effective treatment and control has been established for 1 year.** Recurrent means 2 or more episodes in 6 months.

**SYNCOPE DUE TO BRADYARRHYTHMIA.** Untreated bradycardia induced syncope **precludes the operation of private, cargo transport and passenger transport vehicles in classes A, B and C.** After successful treatment is accomplished either by removal of the medication causing bradycardic syncope or establishment of appropriate pacemaker function, patients may be re-evaluated for driver's license. Patients with **pacemaker implantation** should be restricted from the operation of cargo transport and passenger transport vehicles in **classes A, B for 1 month** after the demonstration of appropriate pacemaker function. **Persons with a class C license may return to driving when cleared by their attending cardiologist.**

**SYNCOPE DUE TO TACHYARRHYTHMIAS.** Untreated supraventricular tachyarrhythmia causing syncope **precludes the operation of private, cargo transport and passenger transport vehicles in classes A, B and C license.** Supraventricular tachyarrhythmia **successfully treated** with an ablative therapy procedure does not preclude the operation of private, cargo transport and passenger transport vehicles in **class C with a "P" restriction when cleared by their cardiovascular physician. Classes A and B can drive after a 3 month driving restriction period** to establish the long-term success of therapy.

## **CARDIAC DYSRHYTHMIAS**

**PREMATURE ATRIAL CONTRACTIONS AND PREMATURE VENTRICULAR CONTRACTIONS.** Premature atrial contractions and premature ventricular contractions occurring in an isolated fashion in a patient with normal ventricular function **NOT resulting in syncope does not preclude the operation of private, cargo transport and passenger transport vehicles in classes A, B and C.**

**ATRIAL FIBRILLATION OR ATRIAL FLUTTER.** Atrial fibrillation or flutter with an uncontrolled ventricular rate or uncontrolled anticoagulation **precludes the operation of private, cargo transport and passenger transport vehicles in classes A, B and C.** Atrial fibrillation and atrial flutter with documented rate control and appropriate anticoagulant therapy does not preclude the operation of private, cargo transport and passenger transport vehicles in classes A, B and C. Assessment by a cardiologist is mandatory for persons with a class A or B license.

**ATRIAL VENTRICULAR NODAL RE-ENTRY TACHYCARDIA: (AVNRT)** Atrial ventricular nodal re-entry tachycardia, (AVNRT), **if symptomatic (or WPW with atrial**

fibrillation) precludes the operation of private, cargo transport and passenger transport vehicles in classes A, B and C until adequate control of AVNRT has been demonstrated for a period of 1 month. AVNRT controlled by medical therapy or catheter ablation does not preclude the operation of private, cargo transport and passenger transport vehicles in classes A, B and C.

**VENTRICULAR TACHYCARDIA.** (VT) Ventricular tachycardia **resulting in syncope** or sudden cardiac death **precludes the operation of cargo transport and passenger transport vehicles in classes A, B.** **A class C license with a “P” restriction is permitted if the VT is controlled for 6 months on medication** or an AICD has been placed and the person is asymptomatic and has been cleared to drive by the attending cardiologist who specializes in electrophysiology.

Ventricular tachycardia, without syncope, non-sustained, occurring in patients with normal ventricles or exercise induced **when adequately controlled by medical therapy does not preclude the operation of private, cargo transport and passenger transport vehicles in classes A, B and C.** Persons driving cargo transport and passenger transport vehicles (**class A and B licenses**) **are restricted from driving for a least 1 month**, and should be cleared prior to driving by a cardiologist.

### **HEART BLOCK**

- First degree heart block does not preclude the operation of private, cargo transport and passenger transport vehicles in classes A, B and C.
- Mobitz I second degree heart block does not preclude the operation of private, cargo transport and passenger transport vehicles in classes A, B and C
- Untreated second degree heart block of the Mobitz type II variety precludes the operation of private, cargo transport and passenger transport vehicles in classes A, B and C unless approved by a cardiologist with extensive experience in cardiac arrhythmias.
- Untreated third degree heart block precludes the operation of private, cargo transport and passenger transport vehicles in classes A, B and C.

**CARDIAC PACEMAKERS** The presence of a normally functioning cardiac pacemaker **does not preclude the operation of private, cargo transport and passenger transport vehicles in classes A, B and C.** A pacemaker generator change does not preclude the operation of private, cargo transport and passenger transport vehicles in classes A, B and C, and an individual may resume driving following demonstration of normal function of the revised generator device. A person **may resume driving with a class C license after pacemaker insertion when he is cleared by his cardiologist.** A person with a **class A or B license should have a 1 month driving restriction after pacemaker insertion** and may then resume driving if cleared by his cardiologist.

**AUTOMATIC IMPLANTABLE CARDIO-DEFIBRILLATOR (AICD).** Patients requiring AICD placement because of an arrhythmia **resulting in syncope or sudden death are precluded from the operation of cargo transport and passenger transport vehicles in classes A and B and C.** **A class C license with a “P” restriction is permissible after a 6 month driving restriction period.** If the AICD is placed for **prevention only** and the person is asymptomatic, **a class C license with a “P” restriction is permissible when cleared by their attending cardiologist.**

### **VENOUS THROMBOEMBOLIC DISEASE**

**ACUTE DEEP VEIN THROMBOSIS (DVT)** Acute untreated deep vein thrombosis (DVT) presents the danger of embolization of the pulmonary circulation and potential cardiovascular

collapse. Untreated DVT is a contraindication to the operation of cargo and passenger transportation vehicles in classes A, B and C. Applicants with **acute untreated deep vein thrombosis should not operate any vehicle until adequately treated.**

Persons with deep vein thrombosis undergoing therapy with resolution of the condition may resume the operation of private, cargo transport and passenger transport vehicles in classes A, B and C provided the treating physician gives a favorable recommendation.

**CHRONIC DEEP VEIN THROMBOSIS** Patients with chronic deep vein thrombosis on anticoagulation therapy with or without pulmonary thromboembolic complication **may operate any vehicle when optimum anticoagulation levels are achieved and if they are asymptomatic (leg swelling is acceptable).**

## NEUROLOGICAL DISORDERS

Neurologic disorders have a significant impact on driving safety. A partial list would include: cerebrovascular disease, seizures, head injury, Parkinson's disease, the various dementias and encephalopathy's. The common element in most of these is the disturbance of sensory, motor, cognitive, and/or coordinating functions sufficient to affect driving. Some of these, if stable, can be compatible with ability to operate a motor vehicle if a driving test shows adequate performance in the type of vehicle to be driven.

Epilepsy includes any recurrent loss of consciousness or conscious control arising from intermittent change in the brain function. Other disorders which also can affect consciousness or control, such as syncope, cataplexy, narcolepsy, hypoglycemia, episodic vertigo interfering with function or drop attacks, need to be considered in a similar fashion.

In some neurologic disorders, there may be problems which fall into multiple categories. For example, a head injury may not only result in paralysis, but in visual field loss, impairment of learning and memory, and a seizure disorder. These should be addressed separately by the appropriate categories.

Because of society's increasing reliance on the automobile, limitations imposed upon the driving privilege of the elderly can significantly limit personal independence. While advancing age itself is not a predictor of individual driving ability, there are many conditions common in the elderly population which renders the older operator more susceptible to vehicular accidents. Included among the age-related diagnoses are stroke, Parkinson's disease, and dementia, particularly of the Alzheimer's variety.

**RECURRENT TRANSIENT CEREBRAL ISCHEMIC ATTACKS (TIA)** (Brief and completely reversible neurological deficit): **Recurrent transient cerebral ischemic attacks may preclude the operation of passenger transport vehicles in classes A, B and C.** Licensing of passenger and cargo transport vehicle operators included in classes A, B and C is dependent upon minimization of risk factors. Since TIA is frequently a warning of stroke potential it may be a reason to preclude driving. If the transient cerebral ischemic attack was known to be due to circumstances not likely to recur, cargo transport included in classes A, B and C, or private vehicle operation in class C would be permissible. **Patients treated with appropriate anticoagulant therapy should be able to resume driving. A 1 month driving restriction should follow the last known episode of transient cerebral ischemia if persons are not treated with anticoagulant therapy or if the underlying cause of the TIA is not corrected.**

**BLACKOUT:** Temporary loss of consciousness due to decreased blood flow to the brain or a transient episode that occurs during a state of intense intoxication (alcoholic blackout) of which the person has no recall, despite apparently having been conscious at the time and/or no explanation for a loss of consciousness a **6 month driving restriction period will be issued.**

**CEREBROVASCULAR ACCIDENT** (Any degree of persistent neurological deficit): Licensing for all driver categories is dependent upon the physical and neurological deficits following recovery and after rehabilitation has stabilized. Stroke-prone indicators, e.g., obesity, hypertension, diabetes mellitus, smoking, alcohol use, and significant cardiac disease should be reduced prior to licensing. **Demonstration of driving ability through the Department of Public Safety's comprehensive driving test should be required in evaluation of stroke patients with moderate to severe motor, sensory, visual, or language impairment.** Persons with a visual field deficit caused by a stroke must be cleared by an ophthalmologist prior to

driving (and must meet the peripheral vision requirements).

## CONVULSIVE DISORDERS

A seizure is a sudden alteration in behavior that may range from loss of consciousness or body control to a mild subjective feeling, due to acute abnormal brain electrical activity. People who have had a seizure are generally at greater risk for another seizure than people who have never had a seizure. The risk depends on the underlying cause. As a rule, the longer the seizure-free period, the less likely a person is to have another seizure. Epilepsy is the common medical disorder characterized by recurrent seizures. Patients with epilepsy (seizure disorders) are at increased risk for motor vehicle crashes because of a seizure, the underlying condition causing seizures, or anti-epileptic drug (AED) side effects. Many patients with epilepsy (perhaps two-thirds) have well-controlled seizures based on effective treatment with AEDs or (less commonly) surgery for epilepsy.

