Medical Examination Standards

For

Vocational Driver's Licensing



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MEDICAL EXAMINATION STANDARDS

This medical examination standards are to be used to determine the fitness level of the applicants. Any applicant not fulfilling the criteria stated will be considered as unfit to apply for a vocational driving license.

CHAPTER 1. VISUAL DISORDERS

CONDITION	MEDICAL STANDARD
1.1 VISUAL IMPAIRMENT	License may be granted if visual acuity is of at least 6/12 in each eye (i.e. each eye must have at least 6/12, 6/9, 6/6 or better, tested separately) with or without corrective aids such as glasses or contact lenses.
	Test required: Visual acuity test done at 6 meters, using standard Snellen's Chart either number, alphabet, or illiterate E Chart or chart with logarithmic progression, such as in the ETDRS standards, at the distance appropriate for the chart. Test one eye at a time. A person who makes more than two errors on the line with five characters should be regarded as having failed that line. Drivers who require corrective lens to achieve maximum visual acuity should be required to wear their corrective lenses while driving. Charts designed to be used at 3m or greater are recommended.
1.2 VISUAL FIELD DEFECTS (Disorders such as Severe Bilateral Glaucoma, Severe Bilateral	License may be granted if the binocular visual field has an extent of at least 120° along the horizontal meridian and 20° above and below the horizontal midline.
Retinopathy, Retinitis Pigmentosa and other disorders producing field defects including partial or complete homonymous hemianopia / quadrantanopia or complete bitemporal hemianopia)	Test required: Visual fields is done with both eyes open and may be initially screened by Confrontation test. Any person who has or is suspected of having a visual field defect should be referred for expert assessment by an Optometrist or an Ophthalmologist for an objective test using an automated perimetry with Goldmann Standard testing conditions such as Humphrey, Octupus, Kowa Automated Visual Field Analyzer and others. Use the Esterman function Test and test with both eyes open.
1.3 DIPLOPIA (Double Vision)	Not qualified for licensing if diplopia is present within the central 40° primary gaze (i.e. 20° to the right, left, above and below fixation, even if the diplopia is correctable with a prism).

CONDITION	MEDICAL STANDARD
1.4 COLOUR VISION DEFECT	Not qualified for licensing if severe protanopia (severe red defect) is present: Those who fail to recognize correctly 4 plates of the Ishihara Test for Colour Deficiency (38 plates) should be referred to the specialist for further evaluation of colour vision. Confirmatory tests for colour vision include Farnsworth-Munsell Dichotomous D-15 Test, SPP Pseudoisochromatic Part 1 & Part 2 and Fransworth-Munsell 100 Hues Test.
1.5 NIGHT BLINDNESS	Not qualified for licensing if night blindness is present.
	Currently there are no standard tests or procedures that can be recommended for assessing night blindness. Condition is elicited from history.

CHAPTER 2. OTORINOLARYNGOLOGY DISORDERS

CONDITION	MEDICAL STANDARD
2.1 HEARING LOSS	Compliance with the standards should be clinically assessed initially and possible hearing loss measured by audiological testing that is performed by certified personnel and using certified facilities.
	Note: - "Certified personnel" are Audiologist's and certified Audiometricians - "Certified facilities" are facilities that are certified by DOSH or any licensing body
	Not qualified for licensing If the person has an unaided average hearing threshold level of equal to or greater than 60dB in the better ear.
	(Average hearing threshold is the simple average of pure tone air conduction thresholds at 500, 1000, 2000 and 3000Hz).
	License may be granted, taking into account the opinion and endorsement of an ORL specialist and the nature of the driving task, and subject to periodic review if the standard is met with a hearing aid.
	Further assessment of the person may be arranged with the RTD authority and advice may be sought regarding modifications to the vehicle to provide a visual display of safety critical operations.

