

MEDICAL ASPECTS OF FITNESS TO DRIVE

A guide for health practitioners

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www.nzta.govt.nz/resources/medical-aspects/

Foreword

The NZ Transport Agency and all those working in the health arena are well aware of the impact road crashes have on New Zealanders' lives – the people injured, their caregivers, families of those killed, health professionals and emergency services workers who deal with the aftermath of a crash.

We need to be confident, with so much at stake, that all the drivers on our roads are medically fit to control their vehicle, see other road users, make speed and distance judgements and react safely to a potentially hazardous situation.

Health practitioners cannot assume that the driver licensing system will pick up individuals who are unfit to drive, so it is important that you consider medical fitness to drive in your everyday dealings with patients, not just when someone wants a medical or eyesight certificate for driver licensing purposes. Except for older drivers, most drivers are issued licences for 10 years. For those who develop some types of medical conditions, this is ample time for their condition to deteriorate to a point where they are unfit to drive.

Determining that someone is no longer fit to drive is a weighty responsibility, but the alternative is to allow them to continue to drive when they put their own and others' lives at risk. Thankfully, health professionals are just as committed to road safety as we are. The relationship formed between the Transport Agency and health professionals goes a long way towards ensuring that New Zealand's roads are safe for all to enjoy.

This document is intended to help you assess an individual's fitness to drive. We acknowledge that we could never comprehensively cover all the medical conditions that might affect a person's ability to drive – this document is only a guide and should be treated as such.

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Introduction

New Zealand's driver licensing system aims to make sure drivers are fit and competent to drive in order to minimise the number of people who lose their lives or are injured in car crashes. When an individual has a medical condition that affects their ability to drive safely, they are a risk to other road users as well as themselves.

Overseas reports vary as to how medical factors contribute to road crashes. In New Zealand, between 2003 and 2007, medical-related factors were cited as a contributing factor in crashes that killed 82 people, seriously injured another 459 people and caused minor injuries for another 1692. These figures are likely to underestimate the contribution of medical factors to crashes, as it can be difficult for the Police to determine when a driver has a medical condition, and if this contributed to a crash.

This guide is to help health practitioners assess the fitness to drive of any individual. The responsibilities and obligations of health practitioners, in both ethical and legal terms, are set out in the next section. Placing licensing restrictions on an individual is a serious matter, as may be the consequences of allowing an individual to continue to drive if they are unfit to do so.

We recognise that not all medical conditions, or all medical situations that individuals may face, can be included in a document of this nature and changes in practice and management may require revision of the advice set out.

These guidelines cover both private and commercial licence classes and endorsement types. Generally, the standards for commercial licence classes and endorsement types are higher than for private licence classes and endorsements in recognition of the greater road safety risks from commercial driving. Health practitioners are reminded that special attention needs to be paid to applicants and holders of commercial licence classes for this reason.

Contact details

In law, the Transport Agency has certain decision-making powers. Operationally, however, health practitioners should write to the Chief Medical Adviser if they need the Transport Agency to consider or approve:

- matters relating to individual cases
- matters relating to 'medical fitness to drive' general policy
- suggestions on further revision of the advice in this guide

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1. General matters

This section covers:

- legal obligations on health practitioners
- general factors to consider in assessing fitness to drive
- medical examinations
- reporting an individual's unfitness to drive
- second opinions
- an individual's rights of appeal
- issues associated with the disclosure of personal information
- occupational therapists
- changes in medical treatments.

1.1 Legal obligations on health practitioners

Part 7 and part 13 of the Land Transport (Driver Licensing) Rule 1999 requires medical examinations to be carried out with regard to the medical policies and standards contained in this booklet *Medical aspects of fitness to drive: a guide for health practitioners*. This booklet is therefore part of New Zealand's legislation framework, although it remains a guide to good practice rather than legally enforceable criteria.

Health practitioners have two main legal obligations relating to fitness to drive under transport legislation. The law requires:

- health practitioners to advise the Transport Agency (via the Chief Medical Adviser) of any individual who poses a danger to public safety by continuing to drive when advised not to (section 18 of the Land Transport Act 1998 – see section 1.4)
- health practitioners to consider *Medical aspects of fitness to drive* when conducting a medical examination to determine if an individual is fit to drive.

There are also obligations under section 19 of the Land Transport Act 1998 (see section 8 and appendix 2 of this booklet) for certain persons to undertake actions relating to patients subject to a Compulsory Inpatient Treatment Order.

Section 18 of the Land Transport Act 1998 also provides that a health practitioner or registered optometrist who gives notice in good faith¹ under section 18 will not be subject to civil or professional liability because of any disclosure of personal medical information in that notice.

1.2 General factors for health practitioners to consider

In assessing an individual's fitness to drive, remember that the issue is often not whether the individual has a particular medical condition, but whether the condition has produced significant risk factors in respect to an individual's ability to drive safely and whether they are a danger to themselves or others.

Health practitioners should consider the following general factors, in addition to the guidance outlined under each section, when assessing an individual for fitness to drive:

- Individual's ability to drive safely, eg some individuals may not respond well to treatment, and therefore may not be able to drive at the end of the recommended minimum period of refraining from driving
- Risk of serious motor crashes due to sudden driver failure, eg presence of any factors that may cause sudden loss of vision or sudden impairment of driving ability
- Type of licence held and type of driving undertaken – professional drivers spend up to an entire working week in their vehicle, and that vehicle can weigh greater than 25,000kg or carry many passengers. A crash involving such a vehicle could put many people at risk. In addition to the type of licence or endorsement held, the type of driving an individual undertakes should also be considered, eg if an individual regularly drives buses or unloads heavy vehicles
- Medication – consider the effects of medications, and likely compliance with medications, on the individual's ability to drive safely
- Individual's motor vehicle crash history (if known) – health practitioners may need to recommend a longer period of refraining from driving if an individual has a history or pattern of crashes that may be associated with their condition. Where a health practitioner is aware of a medically related crash, they must inform the Transport Agency if the individual's medical condition remains unresolved and the individual is likely to continue to drive (refer to section 1.4)
- Presence of multiple medical conditions – where an individual has one or more medical conditions, consider any possible combined effects on their ability to drive safely.

1. An act that is done in good faith is if the act was done honestly with no ulterior motive, even if done negligently

1.3 Medical examinations

Health practitioners must recognise their role in conducting the examination. Driving is not a right and the health practitioner has a legal and ethical obligation to ensure that the safety of other road users, as well as the individual, is the primary concern in making any decision on fitness to drive.

It is tempting for the health practitioner to act as an advocate for their patients but this is inappropriate. In situations where this cannot be resisted, health practitioners should be prepared to disqualify themselves and refer their patients to another health practitioner. This may be a wise procedure under other circumstances as well, especially when there is a risk of damaging an established therapeutic relationship. Nonetheless, as a normal rule, the examiner is expected to be the patient's regular general practitioner.

Part 7 and part 13 of the Land Transport (Driver Licensing) Rule 1999 requires medical examinations to be carried out with regard to the guidance contained in this booklet. The approved form of medical certificate requires the health practitioner or a registered optometrist, as appropriate, to sign that the examination has been carried out with regard to this booklet and that the requirements for certifying a person fit to drive have been followed.

Changes in medical assessment practices

Technology or knowledge on assessing fitness to drive may change over time. Therefore, where this guide recommends a particular test or examination, if a different test or examination is subsequently generally used that achieves a similar level of assessment, then this can be used.

Health practitioners, optometrists and occupational therapists are expected to keep themselves apprised of major changes in medical knowledge that may influence their assessment or treatment of drivers.

Medical certificates

The Transport Agency has developed a *Medical certificate for driver licence* (DL9) for health practitioners to use. Copies of this certificate are available on the automated ordering system or by calling our contact centre.

The extent of the examination

The extent of a medical examination for fitness to drive will depend partly on:

- the nature of the licence required, and
- the purpose of the medical examination².

It is important that a health practitioner undertakes the appropriate level of examination, even when they know the individual well.

Differences in examination requirements between private and commercial drivers

Commercial drivers are expected to meet higher safety standards than other motorists.

The Land Transport (Driver Licensing) Rule 1999 defines classes of driver licence and types of licence endorsement (see appendix 3). This rule also provides the requirements for obtaining and renewing licences for the various categories of commercial driver, including the requirement to produce a medical certificate applicable to the class of licence or type of endorsement.

Given the potential severity of a crash involving a commercial vehicle, the following commercial type drivers applying for or renewing their licence or endorsement must be examined thoroughly:

- classes 2, 3, 4 or 5
- passenger endorsement (P)
- vehicle recovery endorsement (V)
- driving instructor endorsement (I)
- testing officer endorsement (O).

The medical examination requirements for lower (private) licence classes or endorsement types are generally less than for commercial drivers. Lower licence classes or endorsement types include:

- classes 1 or 6
- the following endorsement types:
 - dangerous goods endorsement (D)
 - forklift endorsement (F)
 - roller endorsement (R)
 - tracks endorsement (T)
 - wheels endorsement (W).

2. For example, a cardiologist would not be expected to conduct a full examination of the patient as detailed in this guide but rather conduct the appropriate level of cardiac examination.

Examination of older drivers

Examination of the older driver has particular problems, especially in respect to cognitive skills and reaction times. Factors to check for older drivers are outlined in section 9. Whenever there is doubt about a person's abilities and fitness to drive, the person should be assessed by an occupational therapist with training in driver assessment.

General elements of an examination

The examination should include:

- a careful history, noting particularly whether the person has been found unfit to drive a motor vehicle in the past and the reasons
- particular attention to any history of: epilepsy or other conditions of impaired consciousness; neurological conditions; mental disorders; diabetes; severe hypertension and other cardiovascular conditions, especially ischaemic heart disease; locomotor disorders; or hearing or visual problems
- a note of any medications that might affect the ability to drive safely.

Clinical examination

The clinical examination itself should include:

- cardiovascular system
- respiratory system
- musculoskeletal system
- central nervous system (noting especially matters such as coordination and sensory loss)
- vision (according to the specific requirements of section 6)
- hearing.

In the report, also note any cognitive or psychiatric issues or defects of mental capacity sufficient to affect driver safety.

Additional tests may be required when clinical examination has raised the possibility of potentially significant problems.

It is important that a proper record is kept of any examination undertaken in the individual's clinical notes. This is not in order to 'police' health practitioners' records, but for the practitioner's protection in medico-legal cases and in order to be able to deal with any questions and appeals that may arise.

1.4 Reporting an individual's unfitness to drive

A health practitioner must report that an individual is unfit to drive or should only drive with certain licence conditions if:

- the health practitioner provides a medical certificate for driver licensing renewal or application purposes
- the individual is likely to continue to drive contrary to medical advice (section 18 of the Land Transport Act 1998).

Section 18 of the Land Transport Act 1998 requires health practitioners to advise the Transport Agency in cases where the mental or physical condition of the licence holder is such that, in the interests of public safety, the person should not be permitted to drive or only permitted to drive subject to limitations and conditions – and it is considered that the person is likely to drive against medical advice. The full wording of this section is set out in appendix 1.

There are also reporting requirements under section 19 of the Land Transport Act 1998 (outlined in section 8 of this guide) that relate to individuals subject to a Compulsory Inpatient Treatment Order, or special patients under the Mental Health (Compulsory Assessment and Treatment) Act 1992.

Procedures for notifying the Transport Agency of an individual under section 18 of the Land Transport Act 1998

The general steps are:

- inform the individual that they are unfit to drive and the reasons for this
- if the individual accepts they are unfit to drive and advises that they will not drive, take no further action
- if the individual does not accept the advice and is likely to continue to drive, advise the Transport Agency (section 18 of the Land Transport Act 1998) – an example section 18 notification letter is outlined in appendix 4.

Other advice

Health practitioners may wish to advise patients in writing, as well as verbally, that they are unfit to drive and when they can expect the situation to be reviewed. Some individuals may need to be advised that they are unfit to drive in the presence of a third party, such as a supportive family member.

Possible actions by the Transport Agency following notification under section 18 of the Land Transport Act 1998

A number of options are available to the Transport Agency, including:

- requiring the licence holder to undergo further examination (which could include an assessment by an occupational therapist or a specialist) by an appropriate practitioner nominated by the Transport Agency
- imposing licence conditions
- medically suspending an individual's licence, subject to further investigation
- revoking an individual's licence.

Health practitioners can usually successfully negotiate short-term cessation of driving with patients. However, if longer periods are necessary, it is recommended that health practitioners advise their patients both verbally and in writing. It is also recommended that the patient be told how soon they might expect to have this situation reviewed. If a practitioner suspects that a patient is continuing to drive against medical advice, they are legally obliged to inform the Transport Agency under section 18 of the Land Transport Act 1998 (see above).

Where the guidance may appear inappropriate for an individual

The guidance provided may not be appropriate for all individuals, given the range of manifestations of some medical conditions. The Transport Agency may decide to grant an individual a licence or renew a licence where the guidance is considered inappropriate for an individual. This may include the granting of conditional or restricted licences, such as a licence that requires the licence holder to have an annual medical review.

If a health practitioner considers that the advice is inappropriate for an individual, they should write to the Chief Medical Adviser, outlining the individual's circumstances. As a general rule, for commercial drivers and/or for conditions that may include the possibility of sudden loss of consciousness or sudden inability to control a vehicle, a favourable specialist report will generally be required.

1.5 Second opinions and dealing with individuals who are not regular patients

Care should be taken when health practitioners are providing second opinions or dealing with individuals who are not regular patients. For some individuals, the potential prohibition on driving may encourage them to deceive health practitioners about their fitness to drive.

Health practitioners in these situations should:

- ask permission from the individual to request their medical file from their regular practitioner
- conduct a more thorough examination of the individual than usually would be undertaken
- ask the individual if they have any of the conditions listed on the medical certificate, eg epilepsy.

1.6 Individual's rights of appeal of a licensing decision

An appeal system enables any individual to appeal against the decision of the Transport Agency to suspend or revoke a licence or place conditions on a licence. Section 106 of the Land Transport Act 1998 provides that any person who is dissatisfied with any decision made under the act by the Transport Agency in respect of driver licensing may appeal to a district court.

1.7 Issues associated with the disclosure of personal information

Liability for disclosure of personal medical information to the Transport Agency

If a practitioner advises the Transport Agency that a person is unfit to drive under section 18, and does so in good faith, they will not be subject to civil or professional liability resulting from the disclosure of personal medical information.

The DL9 and the *Eyesight certificate for driver licence* (DL12) require a licence applicant to consent to the release to the Transport Agency of any medical records relevant to their application.