The many causes of seizures include stroke, tumor, trauma, infections, abnormal blood vessels of the brain, and complications of pregnancy, liver and kidney disease, alcohol, illicit drugs such as cocaine, medication withdrawal, and high fever in children. Epilepsy includes a range of seizure types.

Persons with seizures of all types (with the possible exception of simple partial sensory seizures) require **a seizure-free period on or off medications of 3 months for a class C license with a “P” restriction that they cannot drive taxis, busses, or emergency vehicles. For a class A or B license, or to have the restriction removed from a class C license, the applicant must be seizure free while off anti-seizure medication for a period of 5 years.**

**Persons who have only pure simple partial sensory seizures meeting criteria #1 and #3 below will be eligible for a class C license with the “P” restriction.**

A history of recurrent seizures, epileptic, or convulsive attacks **precludes operation of cargo transport, passenger transport and emergency vehicles in classes A, B and C.** Operation of personal automobiles in class C is dependent upon the following conditions:

1. **Currently under a physician's care** to assess control by anticonvulsant medication, drug side effects, seizure recurrence, and any neurological or medical changes in condition.
2. **No evidence of clinical seizures (including partial seizures) in a 3 month driving restriction period prior to medical review.**
3. **Specific recommendation from applicant's physician regarding applicant's reliability in taking medications, avoiding sleep deprivation and fatigue, and avoiding alcohol abuse.**
4. If an applicant has a well-controlled seizure disorder on medications proven by time, and then has a seizure when his physician makes a medication change, he should be allowed to drive when returned to his previous medication regimen.

In some cases the treating physician may wish to recommend a longer period of driving restriction than just 3 months. In those cases, the physician recommendation should be followed.

**Seizure - Table 2**

<b>Profile Levels</b>	<b>Circumstances*</b>	<b>Condition Example</b>	<b>Interval for Review</b>
1.	No diagnosed condition	No known disorder	

2.	Condition fully recovered or compensated	Previous history of any seizure, but seizure free and off medication for 5years.	Any Vehicle
3.	Active impairment:		
	a. Minimal	a. All other seizure disorders, on medication and seizure free for 3 months.	a. N/A
	b. Moderate	b. Seizures not yet controlled or medications not adjusted	b.No driving
	c. Severe	c. 1. Uncontrollable seizure disorder. 2. Chronic noncompliance 3. Medication which interferes with driving.	c.No driving

**\*For further explanation, refer to page 1**

## **DEMENTIA**

Dementia describes a group of symptoms affecting thinking, behavior, and social abilities severe enough to significantly interfere with daily functioning. By definition it is long term, and can be progressive. Dementia is defined as having deficits in two or more cognitive domains, including memory loss, impaired judgment, language, attention, change in personality/behavior, and/or visual spatial impairment. Based on population aging trends, the number of individuals who meet the criteria for dementia is expected to triple by mid-century, with clear implications for driving risk based upon research findings that individuals with dementia are at a much higher risk of accidents than the general population. The diagnosis of dementia is not made if symptoms occur in the presence of a delirium, which implies a temporary process. A diagnosis of dementia should be considered if a Mini Mental State Exam (MMSE) score is <27 or the CDR score is 1.0 or greater. However, a dementia may be present in patients with normal scores depending on the type of dementia. If a patient or their family member reports cognitive decline, a thorough dementia evaluation is likely warranted. Among the many causes of dementia, Alzheimer's disease is the most common and vascular dementia (caused by strokes) is the next most common. Other neurodegenerative disorders include Parkinson's dementia, frontotemporal dementia, Lewy-body dementia, brain tumors, trauma, and chronic alcoholism. Multiple sclerosis sometimes causes dementia, as well as brain infections, including viral encephalitis, late-stage syphilis, and HIV/AIDS and other rare disorders. Metabolic causes of dementia include hypothyroidism, hypoxia, Vitamin B12 and other vitamin deficiencies and poisons, such as heavy metal (e.g., lead) poisoning. In mild cognitive impairment, individuals demonstrate cognitive impairment in one domain, such as memory loss, that are greater than those expected with normal aging, but are not sufficient to diagnose dementia.

Multiple impairments in dementia can reduce driver performance and increase the risk of driver errors that can lead to a vehicle crash. For example, patients with dementia may get lost, may be inattentive (pedestrians, hazards, traffic lights, trains, etc.), may be impulsive (easily angered, risky decisions), may not be able to read signs or recognize symbols, and may have significantly slowed processing speed and reaction times. As a result they may find themselves in dangerous situations. These impairments could endanger themselves and others.

**The diagnosis of dementia precludes operation of a motor vehicle unless the individual is judged to be safe by:**

- 1) a neuropsychological evaluation of cognitive abilities involved in driving,
- 2) a driver evaluation by a center or persons trained to evaluate driving ability in the setting of cognitive or physical impairment (an Adaptive Driving Evaluation),
- 3) medical assessment by a physician with expertise in evaluating attention, memory, language, visuospatial function, etc., in a standardized way.
- 4) if none of the above 3 options are available, then a passing score on the Department of Public Safety (DPS) WRITTEN AND DRIVING evaluation will suffice.

Drivers with dementia who pass the initial evaluation should be re-evaluated every 12 months, or sooner if there is an accident, driving violation, or a family member raises concerns regarding safe driving (i.e., family members refuse to ride with patient, etc.)

**Dementia - Table 3**

<b>Profile Levels</b>	<b>Circumstances*</b>	<b>Condition Example</b>	<b>Interval for Review</b>
1.	No diagnosed condition	N/A	
2.	Condition fully recovered or compensated (based on physician evaluation)	N/A	N/A
3.	Presence of mild dementia (CDR score 0.5)	Driving precluded unless judged to be safe by a: <ul style="list-style-type: none"> <li>1) a neuropsychological evaluation of cognitive abilities involved in driving</li> <li>2) a driver evaluation by a center or persons trained to evaluate driving ability in the setting of cognitive impairment (physical rehabilitation center, etc.)</li> <li>3) ) medical assessment by a physician with expertise in evaluating attention, memory, language, visuospatial function, etc., in a standardized way</li> </ul>	Fail: No driving

		Drivers with dementia who pass the initial evaluation should be re-evaluated every 12 months, or sooner if there is an accident, driving violation, or a family member raises concerns regarding safe driving (i.e., family members refuse to ride with patient, etc.)	Pass: 1 year reevaluation
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**\*For further explanation, refer to page 1**

The American Academy of Neurology Practice Parameter: Risk of driving and Alzheimer’s disease (published in 2000) recommended that doctors use the Clinical Dementia rating (CDR) scale to identify people with dementia at an increased risk of unsafe driving. **The relative risk of crashes for drivers with a CDR score of greater than or equal to 1.0 is greater than our society tolerates for any group of drivers.** Even a CDR score of 0.5 is correlated with excess risk of driving in most individuals. Based on this information, persons with a CDR score of 0.5 should be evaluated as defined above. **Persons with a CDR score of 1.0 or greater are precluded from driving unless they meet the criteria listed in the previous paragraph.**

**THE CLINICAL DEMENTIA RATING SCALE (see below for instructions on how to score this test)**

	<b>NONE 0</b>	<b>QUESTIONABLE 0.5</b>	<b>MILD 1</b>	<b>MODERATE 2</b>	<b>SEVERE</b>
<b>Memory</b>	No memory loss or slight  Inconsistent forgetfulness	Consistent slight forgetfulness; partial recollection of events; "benign" forgetfulness	Moderate memory loss: more marked for recent events; defect interferes with everyday activity	Severe memory loss, only highly learned material retrained: new material rapidly lost	Severe memory loss only fragments remain
<b>Orientation</b>	Fully oriented	Fully oriented but with slight difficulty with time relationships	Moderate difficulty with time relationships; oriented for place at examination; may have geographic disorientation elsewhere	Severe difficulty with time relationships; usually disoriented to time, often to place	Oriented to person only
<b>Judgment and Problem Solving</b>	Solves everyday problems and handles business and financial affairs well; judgment good in relation to past performance	Slight impairment in solving problems, similarities and differences	Moderate difficulty in handling problems, similarities and differences; social judgment usually maintained	Severely impaired in handling problems, similarities and differences; social judgment usually impaired	Unable to make judgments or solve problems

<b>Community Affairs</b>	Independent function as usual in job, shopping, volunteer and social groups	Slight impairment in these activities	Unable to function independently at these activities though may still be engaged in some; appears normal to casual inspection	No pretense of independent function home; appears well enough to be taken to functions outside the family home	Appears too ill to be taken to functions outside the family home
<b>Home and Hobbies</b>	Life at home, hobbies and intellectual interests well maintained	Life at home, hobbies and intellectual interests slightly impaired	Mild but definite impairment of functions at home; more difficult chores, and complicated hobbies and interests abandoned	Only simple chores preserved; very restricted interests, poorly maintained	No significant function in the home
<b>Personal Care</b>	Fully capable of self-care		Needs prompting	Requires assistance in dressing hygiene and keeping of personal effects	Requires much help with personal care; frequent incontinence

Morris, J.C. (1993) The Clinical Dementia Rating (CDR): current version and scoring rules. *Neurology*, 43, 2412-4.