	MEDICAL STANDARD
2.2 VESTIBULAR DISORDERS	Note: Vestibular vertigo is vertigo caused by disturbances of vestibular system. License may be granted, taking into account the opinion and endorsement of an ORL specialist, Physician and the nature of the driving task, and subject to periodic review: • For persons who have had vertigo caused by Meniere's disease or recurring unheralded attacks of vertigo or are free of vertigo for at least 12 months; • For persons who have had one episode of vertigo caused by Acute Labyrinthitis (deafness and vertigo), Acute Neurolabyrinthitis (Vestibular Neuronitis), or any other type of vertigo or are free of vertigo for at least 6 months; • For persons who have had Benign Paroxysmal Positional Vertigo (BPPV) only, free of symptoms and signs of BPPV for at least 6 months.
	 The ORL specialist's opinion to be sought on: The nature of the condition and response to treatment; and The functional ability to operate the vehicle

CHAPTER 3. NEUROLOGICAL DISORDERS

CONDITION	MEDICAL STANDARD
3.1 EPILEPSY	Free of epileptic attacks (including nocturnal attacks) for at least 5 years without medication.
3.2 FIRST EPILEPTIC SEIZURE/ SOLITARY FIT	License may be granted after taking into account specialist's opinion, size and condition of the vehicle, duties to be performed and hours of worked (with conditions including limited and/or restricted use): Person has had a single provoked seizure event; and Provocative factors can be avoided reliably; and Seizure free for 1 year; and Does not take anti-epileptic medication; and EG shows no epileptiform activity
3.3 LOSS OF CONSCIOUSNESS (LOC) DUE TO SIMPLE FAINT LOSS OF CONSCIOUSNESS DUE TO UNEXPLAINED SYNCOPE AND LOW RISK OF RECURRENCE	Needs opinion from a physician whether the condition will cause LOC or loss of ability to control a vehicle. Suggested 6 months waiting period lapse from the time of the episode and complete neurological examination.

CONDITION	MEDICAL STANDARD
3.4 LOSS OF CONSCIOUSNESS DUE TO UNEXPLAINED SYNCOPE AND HIGH RISK OF RECURRENCE: Abnormal ECG Structural heart disease Syncope cause injury More than 1 episode in previous 6 months Neurocutaneous sign Abnormal cardiac findings Known medical Conditions	License may be granted if the result is negative and no medication is required to control the condition. Certification should be deferred for at least 6 months until the driver has fully recovered from that condition and has no existing residual complications and not taking medication to control the condition. Note: Certification should be done by a physician.
3.5 NARCOLEPSY/ CATAPLEXY AND OTHER SLEEP DISORDERS	License may be granted on an individual basis as assessed by a Physician or Psychiatrist.
3.6 CHRONIC NEUROLOGICAL DISORDERS (e.g. Parkinson's disease)	 License may be granted after taking into account: Response to treatment Annual driver tester report Modification to the vehicle if necessary by Rehabilitation Physician or Occupational Therapist
3.7 LIABILITY TO SUDDEN ATTACKS OF DISABLING GIDDINESS AND FAINTING	If condition is sudden and disabling, not qualified for licensing. If symptom free and controlled for at least one year, may be considered.
3.8 CEREBROVASCULAR DISEASES (including Stroke due to Vascular diseases, Intra Cranial Haemorrhage and Transient Ischemic Attack)	License may be granted and certified by a Physician or Rehabilitation Physician, if satisfactory functional recovery is attained within a period of 6 months from the date of the event.
3.9 CENTRAL NERVOUS SYSTEM INFECTIONS	 During acute illness, must stop driving: For meningitis - 5 years without medication For encephalitis - 10 years without medication If seizure occurs during or after convalescence - must stop driving. License may be granted if 10 years free of attack without medication and do not cause danger whilst driving. Also depends on the residual physical disability as assessed by A Physician or Neurosurgeon.