Privacy Act 1993

It is important to note that principle 11 of the Privacy Act 1993 advises that personal information may be disclosed where such disclosure is necessary 'to avoid prejudice to the maintenance of the law by any public sector agency, including the prevention, detection, investigation, prosecution and punishment of offences'. The Transport Agency is a public sector organisation and section 18 of the Land Transport Act 1998 requires health practitioners to provide information about their patients under certain circumstances. In these circumstances, the provisions of the Privacy Act that protect such information do not apply. Principle 11 of the Privacy Act 1993 also recognises that the disclosure of personal information may be necessary to prevent or lessen a serious and imminent threat to:

- public health or public safety, or
- the life or health of the individual concerned or another individual.

Evidence Amendment Act (No. 2) 1980

The provisions of the Evidence Amendment Act (No. 2) 1980 regarding disclosure of communications to a health practitioner or clinical psychologist do not apply to disclosures made under section 18 of the Land Transport Act 1998.

1.8 Occupational therapists

If there is doubt regarding an individual's fitness to drive, an assessment by an occupational therapist may be appropriate.

Occupational therapists with specialist skills in driver assessment offer services in most centres. Occupational therapists offer a thorough, independent, objective assessment of driving ability, which is a valuable adjunct in determining fitness to drive.

Occupational therapists interpret how illness, trauma and subsequent disability may impact on an individual's ability to perform their usual functions. Driving is an activity that requires a combination of sensory, motor, cognitive and perceptual skills. Occupational therapists are aware of the high priority individuals give to their driving independence and of the associated complexity in determining fitness to drive.

Occupational therapists are concerned that people with disabilities, including age-related disability, are assisted to be independent in the activity of driving where technical and financial resources allow. Those with a disability that results in them being unsafe are advised to relinquish driving privileges.

Assessments cover a wide range of skills required for the safe operation of a vehicle:

- Biomechanical problems are evaluated and recommendations made for the acquisition of suitable vehicles and appropriate vehicle modifications, with consideration given to lifestyle and mobility devices such as wheelchairs.
- Cognitive skills are assessed, including concentration, decision making, eye-hand coordination and impulsivity, to ensure people are able to cope with the demands of driving and traffic situations.

Details of occupational therapists' driving assessment services can be obtained from Enable New Zealand on 0800 171 981 or from Occupational Therapy New Zealand on 04 473 6510.

1.9 Changes in medical treatments

Changes to medical treatments may make some of the information in this guide become outdated. It is not possible to change the guidelines every time changes in medical treatments are made.

If practitioners consider the advice in the guidelines is inappropriate for an individual they are assessing for fitness to drive because of changes in medical treatment, they can write to the Chief Medical Adviser and outline why the individual should not be considered using the guidance in this guide.

2. Neurological and related conditions

Summary table

The table below summarises the information outlined in this section. It does not describe any tests that may be necessary before some individuals can return to driving. Practitioners should ensure that they are familiar with the guidance outlined in the entire section rather than relying solely on the table.

The recommended minimum stand-down periods from driving and guidelines only apply where an individual's medical condition has been adequately treated and stability has been achieved so that road safety is unlikely to be compromised.

Medical condition	Class 1 or class 6 licence and/or a D, F, R, T or W endorsement (see appendix 3)	Class 2, 3, 4 or 5 licence and/or a P, V, I or O endorsement
Severe disabling giddiness, vertigo, or Menière's disease	Should not drive until sufficiently treated.	Same as private classes.
Blackout or fainting of known cause	Should not drive until cause of the blackout has been identified and treated appropriately to reduce the risk of future blackouts. Any medical condition(s) identified should be treated having regard to the relevant sections of these guidelines.	Same as private classes.
Blackout or fainting of unknown cause	Same as tonic clonic epilepsy.	Same as tonic clonic epilepsy.
Epilepsy - tonic clonic	Should not drive for 12 months. This may be reduced to a minimum of six months by the Transport Agency subject to a supporting neurologist report (see section 2.4.1). Individuals who have more than one seizure-related crash should be seizure free for five years, with or without medication, before being considered fit to resume driving.	Should not drive. However, the Transport Agency may consider granting a licence to individuals who have been seizure free for five years and are not on any medication to control seizures.

Medical condition	Class 1 or class 6 licence and/or a D, F, R, T or W endorsement (see appendix 3)	Class 2, 3, 4 or 5 licence and/or a P, V, I or O endorsement
Minor epilepsy and aura	Same as tonic clonic epilepsy.	Same as tonic clonic epilepsy.
Solitary seizure, (where epilepsy has not been established)	Same as tonic clonic epilepsy.	Same as tonic clonic epilepsy.
Sleep epilepsy	Considered the same as other forms of epilepsy except if, over a minimum period of three years, an individual with sleep epilepsy has seizures only during sleep, they may be able to drive.	Should not drive. The Transport Agency may allow a licence to be granted in some circumstances (see section 2.4.4).
Cerebrovascular accident	Should not drive until clinical recovery is complete with no significant residual disability likely to compromise safety. This should not be less than one month.	Should not drive. Under some circumstances, the Transport Agency may consider requests to resume driving from current licence holders (see section 2.6).
Myoclonus	Individuals with features suggestive of epilepsy, or myoclonus jerks that can affect their ability to drive safely, should not drive.	Same as private classes.
Transient ischaemic attacks (TIA)	Should not drive for at least one month for a single TIA. Individuals with multiple TIAs may return to driving after three months provided the condition has been adequately investigated and treated.	Should not drive for at least six months for a single TIA. Individuals who have multiple TIAs should not drive. However, the Transport Agency may consider granting a licence where sound reasons to do so exist.
Neuromuscular disorders (including Parkinsonism, multiple sclerosis and motor neurone disease)	Driving should cease where there is doubt of an individual's ability to control a vehicle in an emergency or other situation in which rapid responses may be needed.	Should not drive. The Transport Agency may consider granting a licence where sound reasons to do so exist, eg there is very minor muscular weakness and no other significant impairment.
Dementia and other cognitive impairments	Should not drive where cognitive impairments may affect an individual's ability to drive safely.	Should not drive.

Medical condition	Class 1 or class 6 licence and/or a D, F, R, T or W endorsement (see appendix 3)	Class 2, 3, 4 or 5 licence and/or a P, V, I or O endorsement
Non-cerebral tumours	Individuals who have pituitary tumours that are removed through a craniotomy should not drive for a minimum period of six months. For other situations, driving can resume once there is a satisfactory recovery and there is no impairment that may affect an individual's ability to drive safely.	Individuals who have pituitary tumours that are removed through a craniotomy should not drive for a minimum period of 12 months. For other situations, driving can resume once there is a satisfactory recovery and there is no impairment that may affect an individual's ability to drive safely.
Cerebral tumours	Should not drive for a minimum period of 12 months following successful surgery or other forms of treatment.	Should not drive.
Structural intracranial lesions, including cerebral abscess, arteriovenous malformations and intracranial aneurysms	Should not drive until a specialist assessment permits a return to driving. Individuals who have a craniotomy should not drive for at least six months.	Should not drive until a specialist assessment permits a return to driving.
Minor head injuries	Should not drive for at least three hours. In cases where loss of consciousness occurs, driving should not resume for 24 hours.	Same as private classes.
Serious head injuries and structural intracranial lesions	Should not drive for a minimum of six months. The return to driving will depend on the type of serious head injury and the potential to affect ability to drive safely.	Should not drive for at least 12 months depending on the type of serious head injury and the potential to affect the ability to drive. A neurologist assessment will be necessary before driving can resume.

Introduction

Neurological conditions or suspected neurological conditions are a major cause of medical-related crashes in New Zealand. From police crash reports, between 2003 and 2007, 533 crashes involved a driver who either had an epileptic seizure (116 crashes) or blacked out (417 crashes). Another 10 crashes were suspected of being caused by a driver who had or was suspected of having a neurological condition. These figures do not estimate the likely numbers of drivers with neurological conditions such as dementia, as these are often reported as an age-related factor. There are likely to be drivers who had a neurological condition that the police were not aware of.

Driving a motor vehicle requires the ability to perform precise, complex actions in response to an environment that is continually changing. Any disease process or substance (such as a medicine or recreational drug) that affects perception, judgement, alertness and responsiveness or the ability to carry out the necessary actions required to control a vehicle will impair an individual's fitness to drive.

Individuals with progressive conditions are likely to pose a greater risk unless the condition is closely monitored in relation to the ability to drive a vehicle safely. Static conditions and those that are reversible generally pose less of a problem, and mobility may often be an important consideration for such individuals. The issue in these cases is simply one of an individual's ability to drive safely. In these circumstances, the testing officer may well be a better arbiter of fitness to drive.

2.1 Severe disabling giddiness, vertigo or Menière's disease

Menière's disease, labyrinthine disorders and brain stem conditions may induce significant distracting giddiness. Where the attacks of giddiness are sufficiently disabling that they may impair an individual's ability to drive safely, the individual should be advised not to drive until their condition has been sufficiently treated.

Vertigo occurs for many reasons, most of which are due to inner ear disturbances. The most common form of paroxysmal relatively disabling vertigo is benign paroxysmal positional vertigo, which can occur in relation to head movement. Some individuals may feel sufficiently disabled by their vertigo that they should not drive, while others who have attacks are able to pull over to the side of the road.

There is no general prohibition on driving with vertigo except where the attacks of vertigo are sudden, or unpredictable, and are sufficiently disabling that they may impair an individual's ability to drive safely, eg where an individual is unable to concentrate on driving because of disabling giddiness.

General advice to health practitioners

Where an individual is subject to attacks of disabling giddiness, health practitioners should discuss with their patients the potential seriousness of their attacks on their driving. For example, individuals who suffer attacks where there are some warning signs should be advised to pull over to the side of the road if this is safe to do so, rather than try to continue driving during the attack.

Medical standards for all licence classes and/or endorsement types

Where the attacks of giddiness or vertigo are sufficiently disabling that they may impair an individual's ability to drive safely, the individual should be advised not to drive until it has been sufficiently treated.

2.2 Blackouts of unknown cause (excluding individuals with epilepsy)

This section deals with blackouts where the cause is unknown or cannot be established sufficiently to determine the risk of future events. It does not include individuals with epilepsy who have a blackout.

Between 2003 and 2007, 417 medical-related crashes were caused by a driver having a blackout. This is more than three times the number of crashes where an epileptic seizure was the cause of a crash. Because of the significant road safety risk, individuals who suffer a blackout of unknown cause are treated the same as an individual who has epilepsy.

We recognise that sometimes there are blackouts that cannot be explained. However, unless there is evidence that the risk of future blackouts is low (eg from a suitable observation period or through specialist investigation), the individual should be treated as if they have tonic clonic epilepsy.

The Transport Agency may consider cases where a health practitioner does not believe the requirements for tonic clonic epilepsy are appropriate for an individual who has a blackout of unknown cause. A request should be made to the Chief Medical Adviser and accompanied by a supporting report from an appropriate specialist.

Medical standards for all licence classes and/or endorsement types

The above conditions should be treated in the same way as tonic clonic epilepsy as far as fitness for driving is concerned, unless a cause can be established.

2.3 Blackouts of known cause (excluding individuals with epilepsy)

Episodes of transient loss of consciousness may occur in conditions other than epilepsy, eg arrhythmias, reduced cardiac output, carotid sinus syncope and certain peripheral nervous system disorders. Blackouts arising from cerebral ischaemia (transient ischaemia attacks – TIAs) or from irregularities of cardiac rhythm are treated separately under the appropriate headings. Guidance in relation to individuals who experience syncope is outlined in section 3 ‘Cardiovascular conditions’.

Medical standards for individuals applying for or renewing a class 1 or class 6 licence and/or a D, F, R, T or W endorsement (see appendix 3)

When driving should cease

Individuals with sudden, unpredictable or unheralded attacks of loss of consciousness should not drive. The principal guidance is that driving should cease until:

- the cause of the blackout has been determined, and
- the cause has been successfully treated to minimise the potential for future blackouts, and
- any guidance in this booklet relating to the condition that caused the blackout has been considered.

Medical standards for individuals applying for or renewing a class 2, 3, 4 or 5 licence and/or a P, V, I or O endorsement

When driving should cease

Normally, these licence classes and licence endorsements are not granted to applicants or licence holders with conditions that cause blackouts unless the cause has been identified and treated to minimise the risk of future blackouts.

When driving may resume or may occur

The Transport Agency may consider allowing an individual who already holds such licence classes/endorsements to resume driving after six months provided that:

- the cause of the blackout has been determined, and
- the cause has been successfully treated to minimise the potential for future blackouts, and
- any guidance in this booklet relating to the condition that caused the blackout has been considered, and
- a full neurological investigation has been undertaken.

Any requests should be made to the Chief Medical Adviser and accompanied by a supporting report from an appropriate specialist.

2.4 Epilepsy

2.4.1 Tonic clonic epilepsy

Having an epileptic seizure while driving can place the driver and other road users at risk. In view of the risks to road safety, health practitioners should notify the Transport Agency of any individual who continues to drive while still having seizures (see section 1.4). Epilepsy does not, of itself, preclude holding a licence to drive a private motor vehicle nor does a period of uncontrolled epilepsy automatically mean a permanent ban from driving. The diagnosis of epilepsy in commercial drivers will generally result in them being considered permanently unfit to drive.

Medical standards for individuals applying for or renewing a class 1 or class 6 licence and/or a D, F, R, T or W endorsement (see appendix 3)

When driving should cease

Driving should cease if:

- an individual is having seizures or has had a seizure in the last 12 months (although there may be exceptions to this requirement, which are discussed below)
- an individual who requires medication to prevent seizures does not comply with medical advice about taking their medication, or undertakes activities, such as drinking in excess, that can increase the risks of having a seizure or seizures.

When driving may resume or may occur

A period of 12 months free from seizures is normally required before an individual is allowed to drive again or is allowed to obtain a driver licence. The Transport Agency may reduce this period to six months if:

- a favourable specialist report indicates that the likelihood of further seizures is minimal
- there are favourable modifiers, such as seizures having occurred during medically directed medication changes, seizures secondary to acute metabolic or toxic states not likely to recur, seizures associated with reversible acute illness.

The existence of unfavourable modifiers will, in most cases, preclude any shortening of the required 12-month seizure-free period. Unfavourable modifiers include:

- non-compliance with medication or appointments and/or evidence of lack of credibility

- alcohol and/or drug abuse within the previous 12 months
- previous poor driving records and/or seizure-related crashes in the past five years
- the presence of a structural brain lesion or non-correctable brain or metabolic condition.

A request to be allowed to resume driving less than 12 months after the last seizure should be made to the Chief Medical Adviser and should be accompanied by a supporting report from a neurologist.