**Score is based on the MEMORY score only, unless 3 of the secondary categories score above or below the Memory score, in which case the CDR = the majority of the secondary categories.**

## HEAD INJURY

The neurological residuals from head injury are the result of direct brain contusions/infarctions and the "shear effect" where axonal connections are disrupted due to the force of impact. While the former lesions are discernible from CT scan and other diagnostic tests, the latter are more subtle but can be detected in alterations in behavior, personality and cognition.

The head injury patient differs significantly from one with a stroke syndrome. In addition to the obvious sensorimotor deficits and post-traumatic amnesia, after head injury, more subtle functional impairments in the area of behavior, altered personality, cognition, communication, judgment, spatial reasoning, problem solving, attention span, etc., are usually seen. These deficits, either singularly or in combination, may create a significant barrier to the safe operation of a motor vehicle. Judgment may be so affected that the victim does not even recognize the impairment.

Following head injuries, particularly where the surface of the brain has been penetrated, there is an increased incidence of seizures. Seizure disorders as an individual entity are covered elsewhere in this manual. Any driver with the diagnosis of head injury with secondary seizures must be reviewed separately under both sections since a road evaluation may be required under the former but not necessarily because of the latter.

### Head Injury - Table 4

Profile Levels	Circumstances*	Condition Example	Interval for Review
1.	No diagnosed condition	No known disorder	

2.	Condition fully recovered or compensated	No impairment of higher cortical function, visual, cognitive or sensorimotor function.	N/A
3.	Active impairment:		
	a. Minimal	a. Mild residual sensorimotor, visual or cognitive deficit from previous head injury not severe enough to impair safe driving	a. N/A
	b. Mild	b. Same as (a) but Road Evaluation Required.	b. Driving evaluation if recommender by physician
	c. Moderate	c. Significant deficits following recent head injury but with potential for improvement.	c. Individual must pass both written and driving portion of test
	d. Severe	d. Significant deficits following recent head injury but with no potential for improvement	d. No driving
4.	Condition under investigation	Recent traumatic head injury	No driving
1. Any questions should be resolved by a road evaluation with DPS. 2. Post traumatic seizures should be evaluated under the neurological profile.			

**\*For further explanation, refer to page 1**

### **MOVEMENT DISORDERS**

Conditions including, but not limited to Parkinsonism, torticollis, myoclonus and choreoathetosis may impair driving if the disorder is moderate to severe. **A driving test is recommended for all classes of moderate to severe cases.** A periodic review by the examining physician for side effects of medication is recommended. **A yearly Medical Advisory Board review is recommended for progressive movement disorders.**

Parkinson's disease (PD) is a progressive neurological disorder that manifests itself with physical symptoms (akinesia, tremors, dyskinesia, bradykinesia, postural problems, and joint rigidity), psychiatric symptoms (dementia, confusion, and hallucinations), and cognitive symptoms (concentration, visual perception, processing speed, and reaction time).

Drivers can have any number of these symptoms to varying degrees depending on the stage of progression and symptom management with medications. The functional implications for driving

include difficulty transferring in/out of the vehicle, reaching for and fastening/unfastening the seat belt, inserting the key in the ignition and turning, steadily rotating the steering wheel, accurately reaching for vehicle controls on the steering column and dashboard area, turning head to scan environment visually, and smoothly depressing/releasing the foot pedals. The psychiatric and cognitive symptoms of PD also have driving implications related to difficulties in timely decision making, judgment, problem solving, attending to the driving task and driving environment simultaneously, memory, and navigating through complex driving environments.

**Parkinson's - Table 5**

Profile Levels	Circumstances*	Condition Example	Interval for Review
1.	Condition fully recovered or compensated	History of drug induced Parkinsonism.	N/A
3.	Active impairment:  a. Mild  b. Moderate  c. Severe	a. Mild movement disorder controlled with medication.  b. Symptoms are moderate and applicant is dependent on medication for functional activities of daily living  c. Advanced Parkinson's disease including severe motor fluctuations precludes driving.	a. N/A  b. 1 year reevaluation. Precludes both A & B license  c. No driving – Precludes both A & B license
4.	Condition under investigation	Recently discovered Parkinson's disease/syndrome.	As needed

**\*For further explanation, refer to page 1**

**MULTIPLE SCLEROSIS (MS)** is a progressive neurological disorder of unknown origin that affects vision (double vision), cognition (problem-solving, attention, and memory), sensation, and physical strength. Individuals with multiple sclerosis may have difficulty visually interpreting the driving environment, traveling through complex driving environments, remembering where they are going, transferring in and out of the vehicle, turning the key in the ignition, feeling the pedals under their feet, rotating the steering wheel with enough force to turn the vehicle, depressing the foot pedals to stop when necessary, or operating the vehicle while seated in a power wheel chair individuals can often drive for extended periods of time following diagnosis with proper evaluation and training in the use of adaptive equipment to compensate for physical deficits. Careful consideration should be paid to the driver's cognitive status and their ability to learn and safely use new equipment. Drivers should be considered on a case-by-case basis with **comprehensive testing by a trained driving rehabilitation specialist to determine fitness to drive IF recommended by the evaluating physician.**

## EXCESSIVE DROWSINESS (ED)

Driver sleepiness is a major cause of motor vehicle crashes. Most of these crashes probably occur in otherwise healthy persons who are sleep deprived, but drivers with obstructive sleep apnea (OSA) and narcolepsy appear to be at particular risk. Other causes of excessive driver sleepiness include sleep deprivation due to medical, neurological, and psychiatric disorders, chronic pain, licit and illicit drug usage, idiopathic hypersomnia, restless leg syndrome, and shift work sleep disorder.

Drivers with excessive drowsiness should not drive until the condition is remediated, either by lifestyle change, medication therapy, or assisted ventilation at night. **It is the personal responsibility of all drivers to avoid driving if they are unable to maintain alertness when behind the wheel.** Shift work disorder has been shown to be of particular risk for driving because of excessive sleepiness.

### Obstructive Sleep Apnea (OSA)

**A diagnosis of severe OSA (apnea-hypopnea index AHI>20) precludes certification to drive a motor vehicle (class A, B and C license) until the sleep disorder is effectively treated and the person demonstrates satisfactory ongoing compliance with therapy.** A person with **moderate OSA** (apnea-hypopnea index between 10 and 20) may drive passenger vehicles (class C license) if he has minimal daytime sleepiness (Excessive Daytime Sleepiness Study (EDSS) score is <10) and the OSA is being effectively treated and he is compliant with therapy. Persons with **mild OSA** may drive with any license type if the AHI is <10 and the EDS score is <10. Ceasing therapy should be accompanied by driving cessation if the OSA is still present. **An individual with moderate to severe OSA who meets these requirements should be recertified annually.**

**Drivers of cargo or passenger transport vehicles (class A or B license) diagnosed with OSA with an AHI > 10 or an EDS > 10 must obtain a satisfactory score on a Maintenance of Wakefulness Test (MWT) to prove that treatment has been effective.**

**Drivers with OSA should not be certified for unrestricted driving if they have had a motor vehicle accident associated with falling asleep, have not yet been treated for OSA successfully, or have been noncompliant with treatment.** Drivers treated with surgery need to be re-evaluated for driving safety and must demonstrate a lack of excessive drowsiness (ED) while driving.

**Excessive Sleeping - Table 6**

Profile Levels	Circumstances*	Condition Example	Interval for Review
1.	No diagnosed condition	No known disorder	
2.	Condition fully recovered or compensated		
3.	Active Impairment:  a. Minimal	a. Individuals being treated with a CPAP machine, surgery or weight loss.	a. None

	b. Mild	b. Individuals who require CPAP therapy should be free of repeated episodes of sleepiness and show they are able to properly monitor and manage their OSA.	b. None
	c. Moderate	c. EDS score <10 and OSA treated	c. None
	d. Severe	d. No driving if they report excessive sleepiness while driving; had a crash associated with falling asleep, or have an AHI>20 and have not yet been treated successfully, or unresponsive to treatment.	d. No driving
4.	Condition under investigation	Newly discovered accident or OSA disorder	As needed

**\*For further explanation, refer to page 1**

**NARCOLEPSY**, a disorder involving daytime sleepiness and sleep attacks, is commonly associated with cataplexy and sleep paralysis. Sleep attacks may be triggered by monotonous activities such as driving. In fact, 60 to 80 percent of narcoleptic patients have fallen asleep while driving, at work or both.

A history of untreated narcolepsy **precludes operation of cargo and passenger transport vehicles in classes A, B and C.** Vehicle operator licensing in all classes is dependent upon an **absence of episodes of these disorders for a 3-month driving restriction period** prior to medical review and an affirmative recommendation from the attending physician.

### **PERIPHERAL NEUROPATHY**

**The driver proficiency test is recommended to determine driving impairment,** for people with severe neuropathy causing a weakness or sensory loss. A periodic review is recommended if the neurological dysfunction is severe.

### **VERTIGO AND DIZZINESS**

Multiple conditions may affect equilibrium or balance resulting in acute incapacitation or varying degrees of chronic spatial disorientation in a driver. These conditions are relatively common and can be self-limited or they can be more severe and chronic. Driving should obviously be avoided (and is usually avoided) when the driver is symptomatic, or if the symptoms are severe and unpredictable. Studies linking vestibular symptoms to unsafe driving are lacking and therefore these guidelines do not formally restrict driving in these patients.

These conditions include Benign Positional Vertigo, Acute and Chronic Peripheral Vestibulopathy and Meniere's disease.