CONDITION	MEDICAL STANDARD
3.10 DISORDERS OF THE SPINAL CORD AND PERIPHERAL NERVOUS SYSTEM (e.g. Peripheral Neuropathy, Cervical Spondylosis)	 License may be granted after taking into account: Response to treatment Annual driver tester report Modification to the vehicle if necessary by rehabilitation physician or occupational therapist
3.11 NERVOUS SYSTEM TUMOUR	Not qualified for licensing until cleared by relevant specialist.
3.12 SERIOUS CRANIOSPINAL INJURIES (Operated Intracerebral Hematoma or Compound Depressed Fracture or Dural Tear with more than 24 hours Post-Traumatic Amnesia)	Not qualified for licensing until cleared by relevant specialist.
3.13 NON TRAUMATIC CRANIOSPINAL HAEMORRHAGE (e.g. Subarachnoid Haemorrhage)	Not qualified for licensing until cleared by relevant specialist.
3.14 HYDROCEPHALUS	License may be granted if uncomplicated and has no associated neurological deficit.
3.15 COMPLICATED MIGRAINE	Not qualified for licensing until cleared by relevant specialist.
3.16 CEREBRAL PALSY	Not qualified for licensing unless cleared by relevant specialist.

CHAPTER 4. MUSCULOSKELETAL DISORDERS

CONDITION

MEDICAL STANDARD

4.1 MUSCULOSKELETAL DISORDERS

Not qualified for licensing:

- 1. If there is amputation or congenital absence of a limb (whole or part) and is required to operate a hand or foot control; **or**
- 2. If the thumbs are missing from both hands; or
- 3. If rotation of the cervical spine is chronically restricted to less than 45° to the left or right; **or**
- 4. If chronic pain and restriction of peripheral joint movements interfere with the relevant movements or concentration such that a vehicle cannot be operated safely; **or**
- 5. If there is ankylosis or chronic loss of joint movements of sufficient severity that control of vehicle is not safe.

License may be granted following assessment by qualified Orthopaedic Surgeon, taking into account the nature of the driving task and **subject to skill performance evaluation and annual review:**

- If the person has a lower limb prosthesis for a below knee amputation and does not have to operate a foot pedal with the prosthesis and the clutch pedal (if present) has been modified for use by a prosthesis. Automatic transmission and / or modification to hand controls may also be required. A spinner knob will be needed if a power-boosted handbrake control has been added; or
- The person has the forefoot, first metatarsophalangeal joint or large toe amputated; or
- The person has less than a thumb and two fingers on each hand or only one arm, provided a spinner knob or other device is fitted to the vehicle; **or**
- There is pain and stiffness in any joint or a joint replacement, having regard for the range of movement and muscle power required to operate a heavy vehicle and the task of getting in and out of vehicles.

CHAPTER 5. PSYCHIATRIC DISORDERS

CONDITION	MEDICAL STANDARD
5.1 PSYCHIATRIC DISORDERS	Not qualified for licensing :
	 If the person has an Acute or Chronic Psychosis (e.g. Schizophrenia, Bipolar Mood Disorder), Depressive Psychosis; Organic Psychosis (e.g. Dementia or Druginduced Psychosis etc.); or If the person is using or dependent on psychotropic drugs which will impair driving performance on a long-term basis; or If the person's judgment or perception, cognitive or motor function is affected by a mental disorder (e.g. Dementia, Post-Stroke, Adult ADHD); or If the person has any psychiatric disorder with features such as aggression, violence etc. which are hazardous to driving; or If the examining doctor believes that there is a significant risk of a previous psychotic condition relapsing.
	License may be granted if the condition is well controlled and the person is compliant with treatment, after taking into account the report by a psychiatrist and the nature of the driving task and subject to periodic review as determined by a psychiatrist.