Individuals who have more than one seizure-related crash should be considered using the guidance for the commercial classes and endorsements for tonic clonic epilepsy, except that they can take medication to control seizures during the five-year period they are seizure free.

During any period of withdrawal of treatment, for whatever reason, there should be a minimum period of six months without seizures before resuming driving.

Medical standards for individuals applying for or renewing a class 2, 3, 4 or 5 licence and/or a P, V, I or O endorsement

When driving should cease

Generally, any individuals with these licence classes or endorsements suffering from epilepsy are normally considered permanently unfit to hold a commercial licence and should not drive under these licence classes or endorsement types.

When driving may resume or may occur

The Transport Agency may consider granting a licence for these classes or endorsements where:

- an individual has been seizure free for five years without taking any anti-seizure medication
- a neurologist's opinion supports the application.

A request should be made to the Chief Medical Adviser and accompanied by a supporting report from a neurologist.

2.4.2 A solitary seizure (where epilepsy has not been established)

There is evidence that individuals who have a single seizure and who have not had a diagnosis of epilepsy established have a high risk of having further seizures in the future. Therefore, the treatment of a solitary seizure where the cause of the seizure is unknown is the same as for tonic clonic epilepsy.

There may be exceptional circumstances where an individual has a single seizure associated with a clearly identified and non-recurring provoking cause, eg where medication given for another condition has provoked a seizure and the medication is discontinued. In such cases, a request should be made to the Chief Medical Adviser, accompanied by a supporting report from a neurologist and information on the provoking cause of the seizure.

Seizures after a head injury are discussed under section 2.10.3.

Medical standards for individuals applying for or renewing a class 1 or class 6 licence and/or a D, F, R, T or W endorsement (see appendix 3)

Same requirements as for tonic clonic epilepsy. See section 2.4.1.

Medical standards for individuals applying for or renewing a class 2, 3, 4 or 5 licence and/or a P, V, I or O endorsement

Same requirements as for tonic clonic epilepsy. See section 2.4.1.

2.4.3 Minor epilepsy and aura

The term epilepsy includes minor seizures such as absence attacks, myoclonic seizures (see section 2.5) and simple and complex partial seizures. In general, these forms of epilepsy are just as liable to be disabling and lead to potentially dangerous situations as tonic clonic epilepsy. A further complication in such conditions is that individuals suffering absence attacks (blank spells) may be unaware that such attacks are occurring, which may make any history from an individual unreliable.

Ask individuals who deny the recurrence of attacks whether there have been any symptoms suggestive of minor epilepsy, such as the occurrence of an aura. We also advise you obtain confirmation from a family member. An aura, even if not accompanied by loss or impairment of consciousness, should be considered to be a partial epileptic attack and their occurrence should be considered to constitute uncontrolled epilepsy.

Medical standards for all licence classes and/or endorsement types

The above conditions should be treated in the same way as tonic clonic epilepsy as far as fitness for driving is concerned.

2.4.4 Sleep epilepsy

Seizures occurring during sleep should be considered in the same manner as tonic clonic epilepsy in terms of fitness to drive, except where an individual has an established pattern of seizures occurring only during sleep, or upon waking, and who is completely free from seizures when awake.

Medical standards for individuals applying for or renewing a class 1 or class 6 licence and/or a D, F, R, T or W endorsement (see appendix 3)

When driving should cease

An individual with sleep epilepsy who has seizures while awake (seizures upon waking not included) should be treated the same as for tonic clonic epilepsy.

When driving may resume or may occur

An individual may resume driving if they do not have seizures when awake for 12 months and have an established pattern of seizures of at least 3 years that occur only during sleep or upon waking.

Medical standards for individuals applying for or renewing a class 2, 3, 4 or 5 licence and/or a P, V, I or O endorsement

When driving should cease

Any individuals with these licence classes or endorsements suffering from sleep epilepsy are normally considered permanently unfit to hold a commercial licence.

When driving may resume or may occur

The Transport Agency may consider granting a licence for these classes or endorsements where:

- an individual has only had seizures during sleep or upon waking for five years and no other seizures have occurred, and
- a neurologist's opinion supports the application.

A request should be made to the Chief Medical Adviser, accompanied by a supporting report from a neurologist.

2.5 Myoclonus

Myoclonus associated with degenerative brain disease, post-anoxic or metabolic encephalopathies, sleep myoclonus and spinal myoclonus are not regarded as epilepsy, and therefore are not treated the same way.

Medical standards for all licence classes and/or endorsement types

When driving should cease

Individuals with myoclonus that has features suggestive of epilepsy, or where the myoclonus jerk(s) may impair driving, should be treated the same way as for tonic clonic epilepsy.

When driving may resume or may occur

Individuals with myoclonus may be allowed to drive provided that no other features are suggestive of epilepsy, and the jerky movements are not likely to make driving unsafe. Some individuals may require an occupational therapist's driving assessment.

2.6 Cerebrovascular disease

This group of conditions includes strokes arising from occlusive vascular disease (cerebral thrombosis), spontaneous intracerebral haemorrhage and transient ischaemic attacks. People who have suffered strokes are at increased risk of a second attack that may render them unconscious or incapable of handling a motor vehicle. The residual effects of stroke in terms of hemiplegia or other neurological sequelae such as perceptual and visual problems, as well as effects on cognition, are often sufficient to render an individual unfit to drive. Transient ischaemic attacks may also render an individual unconscious or unable to control a vehicle.

2.6.1 Cerebrovascular accident (CVA)

Where there is doubt about fitness to drive in terms of residual disability in any area, a driving assessment by an occupational therapist trained to provide off-road and/or on-road assessments should be undertaken.

Medical standards for individuals applying for or renewing a class 1 or class 6 licence and/or a D, F, R, T or W endorsement (see appendix 3)

When driving should cease

An individual should not drive until clinical recovery is complete, with no significant residual disability likely to compromise safety. However, this period should not be less than one month from the event.

Individuals with the presence of homonymous hemianopia are generally considered permanently unfit to drive. The presence of other disorders such as ataxia, vertigo and diplopia will also generally make individuals permanently unfit to drive unless there is a full level of functional recovery.

The presence of epilepsy-associated significant cardiovascular disorders and recurrent transient ischaemic attacks following a stroke will generally result in individuals being considered unfit to drive.

When driving may resume or may occur

Driving may resume when there has been satisfactory clinical recovery, providing that there is no residual limb disability that cannot be accommodated by appropriate vehicle modifications, and there is no evidence of cerebral damage resulting in cognitive defects, reduced reaction times, perceptual difficulties and visual problems such as homonymous field defects and/or hemispatial neglect.

Individuals are generally considered unfit to drive where there is the presence of epilepsy, associated significant cardiovascular disorders and recurrent transient ischaemic attacks following a stroke. In exceptional circumstances, the Transport Agency may consider granting a licence after 12 months if a supporting specialist physician or neurologist's report is provided with the application. If licences are granted, the Transport Agency may impose licence conditions for regular medical assessment of fitness to drive.

We strongly advise that, wherever there is doubt about fitness to drive in terms of cognitive or physical defects, an occupational therapist with training in driving assessment should make a full assessment. In many cases, it may be possible to allow a return to driving after suitable vehicle modifications have been made.

Medical standards for individuals applying for or renewing a class 2, 3, 4 or 5 licence and/or a P, V, I or O endorsement

When driving should cease

Licences are generally not granted to applicants with a history of cerebrovascular accident. Individuals who have suffered from a cerebrovascular event are generally considered permanently unfit to drive unless sound reasons exist for a less stringent

approach. The presence of secondary epilepsy will generally result in individuals being considered permanently unfit to drive.

When driving may resume or may occur

Under some circumstances, a licence may be granted with conditions to existing holders of these classes and/or endorsement types. If there has been a full and complete recovery with no suggestion of recurrence over a period of three years, the possibility of a return to driving may be considered by the Transport Agency (via the Chief Medical Adviser). A supporting specialist physician or neurologist's report will be required.

2.6.2 Transient ischaemic attacks (TIAs)

Transient ischaemic attacks are relatively common in older people. Their onset may induce unconsciousness, confusion, sudden vertigo and interference with limb function, which will cause difficulty in controlling a vehicle and make driving unsafe. Always consider the possibility of such attacks being due to cardiac dysrhythmias.

Medical standards for individuals applying for or renewing a class 1 or class 6 licence and/or a D, F, R, T or W endorsement (see appendix 3)

When driving should cease

Individuals should be warned not to drive for a period of at least one month following a single attack. Individuals with recurrent or frequent attacks should not drive until the condition has been satisfactorily controlled, with no further recurrence for at least three months.

Medical standards for individuals applying for or renewing a class 2, 3, 4 or 5 licence and/or a P, V, I or O endorsement

When driving should cease

Driving should cease for at least six months following a single attack, subject to the cause being identified and satisfactorily treated and a specialist medical assessment being carried out.

Individuals should not drive if they have multiple transient ischaemic attacks that impair consciousness or awareness, cause vertigo or cause visual disturbances. Licences will generally not be issued to applicants with a history of transient ischaemic attacks.

When driving may resume or may occur

The Transport Agency may consider applications from individuals who have had multiple transient ischaemic attacks 12 months after the last attack if an appropriate specialist report supports such an application. If a licence is granted, conditions may be imposed that require the individual to be subject to regular medical assessment.

2.6.3 Amaurosis fugax

The conditions applying to transient ischaemic attacks will apply to this condition. It may, however, be possible to consider licence applications following a single episode, providing that no cardiac, vascular or haematological disease has been demonstrated.

2.7 Progressive neurological disorders (including Parkinsonism, multiple sclerosis and motor neurone disease)

All forms of severe neuromuscular disease will affect an individual's ability to control a motor vehicle safely as a result of weakness, stiffness, slowed responses and incoordination. In addition, multiple sclerosis may also cause visual problems, vertigo and sensory loss that will further complicate the picture. Health practitioners should check for limb strength, accuracy of rapid foot movements and joint proprioception.

Health practitioners should also be alert to cognitive impairments that may coexist with conditions such as Parkinson's disease.

Medical standards for individuals applying for or renewing a class 1 or class 6 licence and/or a D, F, R, T or W endorsement (see appendix 3)

When driving should cease

Driving should cease in all cases in which there is any doubt about an individual's ability to control a vehicle in an emergency or other situation in which rapid responses may be needed. If an individual has difficulty walking, they may also be unfit to drive.

When driving may resume or may occur

In the early stages of these conditions, it will often be possible to drive effectively, but there will inevitably come a time when driving is no longer safe. The health practitioner will often have to make a difficult decision in these circumstances, perhaps aided by a relevant specialist. Assessments from occupational therapists with training in driver assessment, as well as practical driving tests, will often be required before making a final decision on fitness to drive.

An additional problem is that, in conditions such as multiple sclerosis, there is a variable and intermittent progression with periods of significant remission. It may be necessary to limit individuals from driving at certain periods and allow them to drive only during periods of remission.

Licence conditions may include regular reassessments, such as an annual medical report.

Medical standards for individuals applying for or renewing a class 2, 3, 4 or 5 licence and/or a P, V, I or O endorsement

When driving should cease

Individuals with these conditions should not drive.

Where driving may resume or may occur

Individuals with very minor muscular weakness may drive if they have a full assessment, including off-road and on-road assessments of driving skills, that shows that they can drive safely. Regular reassessments may be required as a condition of holding a licence.

A further exception may be made in cases of drug-induced Parkinsonism, provided that an individual is likely to make a full recovery on cessation of treatment and provided that the reason for the therapy is not a cause of exclusion in its own right.

2.8 Dementia and other cognitive impairments

A wide range of organic brain disorders result in varying degrees of dementia, demonstrated in memory loss, impaired cognition, disturbances of mood and behaviour and periods of confusion. The most common forms in the general population are likely to be those associated with increasing age, such as the results of multiple brain infarcts and Alzheimer's disease. These conditions may occur, however, in relatively young people. Cognitive impairment associated with alcohol abuse or chronic solvent exposure (whether from abuse or from occupational exposures) is not uncommon. Various other forms of dementia or cognitive impairment may also exist.

It is difficult to assess such cases as there is no single marker that will act as a determinant of fitness to drive a motor vehicle and it may often be very difficult to determine fitness to drive in the early stages of such conditions in which there is little more than mild memory impairment. Appendix 5 contains a quick test using road signs that may highlight if an individual has problems in this area. In all these conditions, dangerous errors of judgement are possible. A full assessment of driving skills with an occupational therapist trained in driving assessment will often be a valuable way of determining whether an individual may continue to drive a motor vehicle. The family health practitioner will have an important part to play in coordinating the assessment process.

Cognitive problems frequently represent a difficult situation for the health practitioner, especially in regard to patient compliance. The issue of driving preferably should be raised at the early stages of such conditions, when an individual has sufficient cognitive and reasoning ability to make decisions about their driving future, such as selling their vehicle. It will often be necessary to enlist the early help of the family to ensure that an individual does not drive.

Medical standards for individuals applying for or renewing a class 1 or class 6 licence and/or a D, F, R, T or W endorsement (see appendix 3)

When driving should cease

Driving may be permitted in cases of early dementia, provided that the health practitioner is satisfied that there is no significant loss of insight or judgement and an individual does not show signs of disorientation or confusion. Standard tests of cognitive function should be used in assessment. Where the health practitioner is not in a position to undertake formal testing, individuals should be referred to a geriatrician, psychogeriatrician or other suitable specialist for further assessment.

When driving may resume or may occur

A driving assessment with an occupational therapist is recommended in all cases where there is some doubt about driving ability, especially should family members have concerns. The Transport Agency is likely to place a condition on an individual's licence that regular medical assessment is required.

Medical standards for individuals applying for or renewing a class 2, 3, 4 or 5 licence and/or a P, V, I or O endorsement

When driving should cease

Individuals with confirmed dementia or cognitive impairment from whatever cause should not drive.

2.9 Intracranial tumours

Individuals with an intracranial tumour can show dangerous errors of judgement. A full assessment of driving skills with an occupational therapist trained in driving assessment will often be a valuable way of determining whether an individual should continue to drive.

2.9.1 Non-cerebral tumours

This group of tumours includes such conditions as acoustic neuroma, meningiomas of the posterior fossa and pituitary tumours. Adequate treatment of these conditions is not usually associated with problems likely to impinge on driving capabilities, other than visual field defects associated with pituitary tumours. In these circumstances, the guidelines in section 6 should be considered.

Medical standards for individuals applying for or renewing a class 1 or class 6 licence and/or a D, F, R, T or W endorsement (see appendix 3)

When driving should cease

Problems may occur with individuals who have had pituitary tumours removed through a craniotomy. Individuals should not drive for a minimum period of six months.