The most common medications used to treat vertigo are antihistamines (e.g., meclizine), benzodiazepines (e.g., diazepam) or phenothiazine's (e.g., promethazine). **The requirement for either benzodiazepines or phenothiazine's for the treatment of vertigo would render the**

**individual unqualified for driving a commercial vehicle.** Special consideration should be given to the possible sedative side effects of antihistamines.

**Vertigo - Table 7**

<b>Profile Levels</b>	<b>Circumstances*</b>	<b>Condition Example</b>	<b>Interval for Review</b>
1.	No diagnosed condition	No known disorder	
2.	Condition fully recovered or compensated	History of vertigo, asymptomatic at least one year	
3.	Active impairment: <ul style="list-style-type: none"> <li>a. Minimal</li> <li>b. Mild</li> <li>c. Moderate</li> <li>d. Severe</li> </ul>	<ul style="list-style-type: none"> <li>a. Chronic mild vertigo</li> <li>b. Self-limiting acute episodic vertigo stable with medication.</li> <li>c. Benign Positional Vertigo or Acute and chronic Peripheral Vestibulopathy.</li> <li>d. Meniere’s disease, Labyrinthine Fistula and Nonfunctioning Labyrinths</li> </ul>	<ul style="list-style-type: none"> <li>a. N/A</li> <li>b. N/A</li> <li>c. No driving if having symptoms</li> <li>d. No driving</li> </ul>
4.	Condition under investigation	Newly discovered vertigo	As needed

**\*For further explanation, refer to page 1**

## PSYCHIATRIC DISORDERS

There is no certain way of predicting which persons with psychiatric illness will have accidents, but many high risk drivers are such because of psychiatric conditions.

Many individuals with psychiatric illness are maintained on medications on an ambulatory status. These drugs have varying degrees of sedative side effects and can potentiate other central nervous system depressants. Persons receiving such medications should be screened in terms of severity of side effects incident to medication and the adequacy of the remission.

**If a physician believes there may be a problem but is not sufficiently familiar with the patient's psychiatric status to make a valid judgment, he should refrain from doing so until he gains access to current psychiatric information or records or makes an appropriate referral for evaluation.**

**PERSONALITY DISORDERS:** Personality disorders are characterized by developmental defects or pathologic trends in personality structure, with minimal subjective anxiety and distress. Included in this grouping are inadequate personality, schizoid personality, cyclothymic personality, and paranoid personality. Also included are antisocial reaction and dissociative reaction. **Applicants who show an abnormal amount of hostility, assaultiveness and other forms of aggression should not drive any type of vehicle until the examining physician gives assurance that this condition is in remission and it is safe to drive.** Personality disorders are difficult to assess in terms of degree of driver ability impairment. However, if no significant behavioral problems or drug therapy side effects exist, applicants with personality disorders cannot be precluded from driving private vehicles in class C.

**PSYCHOTIC DISORDERS:** Psychotic disorders are disturbances of such magnitude that personality disintegration takes place and the mind may be distorted with accompanying difficulty in distinguishing the real from the unreal, i.e., delusions and hallucinations. **Persons who are actively psychotic are precluded from driving any motor vehicle.** Although affective disorders may involve psychotic features, many persons with affective disorders are not psychotically disturbed. These persons still require careful assessment in regard to alertness, concentration and suicidal risk. **The driving privilege may be reinstated when the condition is in remission, but frequent evaluations should monitor the applicant's progress.**

**PSYCHOTROPIC DRUGS:** The use of psychotropic drugs in therapy for psychiatric disorders warrants special consideration in driver ability evaluations. Psychotropic drugs may have dangerous side effects such as impaired reaction time and drowsiness. There is also the danger of sudden hypotension and syncope with some antipsychotic and antidepressant drugs. Because drug side effects usually occur sporadically and are not predictable, **specific recommendations from the attending physician are helpful.**

**POST-TRAUMATIC STRESS DISORDER (PTSD)** is a severe anxiety disorder that is brought on by exposure to extreme physical harm or danger. Near-death experiences, torture or extreme bodily harm, disaster, physical or sexual assault, or psychological damage and affliction can all lead to **post-traumatic stress disorder (PTSD)**. People who directly lived through or were witnesses to such events can develop the disorder.

Patients with PTSD may have the following symptoms or make the following statements. I can't drive; I have PTSD, which is the abbreviation for . I have *flashbacks* and *hallucinations*, and I *zone out for hours, only to snap out of it and be totally unaware of what I am doing, where I am, how I got there and/or clueless of what I did in that time period.* I have a horrible memory; my reflexes are totally whack; I sleep for many hours unable to wake; I fall asleep and have nightmares, or flashbacks, of past events; I am easily startled — even if you're near, even if there

is a lot of noise, even if I really shouldn't be; **everything** triggers re-experiencing, even the least expected things.

Excessive aggressiveness or disregard for the safety of self or others or both, which present a clear and present danger, regardless of cause, or periodic episodes of loss of attention or awareness, which are of unknown etiology or not otherwise categorized, **precludes the operation of a motor vehicle unless the driver has been free of episodes for 6 months for all classes**, as reported by a licensed physician. If needed a driver rehabilitation specialist can provide a comprehensive evaluation to determine their ability to drive.

**HOMICIDAL AND SUICIDAL MANIFESTATIONS:** Assurance from the examining physician that these are in remission is necessary. **Homicidal and suicidal manifestations would contraindicate the operation of any motor vehicle.**

**INTELLECTUAL DISABILITIES**

Mentally deficient individuals **with intelligence quotients less than 50 should not drive any vehicle** because of possible judgment impairment. Selected individuals, i.e., those with **I.Q.'s in the range of 75 and above, may operate private vehicles in class C** if they have been well trained and there is documentation of adequate driving judgment. However, some driving restrictions for **I.Q. ranges 50 to 75 should be considered and the following restrictions should be placed on the license: "C" daytime driving only, "D" not to exceed 45 mph, "E" no expressway driving.**

(Note: The Committee on Nomenclature of the American Psychiatric Association has classified mental deficiency according to intellectual capacity: mild, I.Q. 70-85; moderate, I.Q. 50-70; severe, I.Q. 0-50.)

**Psychiatric Disorders - Table 8**

<b>Profile Levels</b>	<b>Circumstances*</b>	<b>Condition Example</b>	<b>Interval for Review</b>
1.	No diagnosed condition	No known disorder	
2.	Condition fully recovered or compensated	Past history of psychiatric or behavioral disorder, asymptomatic, off medication.	N/A
3.	Active impairment:		
	a. Minimal	a. Current psychiatric disorder without impaired judgment, destructive thinking or intent, controlled with or without medication.	a. 4 yrs.
	b. Mild	b. Same as (a), with potential for impaired judgment. Road Evaluation required	b. 1 yr.

	c. Moderate	c. Active psychiatric/behavioral disorder with indications of risk to self or others; or with treatment or medications which interfere with alertness or coordination, but with potential for improvement.	c. No driving
	d. Severe	d. Same as (c) not expected to recover. Intractable mental illness with symptoms r behavior that puts the driver or others at risk; illness is refractory to medication or other treatments.	d. No driving
4.	Condition under investigation	Newly discovered psychiatric/behavioral disorder.	As needed

**\*For further explanation, refer to page 1**

## EXCESSIVE ALCOHOL USE AND/OR ABUSE

The applicant who is known for alcohol use and/or abuse should not be allowed any type of license. Proof of use and/or abuse may be a physician's statement, hospital record, driving record, police record or statement from Alcoholics Anonymous. There should be no evidence of alcohol use and/or abuse in a **1 year driving restriction period** prior to medical review for individuals being evaluated for private vehicle licenses in **class C**. Applicants being evaluated for **cargo or passenger transport vehicle licenses included in classes A, B and C should demonstrate a 2 year alcohol free period** prior to medical review.

Close scrutiny should be given to applicants whose prior history contains multiple episodes of alcohol use and/or abuse, yet none recent enough upon which to base a recommendation for denial using the use and/or abuse free periods mentioned above. **If the available evidence indicates a substantial risk of relapse into chronic use and/or abuse, a denial on those grounds may be issued regardless of the date of most recent use and/or abuse.**

Conversely, any applicant being evaluated because he/she voluntarily admitted to some degree of substance use and/or abuse problem presents another set of circumstances to be weighed. **If the applicant has had no documented history of any episodes of substance use and/or abuse and has voluntarily enrolled in and successfully completed a recognized rehabilitation program, an approval for the license may be granted.** This approval should be contingent upon the applicant showing a continuing desire to remain free of substance use and/or abuse. Compliance should be monitored by periodic reevaluation at the discretion of the Board.

Close attention should be given to the use of alcohol in relation to other disorders, such as psychiatric or metabolic disturbances, and the concurrent use of medications such as tranquilizers.

Psychiatric evaluation may be a useful tool in the assessment of the applicant who is questionable in regard to the excessive use of alcohol.