CHAPTER 6. DRUG AND ALCOHOL ABUSE AND DEPENDENCY

MEDICAL STANDARD CONDITION 6.1 ALCOHOL ABUSE AND Those with urine screening test positive should be **DEPENDENCY** referred for confirmatory test. Confirmatory testing may be done at the State Government Hospitals, Hospital Kuala Lumpur and Institute of Medical Research. Not qualified for licensing: If there is alcohol dependency If the person has a strong history of alcohol abuse and relevant biochemical findings License may be granted after taking into account appropriate specialist opinion, nature of the driving task and subject to periodic review: If the person has stopped drinking for a substantial period (for at least 12 months); and Is compliant with treatment; and Shows no evidence of end organ damage relevant to driving; and Shows no evidence of alcohol related seizures for at least two years. **6.2 SUBSTANCE DEPENDENCE** Those with urine screening test positive should be AND ABUSE referred for confirmatory test. Confirmatory testing may be done at the State Government Hospitals, Hospital Kuala Lumpur and Institute of Medical Research. Not qualified for licensing: If there is clear evidence of dependency or persistent abuse of any psychoactive drugs. License may be granted after taking into account appropriate specialist opinion, nature of driving task and subject to periodic review: • Persons who are compliant with treatment for illicit addiction (including Methadone Buprenorphine medication) for at least 12 months; and The severity of the addiction(s), the response to treatment and the driving requirements are taken into account.

CHAPTER 7. CARDIOVASCULAR DISORDERS

CONDITION	MEDICAL STANDARD
7.1 ANGINA PECTORIS	License may be granted when free from Angina for at least 6 weeks while on medication, but if indicated, to perform at least a resting ECG. A Stress Test or equivalent diagnostic investigation may be required.
7.2 ACUTE CORONARY SYNDROMES (ACS)	Driving to cease for a minimum of 6 weeks - return to driving will be permitted when the person is symptom free, there is no other disqualifying condition and the person is able to complete the exercise ECG to the required standards: • There is an exercise tolerance of greater than 9 minutes (stage 3) on the Bruce Treadmill Test • Less than 2 mm ST segment depression on an exercise ECG
	In addition the LVEF must be ≥ 40%.
7.3 ACUTE MYOCARDIAL INFARCTION	 Driving to cease for a minimum of 3 months - return to driving will be permitted when the person is symptom free, there is no other disqualifying condition and the person is able to complete the exercise ECG to the required standards: There is an exercise tolerance of greater than 9 minutes (stage 3) on the Bruce Treadmill Test Less than 2 mm ST segment depression on an exercise ECG In addition the LVEF must be ≥ 40%.
7.4 ANGIOPLASTY	 Driving to cease for a minimum of 6 weeks - return to driving will be permitted when the person is symptom free, there is no other disqualifying condition and the person is able to complete the exercise ECG to the required standards: There is an exercise tolerance of greater than 9 minutes (stage 3) on the Bruce Treadmill Test Less than 2 mm ST segment depression on an exercise ECG In addition the LVEF must be ≥ 40%.

CONDITION	MEDICAL STANDARD
7.5 CABG	 Driving to cease for a minimum of 3 months - return to driving will be permitted when the person is symptom free, there is no other disqualifying condition and the person is able to complete the exercise ECG to the required standards: There is an exercise tolerance of greater than 9 minutes (stage 3) on the Bruce Treadmill Test. Less than 2 mm ST segment depression on an exercise ECG. In addition the LVEF must be ≥40%.
7.6 LEFT VENTRICULAR ASSIST DEVICES	Not qualified for licensing permanently.
7.7 AORTIC ANEURYSM	The person should not drive for at least 3 months post - repair.
	Not qualified for licensing if patient has a large (more than 5.5 cm) Aortic Aneurysm, Thoracic or Abdominal. Periodic reviews are necessary.
7.8 CAROTID ARTERY STENOSIS	Not qualified for licensing if symptomatic or the degree of stenosis is severe enough to warrant intervention.
	License may be granted if symptom free after repair or stent implantation.
7.9 PERIPHERAL ARTERIAL DISEASE	License may be granted if there are no symptoms of severe limb ischemia.
7.10 DEEP VEIN THROMBOSIS (DVT)	Not qualified for licensing if the person has Deep Vein Thrombosis which is liable to recurrence or embolus.
7.11 ARRHYTHMIA	Not qualified for licensing: • If the person has a history of recurrent or persistent arrhythmia, which may result in syncope or incapacitating symptoms.
	License may be granted when the arrhythmia is controlled for at least 3 months or the arrhythmia is successfully cured, provided that the LV ejection fraction is satisfactory (i.e. LVEF is > 40%) and there is no other disqualifying condition.