When driving may resume or may occur

In other non-cerebral tumour situations, including transphenoidal pituitary surgery, driving may resume as soon as there has been satisfactory recovery, provided that there are no residual disabling symptoms. Regular medical follow-up is advisable.

Medical standards for individuals applying for or renewing a class 2, 3, 4 or 5 licence and/or a P, V, I or O endorsement

When driving should cease

Individuals who have had pituitary tumours removed through a craniotomy should not drive for a minimum period of 12 months.

When driving may resume or may occur

In other situations, including transphenoidal pituitary surgery, driving may resume as soon as there has been satisfactory recovery, provided that there are no residual disabling symptoms. Regular medical follow-up is advisable. The Transport Agency is likely to place a condition on an individual's licence that regular medical assessment is required.

2.9.2 Cerebral tumours

Cerebral tumours, whether benign or malignant, carry a significant risk of associated epilepsy, both before and after surgery. For this reason, restrictions will generally be applied. In addition, associated motor or sensory dysfunction and visual defects may coexist, which could affect the safety of driving.

Medical standards for individuals applying for or renewing a class 1 or class 6 licence and/or a D, F, R, T or W endorsement (see appendix 3)

When driving should cease

Once such a condition has been diagnosed, driving should cease for a minimum of 12 months. In advanced malignant tumours (such as Grade 3 or 4 gliomas) or in cases of cerebral secondary tumours (eg from lung cancer), driving should cease for a minimum period of three years following treatment, depending on circumstances.

When driving may resume or may occur

Driving may resume 12 months after surgery or other forms of treatment if there is no evidence of epileptiform seizures or other problems likely to affect an individual's ability to drive safely.

Medical standards for individuals applying for or renewing a class 2, 3, 4 or 5 licence and/or a P, V, I or O endorsement

When driving should cease

Individuals with such conditions are generally considered unfit to drive.

When driving may resume or may occur

Individuals who had a tumour diagnosed in childhood and who have survived to adulthood without recurrence and with no significant functional deficits may be able to drive. In such cases, the Transport Agency may consider a licence application on the basis of a satisfactory medical assessment, usually including an appropriate specialist report.

2.10 Structural intracranial lesions and head injuries

2.10.1 Structural intracranial lesions - cerebral abscess, arteriovenous malformations and intracranial aneurysms

Conditions such as cerebral abscess, arteriovenous malformations and intracranial aneurysms pose risks for driving. The major risks are in respect of epilepsy, particularly with cerebral abscess, and also spontaneous bleeding in the case of untreated arteriovenous malformations and aneurysms. Damage to the brain is also a possibility

arising from intracranial bleeding and/or compression as well as from surgical treatment. Functional deficits may therefore require assessment.

Medical standards for individuals applying for or renewing a class 1 or class 6 licence and/or a D, F, R, T or W endorsement (see appendix 3)

When driving should cease

Driving should cease for a minimum period of six months following a craniotomy for intracerebral lesions, depending on the circumstances and the range of post-traumatic problems. All individuals who have conditions such as cerebral abscess, arteriovenous malformations, intracranial aneurysms or structural intracranial lesions should stop driving until the health practitioner permits a return to driving.

When driving may resume or may occur

A full neurological assessment and an occupational therapist's assessment may be necessary before considering whether an individual is fit to resume driving. An on-road driving test will often be required if there are post-traumatic or post-surgical functional deficits. Visual assessment will also be necessary to ensure the absence of any significant visual field defects. Frontal lobe injuries may present particular difficulties in assessment. Licences may be subject to the requirement of regular medical assessments.

Medical standards for individuals applying for or renewing a class 2, 3, 4 or 5 licence and/or a P, V, I or O endorsement

When driving should cease

Individuals with intracranial lesions such as aneurysms, arteriovenous malformations and cerebral abscess would normally be considered permanently unfit to drive because of the risks of epilepsy and further bleeds.

2.10.2 Minor head injuries

Medical standards for all licence classes and/or endorsement types

A minor head injury should not impair driving ability for more than a few hours. An individual who sustains a minor head injury without loss of consciousness or any other complication should not drive for three hours. An individual who sustains a minor head injury but does lose consciousness should not drive for 24 hours and should have a medical assessment before returning to driving.

An extension of the recommended periods that an individual should refrain from driving may be necessary if an individual exhibits loss of good judgement, decreased intellectual capacity, post-traumatic seizures, visual impairment or loss of motor skills. They should not be allowed to drive until cleared as fit to drive by a health practitioner, having referred to the appropriate section of this guide.

2.10.3 **Serious or significant head injuries**

Serious head injuries, such as acute intracerebral haematoma requiring surgery or compound depressed fracture or dural tear or with more than 24 hours of post-traumatic amnesia, present a number of problems with respect to driving safety.

Serious head injuries carry a risk of post-traumatic epilepsy, which is much more common after penetrating (open) head injuries, particularly with dural penetration, injuries complicated by intradural (not subdural) haemorrhage and depressed fractures of the cranial vault. In addition, associated post-injury cognitive and behavioural problems may make it unsafe for an individual to drive, and post-traumatic physical disabilities may make driving difficult or require vehicle modifications.

It is imperative that all cases are fully and properly assessed before there is any suggestion of a return to driving. Most individuals with severe head injuries, including those with post-concussion syndrome, should not drive within six months of the event, and a return to driving should be subject to health practitioner assessment.

Medical standards for individuals applying for or renewing a class 1 or class 6 licence and/or a D, F, R, T or W endorsement (see appendix 3)

When driving should cease

Driving should cease for a minimum period of six months following severe head injuries, depending on the circumstances and the range of post-traumatic problems. The existence of post-traumatic epilepsy will require the application of the same rules as for tonic clonic epilepsy. The only exception is the occurrence of immediate seizures (normally in the first 24 hours after injury) that are considered part of the acute process.

When driving may resume or may occur

A full neurological assessment and occupational therapist's assessment may be necessary before considering whether an individual is fit to resume driving. An on-road driving test will often be required if there are post-traumatic or post-surgical functional deficits. Visual assessment will also be necessary to ensure the absence of any

significant visual field defects. Frontal lobe injuries may present particular difficulties in assessment, and a neuropsychological assessment should be considered.

Occupational therapist's assessments may also be required in respect of vehicle modifications or other driving aids that may be needed. Licences may be subject to the requirement of regular medical assessments.

Medical standards for individuals applying for or renewing a class 2, 3, 4 or 5 licence and/or a P, V, I or O endorsement

When driving should cease

Driving should cease for a minimum period of 12 months following severe head injuries, depending on the circumstances and the range of post-traumatic problems.

The existence of post-traumatic epilepsy will require the application of the same rules as for tonic clonic epilepsy. The only exception is the occurrence of immediate seizures (normally in the first 24 hours after injury) that are considered part of the acute process.

When driving may resume or may occur

Most severe head injuries will result in the driver being considered unfit to drive. Individuals with severe head injuries may drive after a minimum period of 12 months, provided there has been adequate evidence of a recovery sufficient to allow for safe driving relative to an individual's occupation. A specialist neurological assessment is required. In addition, an occupational therapist's assessment is recommended.

3. Cardiovascular conditions

Summary table

The table below summarises the information outlined in this section. However, practitioners should ensure that they are familiar with the guidance outlined in the entire section rather than relying solely on the table. The recommended minimum stand-down periods from driving and guidelines only apply where an individual's medical condition has been adequately treated and stability has been achieved so that road safety is unlikely to be compromised.

Medical condition	Class 1 or class 6 licence and/or a D, F, R, T or W endorsement (see appendix 3)	Class 2, 3, 4 or 5 licence and/or a P, V, I or O endorsement
Angina pectoris (proven) minimal	Individuals with angina pectoris at rest or on minimal exertion despite medical therapy should not drive.	Same as private classes.
Angina pectoris (suspected)	When suspected, fitness to drive is as for an individual with proven angina pectoris.	Same as private classes.
Acute uncomplicated myocardial infarction	Should not drive for at least two weeks. Return to driving subject to specialist assessment.	Should not drive for at least four weeks. Return to driving subject to specialist assessment.
Coronary artery bypass surgery	Should not drive for at least four weeks. Return to driving subject to specialist assessment.	Should not drive for at least three months. Return to driving subject to specialist assessment.
Coronary angioplasty	Should not drive for at least two days. Return to driving subject to specialist assessment. See section 3.1.5.	Should not drive for at least four weeks. Return to driving subject to specialist assessment. See section 3.1.5.
Severe hypertension	Should not drive if treatment causes symptomatic postural hypotension or impaired alertness.	Should not drive if sitting blood pressure is consistently equal to or greater than 200mm Hg systolic, or equal to or greater than 110mm Hg diastolic, or if treatment causes symptomatic postural hypotension or impaired alertness.

Medical condition	Class 1 or class 6 licence and/or a D, F, R, T or W endorsement (see appendix 3)	Class 2, 3, 4 or 5 licence and/or a P, V, I or O endorsement
Cardiac arrest	Should not drive for at least two months after a cardiac arrest. Return to driving subject to specialist assessment.	See section 3.3.1.
Syncope or presyncope	Should not drive for at least two months after syncope. Return to driving subject to specialist assessment.	Generally considered unfit to drive unless adequately treated. Fitness to drive may be assessed following at least a three-month symptom-free period.
Cardiac arrhythmias	See section 3.3.3.	See section 3.3.3.
Individuals with pacemakers	Should not drive for at least two weeks after successful implantation. Return to driving subject to specialist assessment.	Should not drive for at least one month after successful implantation. Return to driving subject to specialist assessment.
Automatic implantable cardioverter defibrillator	Should not drive for at least six months after implantation. Return to driving subject to specialist assessment. Individuals who receive an implantation for prophylactic reasons can drive two weeks after implantation, subject to specialist assessment.	Should not drive.
Valvular heart disease	Should not drive for at least four weeks after valve surgery. Return to driving subject to specialist assessment. Should not drive if have dyspnoea on mild exertion.	See section 3.4. Individuals with severe asymptomatic aortic stenosis or mitral stenosis should not drive. Individuals with cardiac symptoms should not drive.
Cardiac failure and cardiomyopathy	Should not drive if dyspnoea present on mild exertion. Return to driving subject to specialist assessment.	Should not drive. See section 3.5.
Anticoagulation	Should not drive if anticoagulation cannot be maintained at the appropriate degree for the underlying condition. See section 3.6 for further details.	Same as private classes.

Medical condition	Class 1 or class 6 licence and/or a D, F, R, T or W endorsement (see appendix 3)	Class 2, 3, 4 or 5 licence and/or a P, V, I or O endorsement
Congenital heart disease	Should not drive for at least six weeks after successful surgery for congenital heart disease. Return to driving subject to specialist assessment.	Should not drive for at least three months after successful surgery for congenital heart disease. Return to driving subject to specialist assessment.
Aneurysm	Should not drive for at least six weeks after successful surgery. Return to driving subject to specialist assessment.	Should not drive for at least three months after successful surgery. Return to driving subject to specialist assessment. Certain forms of aneurysm may render an individual permanently unfit to drive.
Other cardiovascular disease	See section 3.9 for the tests to determine if an individual is fit to drive. Return to driving subject to specialist assessment.	Same as private classes.
Heart transplants	Should not drive for at least six weeks after successful surgery. Return to driving subject to specialist assessment.	Licences are generally not issued to new applicants who have had a heart or heart-lung transplant. Existing licence holders should not drive for a period of three months. Return to driving subject to specialist assessment.

Introduction

Ischaemic heart disease is the single most common serious disease for New Zealand males aged under 60. Cardiac history and risk factors should be considered before medical certificates of fitness to drive are issued.

The purpose of this section is to provide guidelines to health practitioners who are required to assess the fitness of individuals with cardiovascular disease to hold a licence to drive a motor vehicle. These guidelines do not provide comprehensive coverage of all cardiovascular conditions that may influence fitness to drive.

Although the driving risks of collapse and/or sudden death from ischaemic heart disease are not entirely clearly defined, there is evidence that the condition poses a measurably increased risk. The effects of driving long distances and under significant stress should also be taken into account, as well as the fact that most drivers of heavy vehicles will have to be involved with loading and unloading their vehicles, changing tyres and other heavy work that may precipitate infarction (Mittleman et al 1993). The epidemiological evidence indicates that those who have had a previous myocardial infarction or similar event are at greater risk of recurrence than the normal population. There is thus a small but real risk that obliges health practitioners to adequately consider the risk to public safety that their patients may pose.

For the 2003–07 period, cardiovascular conditions were estimated to contribute to 9 percent of medical-related crashes. These figures may underestimate the contribution of cardiovascular conditions because 24 percent of medical-related crashes classified as ‘blackouts’ may have had a cardiovascular condition, such as syncope, as an unconfirmed causal factor.

Assessment by a cardiologist

Most individuals with cardiovascular disease who require assessment of fitness to drive should generally be reviewed by a consultant cardiologist or cardiothoracic surgeon. All individuals with cardiovascular disease who hold a higher licence class(es) and/or endorsement(s) generally need to be assessed by a specialist. In some cases, advice not to drive might be reviewed after an appropriate period, and that advice might be withdrawn.

Individuals assessed by a cardiologist as having a high risk of sudden cardiovascular collapse should not drive.

Temporary driving restrictions

Unless specified, after cardiac surgery, individuals may be assessed for cardiovascular fitness to drive only if they are free of musculoskeletal pain and other morbidity that could impair safe driving.

3.1 Myocardial ischaemia

In individuals with ischaemic heart disease, the probability of ischaemia while driving, rather than the mere presence of ischaemic heart disease, should influence the assessment of fitness to drive. Use the new definitions of myocardial infarction based on myocardial proteins Troponins T or I and creatine kinase MB, rather than the previous World Health Organization definition (Joint European Society of Cardiology/American College of Cardiology Committee 2000).

3.1.1 Angina pectoris (proven)

The type and frequency of angina episodes is important in considering whether an individual should or should not drive.

Medical standards for individuals applying for or renewing a class 1 or class 6 licence and/or a D, F, R, T or W endorsement (see appendix 3)

When driving should cease

Individuals with angina pectoris at rest or on minimal exertion despite medical therapy should not drive.

When driving may resume or may occur

An individual may be fit to drive if:

- angina pectoris is usually absent on mild exertion, and
- there are no electrocardiographic changes, symptoms, arrhythmias, poorly controlled anticoagulant therapy (see section 3.6), severe hypertension or other conditions that would render the individual unfit to drive.