**Alcohol Use and/or abuse - Table 9**

Profile Levels	Circumstances*	Condition Example	Interval for Review
1.	No diagnosed condition	No known disorder	
2.	Condition fully recovered or compensated	Past history of alcohol use/abuse, substance free without history of personal or social consequences for the past year.	N/A
3.	Active impairment:		
	a. Minimal	a. No alcohol use/abuse and without history of personal or social consequences for the <b><u>past year.</u></b>	a. 1 yr.
	b. Mild	b. Chronic alcohol use without Impairment of motor and/or intellectual functions	b. 1 yr.

and without history of personal or social consequences for the **past year. Road Evaluation Required.**

	<p>c. Moderate</p> <p>d. Severe</p>	<p>c. Chronic alcohol use/abuse resulting in current impairment or motor and/or intellectual functions.</p> <p>d. Chronic alcohol use/abuse resulting in permanent mental or physical impairment affecting operation of a motor vehicle.</p>	<p>c. No driving</p> <p>d. No driving</p>
4.	Condition under investigation	Newly discovered alcohol use/abuse including withdrawal syndromes.	As needed

**\*For further explanation, refer to page 1**

## DRUG USE AND/OR ABUSE

In addition to considering the effects of prescription drugs, attention must also be focused upon use and/or abuse of non-prescription drugs. **Applicants who are known to be abusing any type of drug should not be allowed any type of license.** Proof of an episode of drug use and/or abuse may be a physician's statement, hospital record, driving record or police record. There should be no evidence of drug use and/or abuse in a **1 year driving restriction period** prior to medical review for applicants being evaluated for private vehicle licenses in **class C**. Applicants being evaluated for **cargo or passenger transport vehicle licenses included in classes A, B and C** should demonstrate a **2 year drug use and/or abuse free period** prior to medical review.

**If an applicant has a history of multiple episodes of drug use and/or abuse and the available evidence indicates a substantial risk of relapse into chronic use and/or abuse, a denial on those grounds may be issued, regardless of the date of most recent use and/or abuse.**

Applicants being evaluated after voluntarily admitting to some degree of substance use and/or abuse and receiving rehabilitative treatment for it are to be considered on the same criteria presented for that group in the Alcohol Use and/or abuse section of this guide.

**An applicant being treated under a recognized methadone maintenance program may drive any vehicle provided it is established by the applicant's physician that he is free of drug use and/or abuse and not functionally impaired by methadone side effects. Applicants should be stabilized for three (3) months before being issued a license for operating a private vehicle in class C; for six (6) months for a commercial or cargo transport license included in classes A, B and C; and for twelve (12) months for a chauffeur or passenger transport vehicle license included in classes A, B and C.**

Particular attention should be given to cases in which drug use and/or abuse is associated with psychiatric problems; moreover, it has been shown that various visual disturbances result from some types of drug use and/or abuse.

**Drug Use and/or abuse - Table 10**

Profile Levels	Circumstances*	Condition Example	Interval for Review
1.	No diagnosed condition	No known disorder	
2.	Condition fully recovered or compensated	Past history of substance use/abuse, substance free without history of personal or social consequences for the past year.	N/A
3.	Active impairment: a. Minimal	a. No substance use/abuse without history of personal or social consequences for the <b><u>past year</u></b> .	a. 1 yr.

	<p>b. Mild</p> <p>c. Moderate</p> <p>d. Severe</p>	<p>b. Chronic substance use without Impairment of motor and/or intellectual functions and without history of personal or social consequences for the <b>past year. Road Evaluation Required.</b></p> <p>c. Chronic substance use/abuse resulting in current impairment or motor and/or intellectual functions.</p> <p>d. Chronic substance use/abuse resulting in permanent mental or physical impairment affecting operation of a motor vehicle.</p>	<p>b. 1 yr.</p> <p>c. o driving</p> <p>d. No driving</p>
4.	Condition under investigation	Newly discovered substance use/abuse including withdrawal syndromes.	As needed

**\*For further explanation, refer to page 1**

## METABOLIC DISEASES

Abnormalities of the endocrine system can cause altered consciousness, weakness, fatigue, lethargy, motor abnormalities, visual disturbances, tremors or psychiatric disorders. Such disorders include but are not limited to, diabetes, thyroid disorders, parathyroid disease, pituitary disorders and neuropathic disorders.

Once one of these conditions is diagnosed evaluation should be undertaken by a physician to assess any degree of impairment. Any evaluation of one's driving should be assessed under the appropriate guidelines, e.g. diabetic retinopathy should be referred to the visual acuity profile. These disease processes should be under control to assure safe operation of a motor vehicle. Metabolic disease resulting from glandular dysfunction may cause a large range of symptoms. The severity of the disease and accompanying symptoms may dictate the advisability of restriction of the driving privilege. The more serious conditions likely to impair driving ability are discussed in this section.

Metabolic diseases not discussed in this section may be evaluated by assessing symptoms such as muscular weakness, muscular pain, visual disturbances, dizziness, intractable headaches, and/or fatigue propensity.

**CHRONIC RENAL FAILURE: Uremia when controlled by regular dialysis is no contraindication to the operation of a private vehicle in class C.** These applicants **should not operate cargo or passenger transport vehicles included in classes A, B and C.** Each applicant must be evaluated for the presence of associated diseases and symptoms such as muscular weakness, visual disturbances, dizziness and seizure disorders. They should be monitored at yearly intervals for the development of related problems such as neuropathy.

**DIABETES MELLITUS:** Diabetes mellitus, when controlled by diet alone, or diet and oral hypoglycemic agents, is not a contraindication to operation of vehicles in classes A, B and C. Diabetes, when well controlled by insulin, is not a contraindication to the operation of a private vehicle in class C. **A class A or B license cannot be granted if the applicant is taking insulin unless a waiver is obtained from his Department of Transportation physician.** (According to the FMCSA, Regulation 391.41(b) (3) states that a person will be disqualified from driving a commercial motor vehicle if they have an: **“established medical history or clinical diagnosis of diabetes mellitus currently requiring insulin for control.”** The diabetes waiver program allows a person to operate a commercial motor vehicle if they are found to be fit under medical conditions . . . even with **insulin controlled diabetes**.)

Primary factors in this evaluation should include: previous driving history, degree of control achieved, emergency knowledge and preparedness. For a **six (6) month** period prior to the issuing of any type of license, the applicant **should be free of hyperglycemia and/or hyperglycemia severe enough to:**

- A. Cause neurologic dysfunction: confusion, motor dysfunction or loss of consciousness.
- B. Result in any type or degree of vehicle accident.
- C. Require active assistance in treatment.

The exception to this clause would be the existence of extenuating circumstances such as a physician-initiated change in medication or a severe illness. The license should be issued once the applicant's physician submits a statement that the condition has been stabilized and control has again been achieved.

Applicants with diabetes should be monitored periodically to determine degree of control and

development of complications such as retinopathy or neuropathy.

**Metabolic - Table 11**

<b>Profile Levels</b>	<b>Circumstances*</b>	<b>Condition Example</b>	<b>Interval for Review</b>
1.	No diagnosed condition	No known disorder	
2.	Condition fully recovered or compensated	History of endocrine disorder, such as gestational diabetes.	N/A
3.	Active impairment: <ul style="list-style-type: none"> <li>a. Minimal</li> <li>b. Mild</li> <li>c. Moderate</li> <li>d. Severe</li> </ul>	<ul style="list-style-type: none"> <li>a. Active endocrinopathy, controlled without hypoglycemia, loss of consciousness, or altered mental status for at least 6 months or diet controlled diabetes</li> <li>b. Active endocrinopathy, treated with Medication, i.e. diabetes controlled with oral agents without episodes of hypoglycemia or altered mental status.</li> <li>c. Active endocrine disorder inadequately controlled for driving purposes, with 1 or more episodes of untreated hypoglycemia, loss of consciousness, or altered mental status in the past 6 months.</li> <li>d. Uncontrolled endocrine disorder with frequent hypoglycemia, loss of conscious or altered mental status.</li> </ul>	<ul style="list-style-type: none"> <li>a. N/A</li> <li>b. N/A</li> <li>c. No driving</li> <li>d. No driving</li> </ul>
4.	Condition under investigation	Newly discovered endocrinopathy	As needed

**\*For further explanation, refer to page 1**

## MUSCULOSKELETAL DEFECTS

Skeletal integrity, joint mobility and muscle strength and coordination are prerequisites for competent management of motor vehicles. Greater demands are logically placed on certain extremities and the functional capability of these are of greater importance; yet, there is such a wide variable in standards and special vehicle devices that no simple chart may be advanced to establish minimal standards.

**Operators of private automobiles in class C should have fair to good function in both upper extremities or in one upper and one lower.** The nature of the dysfunction determines the necessity of vehicle or driver adaptive devices. With a driver proficiency test the functional capacity of impaired musculoskeletal performance can be determined.

**Operators of cargo and passenger transport vehicles included in classes A, B and C should have normal use of both upper extremities and both lower extremities.** It is conceivable that in some instances dysfunction (weakness, paralysis, amputation with or without prosthesis) of the left lower extremity would not significantly impair control of the vehicle and would be allowable. In rare instances would dysfunction of an upper extremity be acceptable.

Following are suggested guidelines for consideration in various disorders:

**ARTHRITIS:** Arthritis of any type may be of little consequence or may progress to a point that performance is inhibited by pain and lack of agility or by actual impaired motion of the joints. The location and extent of involvement must be investigated in each individual case and reevaluated periodically.

**BACK PAIN:** Back pain generally results in self-imposed restriction of driving, but, in the absence of associated neurological disturbance, there is rarely a contraindication to driving.

**CEREBRAL PALSY:** Choreoathetosis cerebral palsy of a mild degree is no contraindication to driving. Once the condition is stabilized and the minimum standards are satisfied, there need not be regular reviews.

**CERVICAL SPINE DISORDERS:** Cervical spine disorders requiring **external bracing contraindicate driving of cargo and passenger transport vehicles in classes A, B and C.** Demonstrated driving proficiency will reveal if there need be restrictions placed on the applicant for a private vehicle license in class C.