CONDITION	MEDICAL STANDARD
7.12 PACEMAKER IMPLANT	The person should not drive for at least 6 weeks after insertion of pacemaker and the person is symptom free. License may be granted thereafter provided that there are no other disqualifying conditions.
7.13 SUCCESSFUL CATHETER ABLATION	License may be granted if there are no recurrent symptoms for 6 weeks and there are no other disqualifying conditions.
7.14 UNPACED CONGENITAL COMPLETE HEART BLOCK	Not qualified for licensing if symptomatic or severe bradycardia (Heart rate below 30 beats per minute).
7.15 BIVENTRICULAR PACEMAKER	Not qualified for licensing permanently.
7.16 IMPLANTABLE CARDIOVERTER DEFIBRILLATOR (ICD)	Not qualified for licensing permanently.
7.17 PROPHYLACTIC ICD IMPLANT	Not qualified for licensing permanently.
7.18 HYPERTENSION	Not qualified for licensing if Resting Blood Pressure consistently exceeds 180 mmHg systolic or more, and/or 100 mmHg diastolic or more; • With or without medication or • Medication causes symptoms which affect driving ability.
	License may be granted if the person is treated with Antihypertensive drug therapy and the blood pressure is not greater than 150/95 mmHg. Ideal blood pressure is less than 140/90 mmHg.
7.19 CHRONIC AORTIC DISSECTION	License may be granted: If maximum transverse diameter of the aorta, including false lumen / thrombosed segment, does not exceed 5.5cm If blood Pressure is well controlled (120/80 mmHg).
7.20 MARFAN'S SYNDROME	License may be granted: If no major organ involvement and there is no other disqualifying condition.

CONDITION	MEDICAL STANDARD
7.21 DILATED CARDIOMYOPATHY	 Not qualified for licensing: If symptomatic and ejection fraction < 40%. License may be granted, taking into account the opinion of a cardiologist, and the nature of the driving task, and subject to annual review: If there is an ejection fraction of ≥ 40%.
7.22 HYPERTROPHIC CARDIOMYOPATHY (HCM)	 Not qualified for licensing if symptomatic. License may be granted if they do not have more than one of the listed criteria below: 1) There is no family history of sudden premature death from presumed HCM. 2) The cardiologist can confirm that the HCM is anatomically mild. 3) No serious arrhythmia has been demonstrated i.e. Ventricular Tachy - arrhythmia excluding isolated ventricular pre-excitation beats. 4) Hypotension does not occur during the completion of 9 minute exercise testing.
7.23 HEART OR HEART LUNG TRANSPLANT	Not qualified for licensing.
7.24 PULMONARY EMBOLISM	License may be granted, taking into account the opinion of an appropriate specialist, and the nature of the driving task, and subject to periodic review: • After an appropriate non-driving period of a minimum of 6 months or as determined by the attending doctor; and • Depending on the cause of the embolus and response to treatment.
7.25 HEART VALVE DISEASE	License may be granted after taking into account the opinion of a Cardiologist, and the nature of the driving task, and subject to annual review: If the person's cardiological assessment shows Mild Valvular Disease of no haemodynamic significance. Three (3) months following successful surgery. Ejection Fraction > 40%.

CONDITION	MEDICAL STANDARD
7.26 HEART FAILURE	Not qualified for licensing if symptomatic.
	License may be granted provided that the LV ejection fraction is good i.e. LVEF is \geq 40%, the exercise/functional test requirements can be met and there are no other disqualifying condition.
7.27 CONGENITAL HEART DISEASE	Not qualified for licensing when complex or severe disorder(s) is (are) present after assessment by an appropriate consultant.
	Those with minor diseases and others who have had successful repair of defects or relief of valvular problems, fistulae etc. may be licensed provided that there are no other disqualifying conditions. Periodic reviews may be necessary.
7.28 SYNCOPE DUE TO HYPOTENSION (VASOVAGAL AND AUTONOMIC DYSFUNCTION)	Not qualified for licensing if the condition is severe enough to cause episodes of loss of consciousness without warning.