Medical standards for individuals applying for or renewing a class 2, 3, 4 or 5 licence and/or a P, V, I or O endorsement

When driving should cease

Individuals with angina pectoris at rest or on minimal exertion despite medical therapy should not drive.

When driving may resume or may occur

An individual with angina pectoris occurring only on strenuous exertion (Canadian class 1) or previous angina pectoris may be fit to drive if there is no evidence of myocardial ischaemia on adequate stress (exercise for > 9 minutes on the Bruce protocol (or equivalent exercise protocol) or pharmacological testing with either echocardiographic or scintigraphic assessment combined with ECG assessment).

The Transport Agency may consider individuals with evidence of minimal myocardial ischaemia, if there is a supporting specialist opinion. The Transport Agency may impose licence conditions for regular medical assessment, eg annual reviews.

3.1.2 **Angina pectoris (suspected)**

Medical standards for all licence classes and/or endorsement types

When angina pectoris is suspected, fitness to drive is as for an individual with proven angina pectoris until and unless a diagnosis of angina pectoris is excluded.

3.1.3 **Acute uncomplicated myocardial infarction**

The period of convalescence after acute myocardial infarction will vary according to the amount of myocardial necrosis, the extent of obstructive coronary artery disease, the efficacy of any revascularisation procedure, functional capacity, evidence of reversible ischaemia, and predisposition to ventricular tachycardia. The timing of fitness to drive after myocardial infarction should be assessed in the context of convalescence generally.

Medical standards for individuals applying for or renewing a class 1 or class 6 licence and/or a D, F, R, T or W endorsement (see appendix 3)

When driving should cease

Driving should cease for at least two weeks after an acute uncomplicated myocardial infarction, subject to a specialist assessment.

When driving may resume or may occur

An individual may be fit to drive two weeks after a myocardial infarction, subject to a specialist assessment, if:

- the left ventricular ejection fraction is greater than 40 percent (otherwise one month if less than or equal to 40 percent), and
- angina pectoris is usually absent on mild exertion, and
- there are no electrocardiographic changes, symptoms, arrhythmias, poorly controlled anticoagulant therapy (see section 3.6), severe hypertension or other conditions that would render the individual unfit to drive.

Medical standards for individuals applying for or renewing a class 2, 3, 4 or 5 licence and/or a P, V, I or O endorsement

When driving should cease

Driving should cease for at least four weeks after a myocardial infarction, subject to a specialist assessment.

When driving may resume or may occur

An individual may be fit to drive four weeks after a myocardial infarction, subject to a specialist assessment, if:

- the left ventricular ejection fraction is greater than 40 percent, and
- there is no evidence on adequate stress (exercise or pharmacological) testing (electrocardiographic, echocardiographic or scintigraphic) of myocardial ischaemia.

The Transport Agency may impose licence conditions for regular medical assessment, eg annual reviews.

The Transport Agency may consider individuals with evidence of minimal myocardial ischaemia, if there is a supporting specialist opinion. Angiography may be required to confirm a commercial driver's low-risk status.

3.1.4 Coronary artery bypass surgery

Fitness to drive after coronary artery bypass surgery is influenced by completeness of revascularisation, functional capacity, evidence of reversible myocardial ischaemia and the presence of musculoskeletal or other pain.

Medical standards for individuals applying for or renewing a class 1 or class 6 licence and/or a D, F, R, T or W endorsement (see appendix 3)

When driving should cease

Driving should cease for at least four weeks following coronary artery bypass surgery, subject to a specialist assessment.

When driving may resume or may occur

An individual may be fit to drive four weeks after coronary artery bypass surgery, subject to a specialist assessment, if:

- angina pectoris and dyspnoea are usually absent on mild exertion, and
- there is no musculoskeletal or other pain that would interfere with driving, and
- there are no electrocardiographic changes, symptoms, arrhythmias, poorly controlled anticoagulant therapy (see section 3.6), severe hypertension or other conditions that would render the individual unfit to drive.

Medical standards for individuals applying for or renewing a class 2, 3, 4 or 5 licence and/or a P, V, I or O endorsement

When driving should cease

Driving should cease for at least three months following coronary artery bypass surgery.

When driving may resume or may occur

An individual may be fit to drive three months after coronary artery bypass surgery, subject to a specialist assessment, if:

- there is no evidence of myocardial ischaemia on adequate stress (exercise or pharmacological) testing (electrocardiographic, echocardiographic or scintigraphic), or
- there is evidence of minimal myocardial ischaemia at a moderate or high level of stress, but at angiography there is complete revascularisation.

The Transport Agency may impose licence conditions for regular medical assessment, eg annual reviews. The Transport Agency may consider individuals with evidence of minimal myocardial ischaemia and/or with incomplete revascularisation at angiography, if there is a supporting specialist opinion.

3.1.5 Coronary angioplasty

The period of convalescence after coronary angioplasty will vary according to symptoms, the extent of disease prior to angioplasty, the efficacy and complications of angioplasty, functional capacity and evidence of reversible myocardial ischaemia after angioplasty. The timing of fitness to drive after coronary angioplasty should be assessed in the context of convalescence generally.

Medical standards for individuals applying for or renewing a class 1 or class 6 licence and/or a D, F, R, T or W endorsement (see appendix 3)

When driving should cease

Individuals should not drive for at least two days after coronary angioplasty. Individuals with complications arising from coronary angioplasty, which may impair their ability to drive safely, should not drive until given medical clearance.

When driving may resume or may occur

An individual may be fit to drive two days after coronary angioplasty if angioplasty was not associated with acute myocardial infarction (immediately prior to, during or after angioplasty) or other significant complications.

Medical standards for individuals applying for or renewing a class 2, 3, 4 or 5 licence and/or a P, V, I or O endorsement

When driving should cease

Individuals should not drive for at least four weeks after coronary angioplasty. Individuals with complications arising from coronary angioplasty, which may impair their ability to drive safely, should not drive. The Transport Agency may require regular review because of the possibility of in-stent restenosis occurring over this time.

When driving may resume or may occur

An individual may be fit to drive four weeks after coronary angioplasty if:

- angioplasty was not associated with acute myocardial infarction (immediately prior to, during or after angioplasty) and there is no evidence of myocardial ischaemia on adequate stress (exercise or pharmacological) testing (electrocardiographic, echocardiographic or scintigraphic), or
- there is evidence of minimal myocardial ischaemia at a moderate or high level of stress, but at angiography there is complete revascularisation. The Transport Agency may impose licence conditions for regular medical assessment, eg annual reviews.

The Transport Agency may consider individuals with evidence of minimal myocardial ischaemia and/or with incomplete revascularisation at angiography, if there is a supporting specialist opinion.

3.2 Severe hypertension

Treatment for hypertension aims to maintain a sitting blood pressure equal to or less than 140mm Hg systolic and equal to or less than 90mm Hg diastolic.

Medical standards for individuals applying for or renewing a class 1 or class 6 licence and/or a D, F, R, T or W endorsement (see appendix 3)

When driving should cease

Individuals for whom treatment causes symptomatic postural hypotension or impaired alertness should not drive until these effects have been satisfactorily remedied.

When driving may resume or may occur

An individual may be fit to drive unless either of the following applies (and provided there is no other condition that would render the individual unfit to drive):

- Treatment causes symptomatic postural hypotension, or
- Treatment causes impaired alertness.

Medical standards for individuals applying for or renewing a class 2, 3, 4 or 5 licence and/or a P, V, I or O endorsement

When driving should cease

An individual is normally considered unfit to drive if:

- the sitting blood pressure is consistently equal to or greater than 200mm Hg systolic, or equal to or greater than 110mm Hg diastolic, or
- treatment causes symptomatic postural hypotension or impaired alertness, or
- there is end-organ damage (cardiac, cerebral, retinal or renal) that would otherwise render the individual unfit to drive.

3.3 Arrhythmias and conduction abnormalities

Individuals with recurrent or persistent arrhythmias causing presyncope or syncope are normally considered unfit to drive. Fitness to drive may be assessed after effective treatment and an appropriate symptom-free interval.

3.3.1 Cardiac arrest

Cardiac arrest may occur secondary to bradycardia or asystole, ventricular tachycardia or fibrillation, or if cardiac output is reduced in association with other arrhythmias. Driving should be resumed only when the underlying cause(s) of cardiac arrest have been effectively treated and the individual has remained asymptomatic for an adequate period.

Medical standards for individuals applying for or renewing a class 1 or class 6 licence and/or a D, F, R, T or W endorsement (see appendix 3)

When driving should cease

An individual should not drive for at least two months following a cardiac arrest.

When driving may resume or may occur

An individual may be fit to drive two months after a cardiac arrest, subject to a specialist assessment and provided there is no other condition that would render the individual unfit to drive.

Medical standards for individuals applying for or renewing a class 2, 3, 4 or 5 licence and/or a P, V, I or O endorsement

When driving should cease

An individual is normally considered permanently unfit to drive, unless:

- cardiac arrest had occurred within two days of acute myocardial infarction, and the individual subsequently did not have inducible ventricular tachycardia at electrophysiological study, and there was no other condition that would render the individual unfit to drive, or
- cardiac arrest had been associated with an arrhythmia that was subsequently cured by surgery or catheter ablation, and the individual subsequently did not have inducible ventricular tachycardia at electrophysiological study, and there was no other condition that would render the individual unfit to drive, or
- cardiac arrest had been associated with factors that could be avoided in the future, and there was no other condition that would render the individual unfit to drive.

In the circumstances listed above, fitness to drive may be assessed following a symptom-free interval of at least three months after cardiac arrest. Specialist assessment is required before an individual returns to driving. The Transport Agency may impose licence conditions for regular medical assessment, eg annual cardiologist reviews.

3.3.2 Syncope and presyncope

Presyncope and syncope may occur secondary to arrhythmias, medications and other factors. Driving should cease until the underlying cause(s) of presyncope and/or syncope have been identified and effectively treated, and the individual has remained asymptomatic for an adequate period. Where the cause of presyncope and/or syncope is not identified, individuals should not drive for the periods outlined below.

Medical standards for individuals applying for or renewing a class 1 or class 6 licence and/or a D, F, R, T or W endorsement (see appendix 3)

When driving should cease

An individual should not drive for a symptom-free period of at least two months following syncope.

When driving may resume or may occur

An individual may be fit to drive following a symptom-free interval of at least two months after syncope, provided there is no other condition that would render the individual unfit to drive.

Medical standards for individuals applying for or renewing a class 2, 3, 4 or 5 licence and/or a P, V, I or O endorsement

When driving should cease

An individual is normally considered unfit to drive, unless:

- all the factors leading to presyncope or syncope have been identified and treated effectively, and
- there is no other condition that would render the individual unfit to drive.

Fitness to drive may be assessed following a symptom-free interval of at least three months after syncope. The Transport Agency may impose licence conditions for regular medical assessment, eg annual reviews.

3.3.3 Cardiac arrhythmias

Medical standards for individuals applying for or renewing a class 1 or class 6 licence and/or a D, F, R, T or W endorsement (see appendix 3)

See section 3.3.4 for individuals who have a pacemaker implanted.

Atrial fibrillation does not normally require driving restrictions unless complicated by episodes of syncope or dizziness. In these circumstances, individuals should not drive until the condition has stabilised under satisfactory treatment.

The situation with regard to other forms of arrhythmias, such as supraventricular tachycardias, Wolff-Parkinson-White syndrome and other conduction disorders, will depend on any history of collapse, dizziness or syncope. A symptom-free period of at least three months on treatment or following corrective surgery will normally be required before allowing individuals to resume driving.

Individuals not treated by curative surgery may be required to have an annual cardiologist assessment as a condition for holding a licence to drive.

An individual who has undergone radiofrequency ablation may be fit to drive six weeks after it if:

- assessed by a specialist
- there is an absence of symptoms
- an ECG is normal, where relevant
- there is no other condition that would render the individual unfit to drive.

Individuals with untreated ventricular tachycardia should not drive. Individuals with ventricular tachycardia or any arrhythmia likely to cause syncope or predispose to sudden death are generally considered unfit to drive.

Medical standards for individuals applying for or renewing a class 2, 3, 4 or 5 licence and/or a P, V, I or O endorsement

Individuals with a history of recurrent or persistent arrhythmia should be considered unfit to apply for and hold a licence. Individuals with uncomplicated atrial fibrillation do not generally have driving restrictions unless complicated by episodes of syncope or dizziness or other symptoms. A period of at least six months free of symptoms is generally required and licences may be subject to the condition of an annual cardiac assessment. Individuals with ventricular tachycardia or any arrhythmia likely to cause syncope or predispose to sudden death are generally considered unfit to drive. the Transport Agency may consider granting individuals with a licence or endorsement based on a supporting specialist report where sound reasons exist.

3.3.4 Pacemaker

Medical standards for individuals applying for or renewing a class 1 or class 6 licence and/or a D, F, R, T or W endorsement (see appendix 3)

When driving should cease

An individual should not drive for at least two weeks after successful implantation of a pacemaker.

When driving may resume or may occur

An individual may be fit to drive two weeks after implantation of a pacemaker provided there is no other condition that would render the individual unfit to drive. Return to driving subject to specialist assessment. Medical standards for individuals applying for or renewing a class 2, 3, 4 or 5 licence and/or a P, V, I or O licence endorsement

Medical standards for individuals applying for or renewing a class 2, 3, 4 or 5 licence and/or a P, V, I or O endorsement

When driving should cease

An individual should not drive for at least one month after implantation of a pacemaker.

When driving may resume or may occur

An individual may be fit to drive one month after implantation of a pacemaker if:

- there are normal haemodynamic responses at a moderate level of exercise, and
- there is no other condition that would render the individual unfit to drive.

Specialist assessment should be undertaken before driving can resume.

The Transport Agency may impose licence conditions for regular medical assessment, eg annual reviews.

3.3.5 **Automatic implantable cardioverter defibrillator**

Medical standards for individuals applying for or renewing a class 1 or class 6 licence and/or a D, F, R, T or W endorsement (see appendix 3)

When driving should cease

An individual should not drive for at least six months after implantation of an automatic cardioverter defibrillator.

Individuals who have an implanted automatic cardioverter defibrillator for prophylactic reasons should not drive for at least two weeks after implantation. Return to driving is subject to specialist assessment. If the device discharges, then an individual should stop driving for six months unless sound reasons exist for an earlier return to driving. When the batteries are changed, driving should cease for one month.

When driving may resume or may occur

An individual may be fit to drive six months after implantation of an automatic cardioverter defibrillator, provided there is no other condition that would render the individual unfit to drive. Specialist assessment should be undertaken before driving can resume.

The Transport Agency may impose licence conditions for regular medical assessment, eg annual cardiologist review. An individual who has had an implanted automatic cardioverter defibrillator for prophylactic reasons can drive two weeks after implantation subject to specialist assessment.