**HEMIPLEGIA:** Hemiplegia resulting from a cerebrovascular accident should not preclude driving. However, a driving test and peripheral visual field testing should be indicated. Residual paralysis from traumatic paraplegia or polio may not prevent safe driving. These conditions are relatively static and, once minimum standards are satisfied, need not be reviewed regularly.

**MUSCLE DYSTROPHIES:** Progressive muscle dystrophies **preclude operation of cargo and passenger transport vehicles included in license classifications A, B and C.** Private vehicle operation in **class C is permissible with regular reevaluation intervals and driving tests.**

**Musculoskeletal - Table 12**

<b>Profile Levels</b>	<b>Circumstances*</b>	<b>Condition Example</b>	<b>Interval for Review</b>
1.	No diagnosed condition	No known disorder	
2.	Condition fully recovered or compensated	History of non-progressive disorder that currently does not impair driving and does not require special equipment	N/A
3.	Active impairment: <ul style="list-style-type: none"> <li>a. Minimal</li> <li>b. Mild</li> <li>c. Moderate</li> <li>d. Severe</li> </ul>	<ul style="list-style-type: none"> <li>a. Active, non-progressive disorder that does not impair driving provided that appropriate assistive equipment is used.</li> <li>b. Active, progressive disorder that currently does not impair driving. Assistive equipment may be used, speed and distance restrictions may also be necessary.</li> <li>c. Active disorder that impairs driving, despite the use of assistive equipment but with potential for recovery.</li> <li>d. Active disorder that impairs driving despite the use of assistive equipment, without potential for recovery.</li> </ul>	<ul style="list-style-type: none"> <li>a. N/A</li> <li>b. N/A</li> <li>c. No driving</li> <li>d. No driving</li> </ul>
4.	Condition under investigation	Newly discovered musculoskeletal disorder.	As needed

**\*For further explanation, refer to page 1**

## EYE DEFECTS

Impairments in visual acuity can result from a number of different eye and neurological conditions. These conditions include but are not limited to the following: macular degeneration, cataract, optic neuritis, end-stage glaucoma, retinal degenerations (e.g., retinitis pigmentosa, Stargardt disease), diabetic retinopathy, optic atrophy, brain injury (e.g., stroke, trauma, and tumor), and diseases of the cornea, amblyopia, and uncorrected refractive error (e.g., uncorrected myopia).

The main elements of vision necessary for safe driving are visual acuity, peripheral vision and freedom from double vision (diplopia). These three items are elaborated in the following charts on visual parameters. Other, not so easily measured visual factors are discussed below:

Defects in color vision, important in distinguishing traffic signals, are usually compensated for by learning traffic light positions and are not in themselves reasons to deny driving but will usually have been tested adequately by the road evaluation.

Night vision and glare recovery may be impaired in the presence of corneal scars, cataracts, and retinal disease. The physician testing for adequate night vision must look for structural alterations of the eye that are associated with impaired night vision, such as corneal opacities, cataracts, macular degeneration, optic atrophy, or retinopathy. Treatment of glaucoma with pilocarpine produces miosis (constricted pupils) and myopia (nearsightedness) in young people and may consequently impair night vision as well.

Dynamic visual acuity (acuity measured when there is movement of a driver or object) and speed blur are important to keep in mind since speed and motion appear to decrease acuity and peripheral vision. Visual acuity decreases as background illumination decreases, and it decreases with advancing age even at high levels of background illumination. Central visual acuity should be assessed without the use of telescopic lenses, because they obstruct and reduce the size of the visual fields of the wearer. The effect is similar to scanning the horizon with a telescope; the driver can see very little of it at a time. Much of the traffic pattern, such as adjacent lanes, parked cars, and merging vehicles, may consequently be invisible. **Therefore, it is preferred that telescopic lenses are unacceptable for meeting the visual acuity requirements for driving. If a driver qualifies visually but wishes to wear a telescopic lens in addition to standard corrective lenses, the telescopic lens should be prescribed by a licensed ophthalmologist or optometrist. The visual specialist will be able to ensure that the driver can look around the telescopic lens and view the full traffic pattern.**

Decreases peripheral vision is associated with crashes at intersections. These crashes usually occur on the side of the driver's visual field loss. It is recommended that drivers have 140° fields of vision.

A driver who develops diplopia soon learns to ignore one of the images (White 2001) or close one eye to suppress it. However, drivers with acute diplopia who have not learned to do this may be advised to patch one eye or refrain from driving until they are comfortable with monocular vision. Persistent diplopia is rare and may be caused by neurologic diseases such as multiple sclerosis, and conditions affecting the extra ocular muscles. **Diplopia warrants case-by-case review to assess its likely effect on driving performance.**

Physician judgment and counseling of the driver as well as recommendations to the driver examiner to look for problems caused by the above defects will be helpful in identifying drivers whose visual disorders may be a hazard even though it cannot be measured by standard visual tests.

The use of the bioptic telescope by drivers with visual acuity impairment, and among these jurisdictions, there is wide variability in the eligibility criteria for bioptic driving. It is important to note that there is no clear evidence either supporting or opposing the safety of bioptic driving. A few studies have been carried out but they are methodologically flawed and do not resolve this issue.

**VISUAL STANDARDS FOR DRIVER LICENSING**

- I. Passenger Transport and Cargo Transport Vehicles of 26,001 pounds or more; Cargo transport of hazardous materials in class A, B or C.
  - A. 1. Coordinate use of both eyes in binocular vision and  
2. Corrected/Uncorrected visual acuity in each eye of 20/40 or better.
  - B. 1. No spectacle correction for aphakia or for refractive errors of 10 D. or more.  
2. Contact lens corrections are permissible if requirements A.1. and A.2. are met.
  - C. Visual field: The test object must be recognized at 90 degrees from central fixation in the temporal or lateral approach and 50 degrees from central fixation in the nasal or medial approach in each eye. No significant defects (scotoma) inside this peripheral field are permissible. Each eye is to be tested separately.
- II. Cargo Transport under 26,001 pounds (non-hazardous materials); Small buses and limousines for less than 24 passengers.
  - A. 1. Coordinate use of both eyes in binocular vision and  
2. Corrected/Uncorrected visual acuity of the best eye of 20/40 or better.
  - B. 1. No spectacle correction for aphakia or for refractive errors of 10 D. or more.  
2. Contact lens corrections are permissible if requirements A.1. and A.2. are met.  
3. Visual Field: requirements same as C. above.
- III. Private Auto in class C.
  - A. Visual acuity without correction of both eyes of 20/40 or better: no restrictions.
  - B. Visual acuity with best correction of the better eye or both eyes 20/50 may drive with restrictions.
  - C. Visual acuity without correction of the better eye of 20/25 or better: no restrictions (aka: single eye vision). Visual field test object must be recognized within an uninterrupted arc of 140 degrees.

**In cases of doubt as to the applicant's fitness, the recommendation of the Department of Public Safety's comprehensive driving test is advisable.** Applicants not meeting the above visual requirements may be considered in exceptional meritorious circumstances. Suitable license restrictions are advisable in such cases, depending on the severity of the impairment. A comprehensive driving test must be requested in all such cases.

**DOUBLE VISION – Table 13**

Profile Levels	Circumstances*	Condition Example	Interval for Review
1.	No diagnosed condition	Never sees double	
2.	Condition fully recovered or compensated	Past history of diplopia which as recovered	Per recommendation

3.	Active impairment:		
	a. Minimal	a. Eyes crossed but no diplopia without patch	a. N/A
	b. Mild	b. Intermittent diplopia or constant double vision correctable by patching one eye	b. 4 yrs.
	c. Moderate	c. Monocular diplopia in only eye meeting visual acuity standards with potential for correction.	c. No driving
	d. Severe	d. Monocular diplopia in only eye meeting acuity standards without potential for correction.	d. No driving
4.	Condition under investigation	Recent onset of diplopia	As needed

**\*For further explanation, refer to page 1**

**PERIPHERAL VISION – Table 14**

Profile Levels	Circumstances*	Condition Example	Interval for Review
1.	No diagnosed condition	Never sees double	
2.	Condition fully recovered or compensated	Binocular visual field of at least 140° measured with a 10mm white test object at 330 mm, without corrective lenses, in the horizontal meridian.	
3.	Active impairment:		
	a. Minimal	a. Binocular or monocular visual field of 140° or better.	a. 4 yrs.
	b. Mild	b. Binocular or monocular visual field of 140° or better with potential for deterioration.	b. 1 yr.

	c. Moderate	c. Peripheral vision of less than 140° but at least 110°. Restricted to right and left outside mirrors.	c. No driving
	d. Severe	d. Permanent visual field of less than 110°.	d. No driving
4.	Condition under investigation	Recent onset of diplopia	As needed

**VISUAL ACUITY – Table 15**

<b>Profile Levels</b>	<b>Circumstances*</b>	<b>Condition Example</b>	<b>Interval for Review</b>
1.	No diagnosed condition	Sees 20/40 or better in best eye without correction	Standard
2.	Condition fully recovered or compensated	Visual acuity corrected to 20/40 or better in best eye	Standard
3.	Active impairment:		
	a. Minimal	a. Vision correctable by lens in best eye to 20/40 or better at distance.	a. Standard
	b. Mild	b. (1) Vision correctable to 20/40 in best eye but could deteriorate soon due to glaucoma, diabetic retinopathy, etc.  (2) Vision correctable to 20/50 in best eye; restricted to daytime operation only.  (3) Vision correctable to 20/60 in best eye; restricted to daytime operation with a 25 mile radius of residence <sup>3</sup>  (4) Vision correctable to 20/70 in each eye	b. 1 yr.  45 miles per hour speed limit, no driving on interstate highways.  Daytime operation within a 25 mile radius of residence.

	c. Moderate	c. Vision currently less than 20/70 in each eye.	c.No driving 45 miles per hour speed limit, no driving on interstate highways, daylight driving only.
	d. Severe	d. Vision currently less than 20/70 in each eye without chance of recovery.	d. No driving
4.	Condition under investigation	Recent onset of visual field loss	As needed
<sup>123</sup> Refer to following footnotes			
<b>*For further explanation, refer to page 1</b>			

**VISUAL ACUITY FOOTNOTES:**

1. Standard means visual test at the license renewal periods established by the Motor Vehicle statutes.
2. Correction through the use of telescopic or bioptic lenses is not acceptable for purposes of meeting any of the visual acuity requirements nor may such lenses be used during any phase of the driver license examination process.
3. The daytime only and/or geographic restriction(s) may be reduced or enlarged on the basis of:
  - a. a recommendation from an optometrist or ophthalmologist advising that the individual's vision is adequate to permit the safe operation of a motor vehicle; and
  - b. a supervisory driver's examination that demonstrates the individual's ability to operate a motor vehicle safely; and
  - c. a review of the individual's driving record shows the ability to operate a motor vehicle safely and in accordance with all applicable laws, rules, and regulations governing the operation of motor vehicles.