CHAPTER 8. DIABETES MELLITUS AND OTHER ENDOCRINE DISEASES

CONDITION	MEDICAL STANDARD
8.1 GENERAL GUIDELINES FOR DIABETES MELLITUS	Not qualified for licensing (for initial application and maintenance) if :
	 Hypoglycemia within the previous 6 months which requires help from another person or producing loss of consciousness. Hypoglycemia appearing in the absence of warning symptoms (hypoglycemia awareness). Uncontrolled Diabetes: HbA1c > 12% within the last 6 months. There is presence of end organ effects which may affect driving; High risk Proliferative Retinopathy. Peripheral Neuropathy or Cardiovascular diseases with the potential to affect driving (refer to particular section).
8.2 INSULIN TREATED DIABETES MELLITUS	All applicants on insulin should be assessed by attending doctor trained in diabetic care.
	Not qualified for licensing according to the above mentioned criteria in 8.1.
	Further exclusion criteria for insulin treated applicants : • Have less than 2 follow-up clinic visits during the last year for diabetic care.
8.3 METABOLIC AND ENDOCRINE DISORDERS (OTHER THAN DIABETES)	Because of the diverse manifestation of these conditions, each person will require an individual assessment regarding likelihood of acute loss of control of their vehicle.
	If there is a real risk of acute loss of control then the criteria would not be met; appropriate specialist's opinion must be obtained.
	Specific defects which may be associated with an Endocrine Disorder may also need evaluation, e.g. effects on visual field from Pituitary Tumours or Exophthalmos in Hyperthyroidism.

CHAPTER 9. RESPIRATORY DISORDERS

CONDITION	MEDICAL STANDARD
9.1 CHRONIC LUNG DISEASES (e.g Asthma, COPD, Interstitial Lung diseases)	Drivers who are diagnosed with chronic respiratory illnesses likely to interfere with their ability to drive despite optimal therapy will not be qualified for licensing.
	 Note: Public health aspects must be considered in drivers with active Tuberculosis. Cerebral metastasis must be ruled out in drivers with treated Lung Cancer.
9.2 RESPIRATORY FAILURE	Not qualified for licensing: If the person has severe respiratory failure. If the person has unstable diseases requiring oxygen therapy.

CHAPTER 10. RENAL DISORDERS

CONDITION	MEDICAL STANDARD
10.1 RENAL FAILURE AND OTHER RENAL DISEASES	 Not qualified for licensing: If the person has end - stage renal failure (requiring dialysis) or advanced predialysis renal failure (GFR < 20% of normal).
	 License may be granted, taking into account the opinion of a renal specialist, and the nature of the driving task, and subject to periodic review: If the patient's condition is stable with limited comorbidities.

CHAPTER 11. MISCELLANEOUS

CONDITION

MEDICAL STANDARD

11.1 RESPIRATORY
RELATED
SLEEP DISORDERS

(OBSTRUCTIVE SLEEP APNOEA SYNDROME / OSA) Drivers who are diagnosed with OSA and require treatment are advised to have annual review by a sleep specialist to ensure adequate treatment is maintained.

Not qualified for licensing:

- If the person has established Sleep Apnoea Syndrome (Sleep Apnoea on a diagnostic sleep study and excessive daytime sleepiness) with moderate to severe sleepiness until treatment is effective.
- If there is a history suggestive of apnoea in association with severe day time sleepiness, until investigated and treated. Severe sleepiness is indicated by frequent self reported sleepiness while driving motor vehicle crashes caused by inattention or sleepiness or an **Epsworth Sleepiness Scale score** of 16-24.

License may be granted, taking into account the opinion of a specialist in sleep disorders and the nature of driving task and subject to annual review:

 For those with established Sleep Apnoea Syndrome (Sleep Apnoea on a diagnostic sleep study and excessive daytime sleepiness) who are on satisfactory treatment.

REFERENCES

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