Medical standards for individuals applying for or renewing a class 2, 3, 4 or 5 licence and/or a P, V, I or O endorsement

When driving should cease

An individual with an implanted automatic cardioverter defibrillator is normally considered unfit to drive.

3.3.6 Other arrhythmias and electrocardiographic abnormalities

Atrial fibrillation may be secondary to other arrhythmias, myocardial ischaemia, valvular or other heart disease, and thyrotoxicosis. The assessment of fitness to drive should take account of factors that may cause or precipitate atrial fibrillation, and whether treatment is likely to abolish atrial fibrillation.

Supraventricular and ventricular tachycardia may be due to re-entry utilising electrical pathways that may be modified medically or cured by catheter ablation or surgery. The assessment of fitness to drive should take account of potentially curative therapy. Conduction abnormalities may occur in isolation or be associated with other heart disease or drug therapy.

Medical standards for individuals applying for or renewing a class 1 or class 6 licence and/or a D, F, R, T or W endorsement (see appendix 3)

When driving should cease

An individual should not drive if they have arrhythmias or other electrocardiographic abnormalities that could cause presyncope or other symptoms that might impair driving.

When driving may resume or may occur

Individuals with arrhythmias or other electrocardiographic abnormalities that do not cause presyncope (or other symptoms that might impair driving) may be fit to drive if there is no other condition that would render the individual unfit to drive.

Medical standards for individuals applying for or renewing a class 2, 3, 4 or 5 licence and/or a P, V, I or O endorsement

When driving should cease

An individual should not drive if they have arrhythmias or other electrocardiographic abnormalities that could cause presyncope or other symptoms that might impair driving.

When driving may resume or may occur

Individuals with arrhythmias or other electrocardiographic abnormalities that do not cause presyncope (or other symptoms that might impair driving) may be fit to drive if there is no other condition that would render the individual unfit to drive. The Transport Agency may impose licence conditions for regular medical assessment, eg annual cardiologist's review.

3.4 Valvular heart disease

Medical standards for individuals applying for or renewing a class 1 or class 6 licence and/or a D, F, R, T or W endorsement (see appendix 3)

When driving should cease

An individual may be fit to drive four weeks after successful valve surgery. Specialist assessment should be undertaken before driving can resume. An individual should not drive if they have dyspnoea on mild exertion.

When driving may resume or may occur

An individual may be fit to drive four weeks after successful valve surgery if:

- there are no electrocardiographic changes, symptoms, arrhythmias, cardiac failure, poorly controlled anticoagulant therapy (see section 3.6), severe hypertension or other conditions that would render the individual unfit to drive
- there is no sternotomy or other pain that would interfere with driving.

Medical standards for individuals applying for or renewing a class 2, 3, 4 or 5 licence and/or a P, V, I or O endorsement

When driving should cease

An individual is normally considered unfit to drive if:

- there is any clinical evidence of valvular disease, with or without surgical repair or replacement, associated with dyspnoea, chest pain, symptomatic arrhythmia, dizziness or a history of embolism, or
- there are electrocardiographic changes, symptoms, arrhythmias, cardiac failure, poorly controlled anticoagulant therapy (see section 3.6), severe hypertension or other conditions that would render the individual unfit to drive, or
- there is echocardiographic evidence of severe mitral stenosis or severe aortic stenosis.

When driving may resume or may occur

An individual may be fit to drive if there is only mild valvular disease of no haemodynamic significance, and there are no conditions that would otherwise render the individual unfit to drive.

An individual may be fit to drive three months after successful valve surgery, if there is no evidence of valvular dysfunction and there are no electrocardiographic changes, symptoms, arrhythmias, cardiac failure, poorly controlled anticoagulant therapy (see section 3.6), severe hypertension or other conditions that would render the individual unfit to drive. Specialist assessment should be undertaken before driving can resume. The Transport Agency may impose licence conditions for regular medical assessment, eg annual cardiologist review.

3.5 Cardiac failure and cardiomyopathy

Cardiac failure is a predictor of risk of sudden death. Individuals with uncontrolled or recent (within the last two weeks) uncontrolled heart failure should not drive.

Medical standards for individuals applying for or renewing a class 1 or class 6 licence and/or a D, F, R, T or W endorsement (see appendix 3)

When driving should cease

Individuals with hypertrophic cardiomyopathy and syncope should not drive.

When driving may resume or may occur

An individual may be fit to drive if:

- dyspnoea is usually absent on mild exertion, and
- there are no electrocardiographic changes, symptoms, arrhythmias, poorly controlled anticoagulant therapy (see section 3.6), severe hypertension or other conditions that would render the individual unfit to drive.

The Transport Agency may consider granting individuals with a licence or endorsement based on a supporting specialist report.

Medical standards for individuals applying for or renewing a class 2, 3, 4 or 5 licence and/or a P, V, I or O endorsement

When driving should cease

Generally, individuals will be unfit to drive. However, the Transport Agency may consider granting individuals with a licence or endorsement based on a supporting specialist report. Individuals with hypertrophic cardiomyopathy and syncope should not drive.

When driving may resume or may occur

Asymptomatic individuals with hypertrophic cardiomyopathy are generally considered unfit to drive. However, the Transport Agency may consider granting individuals with a licence or endorsement based on a supporting specialist report. An individual with heart failure or cardiomyopathy (ejection fraction equal to or greater than 40 percent) may be fit to drive following a specialist review. Asymptomatic individuals with hypertrophy of the left ventricular wall less than or equal to 25mm may be fit to drive following a specialist review.

3.6 Anticoagulation

Medical standards for individuals applying for or renewing a class 1 or class 6 licence and/or a D, F, R, T or W endorsement (see appendix 3)

When driving may resume or may occur

An individual may be fit to drive if:

- anticoagulation is maintained at the appropriate degree for the underlying condition, and
- there are no electrocardiographic changes, symptoms, arrhythmias, cardiac failure, severe hypertension or other conditions that would render the individual unfit to drive.

Medical standards for individuals applying for or renewing a class 2, 3, 4 or 5 licence and/or a P, V, I or O endorsement

When driving may resume or may occur

An individual may be fit to drive if:

- anticoagulation is maintained at the appropriate degree for the underlying condition, and
- there are no electrocardiographic changes, symptoms, arrhythmias, cardiac failure, severe hypertension or other conditions that would render the individual unfit to drive.

The Transport Agency may impose licence conditions for regular medical assessment, eg annual cardiologist review.

3.7 Congenital heart disease

Medical standards for individuals applying for or renewing a class 1 or class 6 licence and/or a D, F, R, T or W endorsement (see appendix 3)

When driving should cease

An individual should not drive for at least six weeks following successful surgery for congenital heart disease. Specialist assessment should be undertaken before driving can resume.

When driving may resume or may occur

An individual may be fit to drive six weeks after successful surgery for congenital heart disease if there are no electrocardiographic changes, symptoms, arrhythmias, cardiac failure, poorly controlled anticoagulant therapy (see section 3.6), severe hypertension or other conditions that would render the individual unfit to drive.

Medical standards for individuals applying for or renewing a class 2, 3, 4 or 5 licence and/or a P, V, I or O endorsement

When driving may resume or may occur

Individuals with asymptomatic minor congenital heart disorders (including mild pulmonary stenosis, a small atrial or ventricular septal defect, a bicuspid aortic valve without stenosis, and mild coarctation of the aorta without aortic aneurysm) may be fit to drive if there are no electrocardiographic changes, symptoms, arrhythmias, poorly controlled anticoagulant therapy (see section 3.6), severe hypertension or other conditions that would render the individual unfit to drive. An individual may be fit to drive three months after successful surgery for congenital heart disease if:

- there are no electrocardiographic changes, symptoms, arrhythmias, poorly controlled anticoagulant therapy (see section 3.6), severe hypertension or other conditions that would render the individual unfit to drive, and
- there is no evidence of myocardial ischaemia on adequate stress (exercise or pharmacological) testing (electrocardiographic, echocardiographic or scintigraphic).

The Transport Agency may impose licence conditions for regular medical assessment, eg annual cardiologist review. Specialist assessment should be undertaken before driving can resume.

3.8 Aneurysm

Medical standards for individuals applying for or renewing a class 1 or class 6 licence and/or a D, F, R, T or W endorsement (see appendix 3)

When driving should cease

An individual with a thoracic aneurysm of greater than 6.5 cm diameter, or abdominal aortic aneurysm of greater than 5.5 cm, or another vascular abnormality at risk of dissection or rupture, is generally considered unfit to drive. Individuals with Marfans Syndrome should not drive if they have an aneurysm of greater than 4.5 cm.

In exceptional circumstances, the Transport Agency may grant a licence subject to a favourable specialist report.

When driving may resume or may occur

An individual may be fit to drive six weeks after successful surgery.

Medical standards for individuals applying for or renewing a class 2, 3, 4 or 5 licence and/or a P, V, I or O endorsement

When driving should cease

An individual with a thoracic aneurysm of greater than 6.5 cm diameter, or abdominal aortic aneurysm of greater than 5.5 cm, or another vascular abnormality at risk of dissection or rupture, is normally considered unfit to drive. Individuals with Marfans Syndrome should not drive if they have an aneurysm of greater than 4.5 cm.

When driving may resume or may occur

The possibility of returning to driving after successful surgery may be reviewed three months after such surgery, if there are no significant complications. Specialist assessment should be undertaken before driving resumes.

3.9 Other cardiovascular disease

Medical standards for individuals applying for or renewing a class 1 or class 6 licence and/or a D, F, R, T or W endorsement (see appendix 3)

When driving may resume or may occur

An individual may be fit to drive, provided that symptoms are absent on mild exertion, if:

- there are no electrocardiographic changes, symptoms, arrhythmias, poorly controlled anticoagulant therapy (see section 3.6), severe hypertension or other conditions that would render the individual unfit to drive, and
- there is no evidence of myocardial ischaemia on adequate stress (exercise or pharmacological) testing (electrocardiographic, echocardiographic or scintigraphic).

Specialist assessment should be undertaken before driving resumes.

Medical standards for individuals applying for or renewing a class 2, 3, 4 or 5 licence and/or a P, V, I or O endorsement

When driving may resume or may occur

An asymptomatic individual may be fit to drive if:

- there are no electrocardiographic changes, symptoms, arrhythmias, poorly controlled anticoagulant therapy (see section 3.6), severe hypertension or other conditions that would render the individual unfit to drive, and
- there is no evidence of myocardial ischaemia on adequate stress (exercise or pharmacological) testing (electrocardiographic, echocardiographic or scintigraphic).

The Transport Agency may impose licence conditions for regular medical assessment, eg annual cardiologist review. Specialist assessment should be undertaken before driving resumes.

3.10 Heart transplants

Medical standards for individuals applying for or renewing a class 1 or class 6 licence and/or a D, F, R, T or W endorsement (see appendix 3)

When driving may resume or may occur

Successful transplants do not pose a bar to driving unless there are ongoing symptoms. An individual may be fit to drive six weeks after a successful heart or heart-lung transplant if there are no electrocardiographic changes, symptoms, arrhythmias, cardiac failure, poorly controlled anticoagulant therapy (see section 3.6), severe hypertension or other conditions that would render the individual unfit to drive. Specialist assessment should be undertaken before driving can resume. The Transport Agency may impose licence conditions, such as regular medical assessment.

Medical standards for individuals applying for or renewing a class 2, 3, 4 or 5 licence and/or a P, V, I or O endorsement

When driving should cease

Individuals having had heart or heart-lung transplants are normally considered unfit to drive.

When driving may resume or may occur

Individuals who already hold such licences may be allowed to continue driving provided that there are no ongoing symptoms. Individuals should not drive for a period of 12 weeks following discharge from hospital after the transplant and the individual should meet the following criteria:

- absence of symptoms referable to the cardiovascular system
- normal responses to the end of Stage III of the Bruce protocol or its equivalent³
- absence of heart failure and satisfactory ventricular function (ejection fraction greater than 40 percent) on the basis of echocardiograms or other appropriate investigations
- satisfactory compliance with any ongoing treatment and assessment by an appropriate specialist
- absence of any medication side effects that could affect driving ability.

Specialist assessment should be undertaken before driving can resume. The Transport Agency may impose licence conditions, such as regular specialist assessment.

.....
3. This is no ST depression equal or greater than 1mm if baseline ECG normal or greater than 2mm over baseline ST depression if the baseline ECG is abnormal, no ventricular tachycardia (equal to or greater than three beats), normal increase in blood pressure greater than 130mm Hg and no fall in blood pressure greater or equal to 15mm Hg.

3.11 Uncomplicated ECG changes

Conditions such as bundle branch blocks, strain changes, etc, if not associated with symptoms and with normal exercise tolerance, will not normally be a bar to holding a licence to drive any vehicle.

4. Diabetes

Summary table

The table below summarises the information outlined in this section. However, practitioners should ensure that they are familiar with the guidance outlined in the entire section rather than relying solely on the table.

The recommended minimum stand-down periods from driving and guidelines only apply where an individual's medical condition has been adequately treated and stability has been achieved so that road safety is unlikely to be compromised.

Diabetic type and treatment type	Class 1 or class 6 licence and/or a D, F, R, T or W endorsement (see appendix 3)	Class 2, 3, 4 or 5 licence and/or a P, V, I or O endorsement
Type 2 diabetes with dietary control only	Generally considered fit to drive.	Same as private classes.
Type 2 diabetes controlled by oral hypoglycaemic agents	Generally considered fit to drive.	Generally considered fit to drive but may have licence conditions.
Type 2 diabetes requiring insulin supplementation	Generally considered fit to drive.	Some, but not all, individuals may be considered fit to drive and are likely to have licence conditions. Specialist assessment is necessary.
Type 1 diabetes	Generally considered fit to drive.	Generally considered unfit to drive ⁴
Individuals with severe hypoglycaemia unawareness	Should not drive until successfully managed and a satisfactory period of observation has passed without any further episodes.	Generally considered unfit to drive.

4. The Transport Agency may grant a licence in exceptional circumstances, subject to strict licence conditions being imposed, and a favourable assessment by a specialist.