## GLOSSARY

### A

**AHI** - [Apnea-hypopnea index](#), or AHI, is an index used to assess the severity of [sleep apnea](#) based on the total number of complete cessations (apnea) and partial obstructions (hypopnea) of breathing occurring per hour of sleep.

**AICD** - automated [implantable cardioverter-defibrillator](#)

**Alcohol use and/or abuse** is a psychiatric diagnosis describing the recurring use of alcoholic beverages despite its negative consequences. Alcohol use and/or abuse is sometimes referred to by the less specific term alcoholism. However, many definitions of alcoholism exist, and only some are compatible with alcohol use and/or abuse.

**Angina pectoris** – commonly known as **angina** – is chest pain due to ischemia of the heart muscle, generally due to obstruction or spasm of the coronary arteries.

**Arthritis** (from Greek *arthro-*, joint + *-itis*, inflammation; plural: arthritides) is a form of [joint disorder](#) that involves [inflammation](#) of one or more joints. There are over 100 different forms of arthritis. The most common form, [osteoarthritis](#) (degenerative joint disease), is a result of trauma to the joint, infection of the joint, or age. Other arthritis forms are [rheumatoid arthritis](#), [psoriatic arthritis](#), and related [autoimmune diseases](#). [Septic arthritis](#) is caused by joint [infection](#).

**Artificial cardiac pacemaker** - A pacemaker is a medical device that uses electrical impulses, delivered by electrodes contacting the heart muscles, to regulate the beating of the heart. The primary purpose of a pacemaker is to maintain an adequate heart rate, either because the heart's natural pacemaker is not fast enough, or there is a block in the heart's electrical conduction system.

**Atherosclerosis** -- or hardening of the arteries -- is the leading cause of **heart attacks**, stroke, and peripheral vascular **disease**

**Atrial fibrillation** is the most common cardiac arrhythmia. It may cause no symptoms, but it is often associated with

palpitations, fainting, chest pain, or congestive heart failure.

### B

**Back pain** is pain felt in the back that usually originates from the muscles, nerves, bones, joints or other structures in the spine. Back pain may have a sudden onset or can be a chronic pain; it can be constant or intermittent, stay in one place or radiate to other areas. It may be a dull ache, or a sharp or piercing or burning sensation. The pain may radiate into the arms and hands as well as the legs or feet, and may include symptoms other than pain. These symptoms may include tingling, weakness or numbness.

**Blackout** /black-out/ (-out) loss of vision or momentary lapse of consciousness . This is a nonspecific term and can apply to numerous causes.

**Bradycarrhythmias** - . Marked bradycardia or a systole can be due to impaired function of the sinus node (sick sinus syndrome), high degree AV block or neurocardiogenic disorders (carotid sinus syndrome, vasovagal syncope). bradycardia-tachycardia syndrome , brady-tachy syndrome a clinical manifestation of the sick sinus syndrome characterized by alternating periods of bradycardia and tachycardia.

### C

**Cervical Spine Disorders** are illnesses that are relatively detrimental to one's physical health. These ailments exist in the cervical spine which is made up of the upper first seven vertebrae, encasing and shielding the Spinal cord. This fragment of the spine starts from the region above the shoulder blades and ends by supporting and connecting the Skull. However, if the cervical spine is injured it can cause many minor or traumatic problems, and although these injuries vary specifically they are more commonly known as "cervical spine disorders" as a whole.

**Chronic kidney disease**, also known as chronic renal disease, is a progressive loss in renal function over a period of months or years. The symptoms of worsening kidney function are non-specific, and might include

feeling generally unwell and experiencing a reduced appetite. Diabetes mellitus

**Convulsion** is a medical condition where body muscles contract and relax rapidly and repeatedly, resulting in an uncontrolled shaking of the body. Because a convulsion is often a symptom of an epileptic seizure, the term *convulsion* is sometimes used as a synonym for *seizure*. However, not all epileptic seizures lead to convulsions, and not all convulsions are caused by epileptic seizures. The word "fit" is sometimes used to mean a convulsion or epileptic seizure.

**Coronary artery bypass graft:** Abbreviated CABG. A form of bypass surgery that can create new routes around narrowed and blocked coronary arteries, permitting increased blood flow to deliver oxygen and nutrients to the heart muscle.

## D

**Deep vein thrombosis, or deep venous thrombosis, (DVT)** is the formation of a blood clot (thrombus) in a deep vein,<sup>[a]</sup> predominantly in the legs. Non-specific signs may include pain, swelling, redness, warmth, and engorged superficial veins. Pulmonary embolism, a potentially life-threatening complication, is caused by the detachment (embolization) of a clot that travels to the lungs. Together, DVT and pulmonary embolism constitute a single disease process known as venous thromboembolism. Post-thrombotic syndrome, another complication, significantly contributes to the health-care cost of DVT.

**Dementia** is a serious loss of global cognitive ability in a previously unimpaired person, beyond what might be expected from normal aging. It may be static, the result of a unique global brain injury, or progressive, resulting in long-term decline due to damage or disease in the body. Although dementia is far more common in the geriatric population, it can occur before the age of 65, in which case it is termed "early onset dementia".

**Demyelinating disease** is any disease of the nervous system in which the myelin sheath of neurons is damaged. This damage impairs the conduction of signals in the affected nerves. In turn, the reduction in conduction

ability causes deficiency in sensation, movement, cognition, or other functions depending on which nerves are involved.

**Diabetes mellitus**, or simply diabetes, is a group of metabolic diseases in which a person has high blood sugar, either because the pancreas does not produce enough insulin, or because cells do not respond to the insulin that is produced. This high blood sugar produces the classical symptoms of polyuria, polydipsia and polyphagia. **Diplopia**, commonly known as double vision, is the simultaneous perception of two images of a single object that may be displaced horizontally, vertically, or diagonally in relation to each other. It is usually the result of impaired function of the extra ocular muscles, where both eyes are still functional but they cannot converge to target the desired object.

## E

**Excessive daytime sleepiness (EDS)** is characterized by persistent sleepiness, and often a general lack of energy, even after apparently adequate or even prolonged night time sleep. EDS can be considered as a broad condition encompassing several sleep disorders where increased sleep is a symptom, or as a symptom of another underlying disorder like narcolepsy, sleep apnea or a circadian rhythm disorder.

## H

**Heart block** is a disease in the electrical system of the heart. This is opposed to coronary artery disease, which is disease of the blood vessels of the heart. While coronary artery disease can cause angina or myocardial infarction, heart block can cause lightheadedness, syncope, and palpitations. **Heart failure** failure, often called congestive heart failure or congestive cardiac failure, occurs when the heart is unable to provide sufficient pump action to maintain blood flow to meet the needs of the body.

**Hemiplegia** is total paralysis of the arm, leg, and trunk on the same side of the body. Hemiplegia is more severe than hemiparesis, wherein one half of the body has less marked weakness. Hemiplegia and Hemiparesis may be congenital, or they

might be acquired conditions resulting from an illness, an injury, or a stroke.

## I

**Intellectual disability** is a broad concept encompassing various intellectual or cognitive deficits, including mental retardation (MR), deficits too mild to properly qualify as MR, various specific conditions (such as specific learning disability), and problems acquired later in life through acquired brain injuries or neurodegenerative diseases like dementia. Intellectual disabilities may appear at any age.

## M

**Maintenance of Wakefulness Test (MWT)** is a sleep study that is frequently required for people who work in transportation or safety-related occupations. It can also be used to assess the success of treatment for sleep.

**Malignancy** (n) - ma·lig·nan·cy - state of being malignant: the condition or quality of being malignant. Cancerous growth: a tumor that invades surrounding tissue and may spread to distant parts of the body by way of the lymphatic or circulatory system

**Metabolic disorder** occurs when abnormal chemical reactions in your body disrupt this process. When this happens, you might have too much of some substances or too little of other ones that you need to stay healthy.

**Metabolism** is the process your body uses to get or make energy from the food you eat. Food is made up of proteins, carbohydrates, and fats. Chemicals in your digestive system break the food parts down into sugars and acids, your body's fuel. Your body can use this fuel right away, or it can store the energy in your body tissues, such as your liver, muscles, and body fat.