Factors for health practitioners to consider

The aim of determining fitness to drive is to minimise the risk to the individual, and other road users, while maintaining appropriate independence and employment. Health practitioners should consider the following factors, in addition to the guidance outlined in this chapter, when assessing an individual for fitness to drive:

- Type of licence held and type of driving undertaken – professional drivers spend up to an entire working week in their vehicle, and that vehicle can weigh greater than 25,000kg or carry many passengers. A crash involving such a vehicle could put many people at risk. Some forms of commercial driving could exacerbate risks of hypoglycaemic attacks more than others
- Timing, shifts and total driving hours – hypoglycaemia on sulphonylurea drugs and insulin is most common before meals, especially pre-lunch, and is also common overnight. Shift work is more of a risk than regular hours, and total driving hours should not be excessive.
- Medication – consider the effects of medications, and likely compliance with medications, on the individual's ability to drive safely
- Presence of any complications of the disease – particularly any possible visual impairments
- Individual's motor vehicle crash history (if known) – health practitioners may need to recommend a longer period of refraining from driving if an individual has a history or pattern of crashes that may be associated with their condition. Where a health practitioner is aware of a medically related crash, they must inform the Transport Agency if the individual's medical condition remains unresolved and the individual is likely to continue to drive (refer to section 1.4)
- Presence of multiple medical conditions – where an individual has multiple medical conditions, consider any possible combined effects on their ability to drive safely
- Alcohol abuse – a possible alcohol-abuse problem may increase the likelihood of hypoglycaemic attacks.

Dealing with individuals who are unfit to drive

Health practitioners can usually successfully negotiate short-term cessation of driving.

A person deemed unfit to drive because of severe or recurrent hypoglycaemia or with hypoglycaemia unawareness should be informed of this by their health practitioner. Written notification should also be given. The individual should be told how soon they might expect to have this situation reviewed. If a practitioner suspects that the individual is continuing to drive against medical advice, they are legally obliged to inform the Transport Agency under section 18 of the Land Transport Act 1998 (see section 1.4 of this booklet).

Introduction

Diabetes is a common condition in New Zealand. Current estimates suggest that at least 100,000 people are being treated for the condition and many more are as yet undiagnosed (Ministry of Health 2008). The number of road traffic crashes attributable to diabetes or its treatment is not known, but it is likely to be relatively small. Monitoring by the Transport Agency suggests that diabetes accounts for about 5-10 percent of those motor vehicle crashes attributable to medical factors.

The potential risks of diabetes derive from the metabolic disturbances associated with control of blood glucose on the one hand, and the later complications of the disease on the other. The later complications, giving rise to end-organ damage, should be assessed separately using advice from the appropriate sections of this guide. Specifically, these include:

- visual acuity problems arising from cataract formation and/or diabetic retinopathy and its treatment (see section 6) (note that subjects who have had extensive laser photocoagulation of the retinae often have very poor vision at night, despite adequate daytime acuity, and may also have a limited visual field)
- ischaemic heart disease and cerebrovascular disease, both of which are more prevalent in people with diabetes (see sections 3 and 2, respectively)
- locomotor conditions, particularly of the lower limbs, arising from peripheral neuropathy and/or peripheral vascular disease (see section 5).

Note: obstructive sleep apnoea is not uncommon in obese subjects with type 2 diabetes (see section 10).

Hyperglycaemia and associated diabetic coma (whether ketotic or nonketotic) are generally of little significance to driver safety, as the onset is slow. Hypoglycaemia induced by treatment of diabetes is undoubtedly the most important potential problem from the point of view of driving safety. Its onset may rapidly impair the ability of an otherwise competent and safe driver. It may result in poor motor coordination, impaired judgement and reaction times, inappropriate and aggressive behaviour, and even loss of consciousness. These all pose a potential risk on the roads. The risk of hypoglycaemia is not the same in all patients with diabetes, and the forms of treatment associated with different types of the disease are given different weightings in the guidelines that follow.

The risks of hypoglycaemia are greater with increased driving hours, and the consequences of a crash are potentially greater with larger vehicles and those carrying passengers. Higher safety standards (lower risks) are therefore required for these classes and endorsements.

Hypoglycaemia - causes

Hypoglycaemia is a side effect of treatment of diabetes with insulin or sulphonylurea drugs and also with some newer drugs not currently available in New Zealand. The risk of hypoglycaemia with sulphonylurea drugs is greatest in the elderly, and in subjects with weight loss and poor renal function. It is most likely to occur with long-acting agents, such as glibenclamide. In insulin users, hypoglycaemia usually arises through missed meals, inaccurate or inappropriate insulin dosing, and during or following exercise. It is common in those attempting or achieving tight glycaemic control. With either sulphonylurea drugs or insulin, hypoglycaemia can also occur with alcohol consumption.

Hypoglycaemia unawareness

An inability to detect developing hypoglycaemia and to respond to it appropriately in good time is the single greatest hazard for diabetic drivers. The risk of crashing may be increased 20-fold in this group (Lave et al 1993). As with alcohol intoxication, individuals with this problem may significantly underestimate the degree to which their driving is impaired. The major risk factors for hypoglycaemia unawareness are:

- a prior history of severe hypoglycaemia
- intensive hypoglycaemic therapy
- type 1 diabetes of long duration.

In this context, severe hypoglycaemia is defined as that requiring the help of another party to manage it. Important questions for practitioners to ask in the detection of hypoglycaemia unawareness are:

1. Have you recently experienced severe hypoglycaemia? How many episodes have there been in the last 12 months? Daytime and night-time (waking from sleep) episodes should be documented separately.
2. What symptoms tell you that your blood glucose is getting low? Individuals who report sweating, shaking, tremor and palpitations as their early warning symptoms are likely to have adequate awareness. Those who report confusion, slurred speech, unsteadiness, difficulty concentrating and sleepiness are likely to have impaired awareness.
3. Are you usually able to detect hypoglycaemia before your partner (or friends, family or colleagues)? Or are they usually the first to realise that you are 'hypo' and draw your attention to it? The latter suggests unawareness.

Corroboration by a partner, family member, friend or colleague strengthens the conclusions that can be drawn from the individual's answer. Inspection of the individual's home blood glucose recordings is important. Individuals with hypoglycaemia unawareness often have levels of 3mmol/l or less without symptoms. Those with more than 5-10 percent of readings below 4mmol/l are also likely to be at risk. HbA1c measurements are often close to, or in, the normal range in such individuals.

Hypoglycaemia unawareness is an indication for specialist referral. It can be difficult to manage successfully. The basis of management involves some relaxation of glycaemic targets, intensive self blood glucose monitoring to detect periods of unrecognised hypoglycaemia (particularly at night) and the modification of meals and the insulin regimen.

Individuals with very marked hypoglycaemia unawareness, usually those with type 1 diabetes, should not drive until this can be successfully managed, if possible. If hypoglycaemia unawareness has been successfully managed, an appropriate observation period free of episodes should be required before allowing a return to driving. A specialist assessment should be undertaken before a return to driving.

Management of hypoglycaemia

People taking either insulin or sulphonylurea drugs should be made aware of the precautions they should take to avoid hypoglycaemia while driving, and to manage it should it occur. Adequate education, by an experienced diabetes nurse educator, is strongly recommended for these individuals. These precautions, which apply to all such individuals whatever their class of licence/endorsement, include:

- regular testing and recording of blood glucose, especially before driving
- testing blood glucose every couple of hours on long journeys
- always carrying a form of rapidly absorbed glucose within easy reach in the vehicle
- always having a meal or snack before undertaking long journeys
- telling co-travellers that the individual has diabetes.

The action to be taken if hypoglycaemia occurs while driving includes:

- stop the car and eat fast-acting sugary food
- eat a meal of longer-lasting carbohydrate as soon as possible
- wait until recovery is complete before resuming the journey.

Alcohol

Alcohol use is particularly hazardous for drivers with diabetes. As well as impairing driving performance in its own right, alcohol can precipitate hypoglycaemia (if food intake is inadequate) and it increases hypoglycaemia unawareness.

Temporary fitness to drive

Following mild hypoglycaemia, individuals should not drive for at least an hour, as full cognition can take this long to recover. Following an episode of severe hypoglycaemia, patients should not drive for 24 hours.

An individual who experiences a severe hypoglycaemic episode while driving, irrespective of whether a crash occurred or not, should be advised to stop driving. A minimum period of a month is recommended, during which time remedial action needs to be undertaken. Specialist review will almost certainly be required. Hypoglycaemia in sulphonylurea users can be prolonged, and driving should be stopped for at least 48 hours. Individuals having major changes in therapy (particularly starting insulin treatment) can be temporarily unfit to drive, and may need to stop driving for a few days until it is clear that hypoglycaemia is not a difficulty.

Individuals who have had their pupils dilated for the purpose of retinal examination are also advised not to drive for two hours.

4.1 Type 1 diabetes

Individuals in this group are most likely to suffer hypoglycaemia, and are also those whose diabetes is most difficult to control. Individuals with unstable diabetes should be reviewed thoroughly before being given permission to drive, and adequate education should be given. Practitioners should be aware of the particular dangers of hypoglycaemia in the period after starting insulin therapy, or following major treatment readjustments. Individuals may be temporarily unfit to drive at such times.

Medical standards for individuals applying for or renewing a class 1 or class 6 licence and/or a D, F, R, T or W endorsement (see appendix 3)

There are generally no private driving restrictions for individuals with type 1 diabetes who are on insulin. However, the health practitioner should seek to ensure that these individuals are adhering to their medication regimes, regularly performing blood glucose self-monitoring and maintaining a reasonable level of glycaemic control while minimising the number of hypoglycaemic episodes. It is important that these individuals are regularly monitored, with particular attention to the emergence of diabetic complications that can also affect fitness to drive. Individuals should be aware of the risks of hypoglycaemia and the danger of drinking alcohol.

Medical standards for individuals applying for or renewing a class 2, 3, 4 or 5 licence and/or a P, V, I or O endorsement

When driving should cease

People with type 1 diabetes are generally not considered fit to drive.

When driving may resume or occur

The Transport Agency may, in exceptional circumstances, grant a licence after consultation with the individual's general practitioner and diabetes specialist. Strict conditions are likely to be imposed, which would include the requirements listed below in section 4.4.

4.2 Type 2 diabetes controlled by diet alone

The risks of hypoglycaemia may effectively be discounted in this group, and these individuals may be considered fit for all types of driver licence. However, a change in the requirements for effective glycaemic control (eg the introduction of sulphonylurea drugs or insulin) may necessitate the imposition of restrictions. Late complications of diabetes do occur in such individuals.

4.3 Type 2 diabetes controlled by oral hypoglycaemic agents

The risk of hypoglycaemia is relatively low, but it can occur with the sulphonylurea drugs (tolbutamide, gliclazide, glipizide, glibenclamide) and with meglitinide drugs. It is important that food is not omitted when these tablets are being taken. Individuals should be aware of the risks of hypoglycaemia and the danger of drinking alcohol. Metformin when taken without insulin or sulphonylurea drugs does not cause hypoglycaemia. The same applies to drugs of the thiazolidenedione group and acarbose. It is important that these individuals are regularly monitored for the emergence of diabetic complications that can affect fitness to drive.

Medical standards for individuals applying for or renewing a class 1 or class 6 licence and/or a D, F, R, T or W endorsement (see appendix 3)

No restrictions apply to private driving, but the addition of insulin to achieve better glycaemic control may lead to a period of temporary unfitness to drive.

Medical standards for individuals applying for or renewing a class 2, 3, 4 or 5 licence and/or a P, V, I or O endorsement

These drivers may be considered fit to drive in most circumstances on a licence with conditions, provided there is no history of hypoglycaemia. An initial review from a diabetes specialist may be required to ensure that the treatment regimen is satisfactory, adequate glycaemic control is being achieved and there are no complications of diabetes that may impair driving performance. The granting of a licence in these categories is likely to require the following conditions:

1. an annual medical certificate from a GP documenting:
 - adherence to treatment
 - that the health practitioner has proof of regular self-testing of blood glucose with satisfactory blood glucose levels
 - the absence of hypoglycaemic episodes or unawareness
 - the absence of significant diabetic complications
2. a regular pattern of shifts with adequate meal breaks
3. a satisfactory two-yearly specialist assessment.

If the addition of insulin is required to achieve better glycaemic control, then the individual should be considered under section 4.4.

4.4 Type 2 diabetes partly or solely controlled by insulin

Medical standards for individuals applying for or renewing a class 1 or class 6 licence and/or a D, F, R, T or W endorsement (see appendix 3)

There are generally no driving restrictions for individuals with type 2 diabetes who are on insulin. However, the health practitioner should seek to ensure that these individuals are adhering to their medication regimes and maintain a reasonable level of glycaemic control while minimising the number of hypoglycaemic episodes. Individuals should be aware of the risks of hypoglycaemia and the danger of drinking alcohol. It is important that these individuals are regularly monitored, with particular attention to the emergence of diabetic complications that can affect fitness to drive.

Medical standards for individuals applying for or renewing a class 2, 3, 4 or 5 licence and/or a P, V, I or O endorsement

In cases where insulin has been added to the treatment, additional conditions will be imposed, and not all individuals will necessarily be considered fit to drive. Nocturnal insulin therapy, when clinically appropriate, carries a lower risk of daytime hypoglycaemia than twice-daily or morning insulin regimens, especially those with short-acting components. A review from a diabetes specialist is necessary to ensure that the treatment regimen is satisfactory, adequate glycaemic control is being achieved and there are no complications of diabetes that may impair driving performance. The granting of a licence in these categories is likely to require the following conditions:

1. a six-monthly medical certificate from a GP documenting:
 - adherence to treatment
 - that the health practitioner has proof of regular self-testing of blood glucose with satisfactory blood glucose levels
 - the absence of hypoglycaemic episodes or unawareness
 - the absence of significant diabetic complications.
2. a regular pattern of shifts with adequate meal breaks
3. a satisfactory annual specialist review.

5. Locomotor conditions

(including congenital neurological conditions)

Summary table

The table below summarises the information outlined in this section. It does not describe any tests that may be necessary before some individuals can return to driving. Practitioners should ensure that they are familiar with the guidance outlined in the entire section rather than relying solely on the table.

Medical condition	Class 1 or class 6 licence and/or a D, F, R, T or W endorsement (see appendix 3)	Class 2, 3, 4 or 5 licence and/or a P, V, I or O endorsement
Locomotor conditions	Driving restrictions may be necessary if the individual's ability to drive safely is impaired by a locomotor condition.	Driving restrictions may be necessary if the individual's ability to drive safely is impaired by a locomotor condition. Refer to section 5.1.
Congenital neurological conditions, such as cerebral palsy, spina bifida	Generally no driving restrictions. An occupational assessment or medical assessment may be necessary for some individuals.	Same as private classes.