**MMSE** - The Mini Mental State Examination (MMSE) is the most commonly used test for complaints of memory problems. It can be used by clinicians to help diagnose dementia and to help assess its progression and severity. This factsheet looks at how the MMSE is used and provides information about the test so

that the person taking it knows what to expect.

**Movement disorders** are neurological conditions that affect the speed, fluency, quality, and ease of movement. Abnormal fluency or speed of movement (called **dyskinesia**) may involve excessive or involuntary movement (**hyperkinesia**) or slowed or absent voluntary movement **Multiple sclerosis**, also known as disseminated sclerosis or encephalomyelitis disseminate, is an inflammatory disease in which myelin sheaths around axons of the brain and spinal cord are damaged, leading to loss of myelin and scarring.

**Muscular Dystrophy** is a group of muscle diseases that weaken the musculoskeletal system and hamper locomotion. Muscular dystrophies are characterized by progressive skeletal muscle weakness, defects in muscle proteins, and the death of muscle cells and tissue.

**Myocardial infarction** - Myocardial infarction or acute myocardial infarction, commonly known as a heart attack, results from the partial interruption of blood supply to a part of the heart muscle, causing the heart cells to be damaged or die.

## N

**Narcolepsy** is a chronic neurological disorder caused by the brain's inability to regulate sleep-wake cycles normally. People with narcolepsy often experience disturbed nocturnal sleep and an abnormal daytime sleep pattern, which often is confused with insomnia. Narcoleptics, when falling asleep, generally experience the REM stage of sleep within 5 minutes, while most people do not experience REM sleep until an hour or so later.

**Neurosis**, in psychiatry, a broad category of psychological disturbance, encompassing various mild forms of mental disorder. Until fairly recently, the term neurosis was broadly employed in contrast with psychosis, which denoted much more severe, debilitating mental disturbances.

**New York Heart Association (NYHA) Functional Classification** provides a simple way of classifying the extent of heart failure. It places patients in one of four categories based on how much they are limited during

physical activity; the limitations/symptoms are in regards to normal breathing and varying degrees in shortness of breath and or angina pain:

## O

**Organic brain syndrome**, also known as organic brain disease Organic mental disorders organic brain disorder, is an older and nearly obsolete general term from psychiatry, referring to many physical disorders that cause impaired mental function. It does not include psychiatric disorders.

## P

**Percutaneous coronary intervention (PCI)?** - Percutaneous coronary intervention is a non-surgical method used to open narrowed arteries that supply heart muscle with blood (coronary arteries).

**Peripheral neuropathy** is damage to nerves of the peripheral nervous system, which may be caused either by diseases of or trauma to the nerve or the side effects of systemic illness. The four cardinal patterns of peripheral neuropathy are polyneuropathy, mononeuropathy, mononeuritis multiplex and autonomic neuropathy. The most common form is peripheral polyneuropathy, which mainly affects the feet and legs.

**Peripheral vision:** Side vision. The ability to see objects and movement outside of the direct line of vision. Peripheral vision is the work of the rods, nerve cells located largely outside the macula (the center) of the retina. The rods are also responsible for night vision and low-light vision but are insensitive to color. As opposed to central vision.

**Personality disorder**, according to the current version of the Diagnostic and Statistical Manual, refers to a class of maladaptive personality traits that is, enduring patterns of behavior, cognitions and inner experience that are exhibited across many contexts and deviate markedly from those accepted by the individual's culture. These patterns are inflexible and are associated with significant distress or

disability. The definitions may vary some according to other sources.

**Posttraumatic stress disorder (PTSD)** is a severe condition that may develop after a person is exposed to one or more traumatic events, such as sexual assault, serious injury or the threat of death. The diagnosis may be given when a group of symptoms such as disturbing recurring flashbacks, avoidance or numbing of memories of the event, and hyperarousal continue for more than a month after the traumatic event.

**PREMATURE ATRIAL CONTRACTIONS (PACs)**, also known as atrial premature complexes (APC) or atrial premature beats (APB) are a common cardiac dysrhythmia characterized by premature heartbeats originating in the atria. While the sinoatrial node typically regulates the heartbeat during normal sinus rhythm, PACs occur when another region of the atria depolarizes before the sinoatrial node and thus triggers a premature heartbeat.

**Psychoactive drug, psychopharmaceutical, or psychotropic** is a chemical substance that crosses the blood-brain barrier and acts primarily upon the central nervous system where it affects brain function, resulting in alterations in perception, mood, consciousness, cognition, and behavior.

**Psychosis** refers to an abnormal condition of the mind, and is a generic psychiatric term for a mental state often described as involving a "loss of contact with reality". People suffering from psychosis are described as psychotic. Psychosis is the term given to the more severe forms of psychiatric disorder, during which hallucinations and/or delusions, violence and impaired insight may occur.

## S

**Stroke**, sometimes referred to by the older term cerebrovascular accident, is the rapid loss of brain function due to disturbance in the blood supply to the brain. This can be due to ischemia caused by blockage, or a hemorrhage. As a result, the affected area of the brain cannot function, which might result in an inability to move one or more limbs on one side of the body, inability to understand

or formulate speech, or an inability to see one side of the visual field.

**Substance use and/or abuse**, also known as drug use and/or abuse, is a patterned use of a substance in which the user consumes the substance in amounts or with methods neither approved nor advised by medical professionals. Substance use and/or abuse often includes problems with impulse control and impulsive behavior.

**Syncope** (<sup>/'sɪŋkəpi/</sup> **SING-kə-pee**), the medical term for **fainting**, is precisely defined as a transient loss of consciousness and postural tone, characterized by rapid onset, short duration, and spontaneous recovery, due to global cerebral hypoperfusion (low blood flow to the brain) that most often results from hypotension (low blood pressure).

## T

**Tachycardia** is a heart rate that exceeds the normal range. A resting heart rate over 100 beats per minute is generally accepted as tachycardia. Tachycardia can be caused by various factors which often are benign. However, tachycardia can be dangerous depending on the speed and type of rhythm.

**Transient ischemic attack** is a transient episode of neurologic dysfunction caused by ischemia – focal brain, spinal cord or retinal – without acute infarction. Symptoms:  
Vertigo · Dizziness · Diplopia · Vision loss · Facial nerve paralysis · Mental confusion · Muscle weakness · Gait abnormality · Hypoesthesia · Numbness of the face or tongue · Eye pain · Slurred Speech

**Traumatic brain injury** (TBI), also known as intracranial injury, occurs when an external force traumatically injures the brain. TBI can be classified based on severity, mechanism, or other features. Head injury usually refers to TBI, but is a broader category because it can involve damage to structures other than the brain, such as the scalp and skull.

## V

**Vasovagal Episode** or vasovagal response or vasovagal attack is a malaise mediated by the vagus nerve. When it leads to syncope or "fainting", it is called a vasovagal syncope,

which is the most common type of fainting. Vasovagal syncope affects young adults more commonly.

**Ventricular fibrillation** (**V-fib** or **VF**) is a condition in which there is uncoordinated contraction of the cardiac muscle of the ventricles in the heart, making them quiver rather than contract properly. Ventricular fibrillation is the most commonly identified arrhythmia in cardiac arrest patients.

**Ventricular tachycardia** (**V-tach** or **VT**) is a tachycardia, or fast heart rhythm, that originates in one of the ventricles of the heart. The ventricles are the main pumping chambers of the heart. This is a potentially life-threatening arrhythmia because it may lead to ventricular fibrillation, a systole, and sudden death.

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**Visual acuity** is defined as the clarity or sharpness of vision, which is the ability of the eye to see and distinguish fine details. Good visual acuity is very important when driving, because it helps people recognize landmarks, avoid obstacles, and read road signs. An ophthalmologist or optometrist measures how clearly a person sees during a routine eye exam using a wall chart with symbols or letters. It is determined by the smallest line the patient can read on the chart. A measurement of 20/200 or worse is considered legally blind. A person's visual acuity can be influenced by several factors, including color, brightness, and contrast. A bright light or color can make it more difficult for the eye to perceive a certain object. On the other hand, the more contrast between an object and its background, the easier it is for the eye to pick out small details. Eyesight is also affected by conditions such as shortsightedness and long sightedness.

## ACRONYMS

ABP – Atrial premature beats  
AED – Anti-seizure drugs  
AHA – American Heart Association  
AHI – Apnea-Hypoxia Index  
AICD – Automated implantable  
cardioverter-defibrillator  
APC – Atrial Premature Complexes  
AVNRT – Atrial Ventricular Nodal Re-  
Entry Tachycardia  
CCA – Canadian Cardiovascular  
Association  
CDR – Clinical Dementia Rating Scale  
CPAP – Continuous Positive Airway  
Pressure Machine  
CT – Computed Tomography  
CVA -Cerebrovascular Accident  
DPS – Department of Public Safety  
DVT- Deep Vein Thrombosis  
EDS – Excessive Daytime Sleepiness  
MAV – Motor Vehicle Accident  
MMSE – Mini Mental State Examination  
MS - Multiple Sclerosis  
MWT – Maintenance of Wakefulness  
Therapy for CDL drivers  
NYAH – New York Heart Association  
OSA – Obstructive Sleep Apnea  
PAC – Premature atrial contractions  
PD – Parkinson’s disease  
PTSD – Post-Traumatic Stress Disorder  
TBI – Traumatic brain injury  
TIA – Transient Cerebral Ischemic Attack  
V-Fib or VF – Ventricular Fibrillation  
V-tach or VT – Ventricular Tachycardia  
WPW – Wolf Parkinson White