Introduction

Specific neuromuscular conditions, such as multiple sclerosis, have been dealt with in the section concerning neurological conditions (section 2). This section deals with the fitness to drive arising from a variety of conditions and disabilities that may give rise to pain, muscle weakness, joint stiffness or arthrodesis, amputations and similar impairments arising from disease processes or from trauma. Examples of such conditions are rheumatoid arthritis, osteoarthritis and other degenerative joint disorders, ankylosing spondylitis, Paget's disease, paraplegia and tetraplegia. Some of these conditions are common in the general population, but are rarely of a degree that totally precludes the ability to drive safely.

Broadly, the problems fall into three main groups:

- those conditions affecting the limbs specifically
- disabilities of the spine
- the general or specific impairment of driving ability arising from weakness, impaired mobility and so forth.

Always remember, however, that vehicles with clutches and manual transmission require an individual to have four fully functioning limbs. Should such a level of functioning be in doubt in any case, then an occupational therapist assessment or a practical driving test is recommended.

Three particular factors need to be considered when assessing fitness to drive:

- the strength of muscles to safely carry out driving functions
- the level of flexibility of individual joints or limbs to allow adequate mobility for safe driving
- the presence of pain that may impede movement and reduce the level of safety.

5.1 Locomotor conditions

In general, permanent joint stiffness from whatever cause is not likely to prevent safe driving, although suitable vehicle modifications (such as automatic transmission, spinner knobs and hand controls) may be required in some cases. The fitness to drive a motor vehicle of an individual with a locomotor disability is not generally a medical decision. The assessment and evaluation of the driving skills of such people, together with any requirements for modifications, should be dealt with by those trained and competent to make such decisions, such as occupational therapists who have undertaken training in driver evaluation. Where there is any doubt about an individual's ability to cope with a normal vehicle, refer them to an appropriately trained occupational therapist. Any medical certificate of fitness to drive in such cases should specify that a modified vehicle is required, and how the vehicle is to be modified.

Details of occupational therapists' driving assessment services can be obtained from Enable New Zealand on 0800 171 981 or from Occupational Therapy New Zealand on 04 473 6510.

The following particular problems may require a separate assessment when associated with locomotor problems:

- Pain or severe discomfort – this may be sufficiently severe to distract an individual's attention and thus pose a danger on the road. Acute neck pain, severe back pain, knee or elbow problems, especially when associated with locking, may present situations where it may be necessary to recommend the individual refrain from driving, especially for drivers of heavy vehicles or those driving commercially.
- Associated cerebral deficits – when locomotor disabilities are the result of strokes, brain tumours, severe head trauma or similar conditions, there should be an assessment of the individual's intellectual capacity, any other associated impairments, such as sensory problems, together with an assessment of the risk of epilepsy. Such assessments should follow the advice set out in relation to neurological disorders (see section 2).
- Artificial limbs – there is usually no difficulty in adapting a vehicle to individual requirements, but special conditions may apply for those driving larger vehicles.
- Casts and splints – the application of plaster casts and splints may result in special problems for driving, although these are generally temporary. However, it is not uncommon for individuals to drive themselves to hospital and then find themselves leaving with a limb in a plaster. Staff in emergency and similar departments should be aware of their patients' circumstances to avoid requiring someone to drive unsafely.

Medical standards for individuals applying for or renewing a class 1 or class 6 licence and/or a D, F, R, T or W endorsement (see appendix 3)

When driving should cease

Spinal conditions that severely limit the degree of movement, especially of the neck, should be viewed as a significant disability. Driving should cease until an assessment is undertaken. It is usually possible to allow driving in cases where some degree of movement is retained and when the vehicle is fitted with adequate inside and outside mirrors. The other limiting factor in spinal conditions is generally pain – individuals should not drive with severe pain that interferes with movement of the spine or shoulder and pelvic girdles.

When driving may resume or may occur

Joint or muscle problems affecting one upper limb do not normally render an individual unfit to drive a private motor vehicle, provided that any necessary modifications to the vehicle have been made. This broad judgement applies to unilateral weakness, amputations and flail limb, although each individual still needs to be assessed.

Individuals with below-knee amputations of one or both legs who have full strength and movement in their backs, hips and knee joints, and who are wearing properly fitted prostheses, are normally able to safely drive a suitably modified private vehicle. Individuals with above-knee amputations or conditions resulting in lower-limb paralysis may be considered fit to drive suitably modified vehicles, having hand controls, following assessment and training.

In all cases of clinically significant locomotor problems, individuals need to demonstrate an ability to drive properly and both off-road and on-road driving assessments are likely to be necessary. Occupational therapists with training in driving assessment can assess an individual's ability to drive safely as well as advise on the appropriate modifications for the vehicle. In all cases where modified vehicles are required, this should be stated clearly on the medical certificate, and how the vehicle is to be modified.

Medical standards for individuals applying for or renewing a class 2, 3, 4 or 5 licence and/or a P, V, I or O endorsement

When driving should cease

Individuals need a high level of functional performance to cope with the greater demands of these types of driving. Licences are generally not granted in the following cases:

- if there is peripheral neuropathy resulting in significant loss of sensation or proprioception in the extremities
- if there is an amputation or congenital loss of a limb required to operate a hand or foot control where no modification is practicable
- if there is an amputation or congenital loss or functional loss of both upper or both lower limbs or one upper and one lower limb where no modification is practicable.

When driving may resume or may occur

Licences may be granted in the following cases, provided that the individual is able to demonstrate they are able to meet all necessary practical driving requirements:

- absence of both thumbs
- inflammation and pain in any joint, the spine or muscle group that is not sufficient to interfere with concentration or impair the range of motion of the affected part such that a vehicle cannot be operated safely. In cases where sufficient pain exists to impair the ability to drive safely, these individuals may be reassessed once the pain is brought under control
- reduction in rotation of the cervical spine to less than 45 degrees either to the right or left.

A full off-road and on-road driving assessment from a suitably trained occupational therapist is often necessary.

Individuals with other musculoskeletal conditions, such as a below-knee prosthesis or a forefoot amputation, may also be considered fit for a licence with conditions, provided that suitable vehicle modifications are in place, such as automatic transmission, spinner knobs, hand controls or other necessary adaptations, and provided they have been able to show a satisfactory level of driving competence. Such persons should be fully assessed on an individual basis before any decision is made and health practitioners are invited to discuss the situation with the Chief Medical Adviser or the Medical Section.

5.2 Congenital neurological conditions

In general, there are no restrictions on individuals with congenital conditions such as spina bifida or cerebral palsy if the individual can demonstrate that they can drive safely during the driving tests they sit when they gain their licence.

Some individuals with congenital conditions such as spina bifida or cerebral palsy may have difficulties with driving because of the level of flexibility of individual joints or limbs to allow adequate mobility for safe driving. In such cases, an assessment by an occupational therapist may help determine any vehicle modifications that can be made in order to allow the individual to drive.

6. Visual standards

Summary table

The table below summarises the information outlined in this section. However, practitioners should ensure that they are familiar with the guidance outlined in the entire section rather than relying solely on the table.

Visual condition or test	Class 1 or class 6 licence and/or a D, F, R, T or W endorsement (see appendix 3)	Class 2, 3, 4 or 5 licence and/or a P, V, I or O endorsement
In all circumstances, a visual field of 140° s ⁵ is required.		
Visual acuity	Minimum combined visual acuity of 6/12.	Minimum combined visual acuity of 6/9.
Substandard vision (visual acuity between 6/18 and 6/60 in the worse eye)	Generally no driving restrictions if meet the combined visual acuity standard and visual field standard. We recommend that a thorough eye examination of the better eye for pathology is undertaken. Where an individual's vision can be substantially corrected by wearing lenses, this should be recommended as a licence condition.	Same as private classes.
Monocular vision (visual acuity in the worse eye of less than 6/60)	Generally no driving restrictions once successful adaptation has been achieved. We recommend that a thorough eye examination of the better eye for pathology is undertaken.	Generally considered unfit to drive. However, the Transport Agency may grant licences in exceptional circumstances, eg to existing licence holders if there are sound reasons to do so. An eye examination, including the better eye for pathology, should be undertaken by an optometrist or ophthalmologist.

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5. There should be no scotoma within 20 degrees of fixation.

Visual condition or test	Class 1 or class 6 licence and/or a D, F, R, T or W endorsement (see appendix 3)	Class 2, 3, 4 or 5 licence and/or a P, V, I or O endorsement
Diplopia	Should not drive until the condition has been assessed and satisfactorily treated.	Generally considered unfit to drive. In exceptional circumstances, the Transport Agency may consider granting a licence if the application is supported by an optometrist or ophthalmologist report.
Cataracts and aphakia	Driving restrictions may be necessary if difficulties with glare intolerance or vision occur.	Same as private classes.
Night blindness - retina pigmentosa	A licence may be issued subject to only driving within daylight hours.	A licence is unlikely to be granted. In exceptional circumstances, the Transport Agency may consider granting a licence if the application is supported by an optometrist or ophthalmologist report.
Disability glare	Refer to section 6.9.	Same as private classes.
Colour blindness	No driving restrictions.	Generally no driving restrictions. However, individuals with colour vision problems should be warned of the potential hazards.

Legal obligations on health practitioners relevant to this section

The law requires:

- health practitioners to advise the Transport Agency (via the Chief Medical Adviser) of any individual who poses a danger to public safety by continuing to drive when advised not to (section 18 of the Land Transport Act 1998 – see section 1.4)
- health practitioners to consider *Medical aspects of fitness to drive* when conducting a medical examination to determine if an individual is fit to drive.

Section 18 of the Land Transport Act 1998 also provides that a health practitioner or registered optometrist who gives notice in good faith under section 18 will not be subject to civil or professional liability because of any disclosure of personal medical information in that notice

The requirements for visual standards, in terms of visual acuity and visual field, are outlined in the Land Transport (Driver Licensing) Rule 1999. Therefore, any variations from the standards for visual acuity and visual field can only be granted by the Transport Agency.

The Driver Licensing Rule includes two categories of eyesight:

1. Drivers who have vision in both eyes

Class 1 or class 6, or a D, F, R, T or W endorsement: Have a visual acuity of at least 6/12 using both eyes (or using one eye if has monocular vision).

Classes 2–5, or a P, V, I or O endorsement: Have a visual acuity of at least 6/9 using both eyes and at least 6/18 using each eye separately. Individuals who have a visual acuity of less than 6/18 but better than 6/60 in one eye and who have a combined visual acuity standard of 6/9 do not meet the standards outlined in the Rule because a visual acuity of at least 6/18 is required in each eye. For these individuals, the Transport Agency may grant an exemption from the Rule. In practical terms, health practitioners or optometrists should consider the guidance in section 6.4 when issuing an eyesight or medical certificate, and advise their patient that the Transport Agency will consider their application for an exemption. Medical or eyesight certificates should include a note that the certificate must be sent to the Chief Medical Adviser.

2. Drivers who have vision in only one eye

Class 1 or class 6, or a D, F, R, T or W endorsement: Have a visual acuity of at least 6/12 in one eye.

Classes 2–5, or a P, V, I or O endorsement: No standard is specified in the Rule for monocular vision. Therefore, the holders of these licence types or endorsements would need to apply for an exemption at the time of application or renewal.

Dealing with individuals who are unfit to drive

Health practitioners can usually successfully negotiate short-term cessation of driving, such as while awaiting eye surgery, with patients. However, if longer periods are necessary, we recommend that health practitioners advise their patients both verbally and in writing. We also recommend that the individual be told how soon they might expect to have this situation reviewed. If a practitioner suspects that an individual is continuing to drive against medical advice, they are legally obliged to inform the Transport Agency under section 18 of the Land Transport Act 1998 (see section 1.4).

Introduction

The eyesight standards are the only medical-related standards in this guide that are outlined specifically in the Land Transport (Driver Licensing) Rule 1999. The standards relating to visual acuity and visual field in this section must be met, unless the Transport Agency grants an exemption from the standards outlined in the Rule.

Between 2003 and 2007, a driver's defective vision was considered to have contributed to 72 crashes. As a result of these crashes, four people were killed, 15 people received serious injuries and 79 people received minor injuries. The contribution of vision-related factors is probably significantly underestimated because establishing that a visual condition contributed to a crash poses a number of difficulties. However, studies in the United States of America (American Optometric Association 2000) have shown that the use of vision-related re-licensing policies have shown identifiable safety benefits.

Term of licence

The maximum term for which a licence may be issued is 10 years. In the interest of road safety, progressive conditions may make it prudent to recommend review at shorter intervals. Practitioners may wish to consult with the Chief Medical Adviser or the Medical Review Advisers when recommending shorter-term reviews.

Other factors, such as diminished cognitive ability and restricted movement, when associated with reduced vision may compound the level of risk in driving.

Examples of progressive conditions include:

- age-related macular degeneration
- glaucoma
- diabetic retinopathy
- high myopia
- keratoconus.

Licence conditions

Practitioners can recommend to the Transport Agency that an individual have a condition placed on their licence. Below are some examples of licence conditions that the Transport Agency may impose:

- must wear prescribed lenses
- occlusion to be worn (in cases of diplopia)
- external mirrors fitted on both sides
- daytime driving only
- requirement for regular medical assessment, eg yearly check by an optometrist or ophthalmologist for individuals with deteriorating eyesight problems.

6.1 Temporary visual impairments

An individual should not drive unless they meet the visual acuity and visual field requirements outlined in this section.

Individuals who suffer sudden deterioration of vision in one eye, or in both, should not drive until the condition has recovered or they have obtained an optometric or medical review of their fitness to drive.

Where mydriatics have been used to dilate the pupils, individuals need to be warned that this may impair acuity and induce glare disability. Recovery is generally within two hours and individuals should be advised accordingly.

6.2 Visual acuity

Marked loss of visual acuity is likely to reduce the ability to drive safely. The complexity of visual tasks required for driving suggests that visual defects may become more important under conditions of reduced lighting and at night.

Testing visual acuity

Each eye is to be tested separately and both tested together. The smallest line read with no more than one error represents the visual acuity.

Visual acuity should be tested using either of the following:

- the standard Snellen wall chart, or projector and screen – the chart should be well illuminated (a minimum of 500 lux at the surface) and at eye height from the floor. The chart should be viewed from six metres. If this distance is not available directly, a reversed chart may be viewed indirectly through a mirror, so that the total distance from subject to mirror to chart is six metres an equivalent test, such as a screening instrument of a design approved by the Transport Agency.

Advice for practitioners

Testing distance should be at six metres. Practitioners are advised that testing at distances less than six metres advantages all under-corrected myopes and disadvantages hyperopes. The effect of testing at four metres is to enable the under-corrected myope to read one extra Snellen line.

To maintain the integrity of the minimum standards for visual acuity, compensatory lenses (available from some optical suppliers) should be used at testing distances other than six metres. Alternatively, practitioners should use a reversed chart viewed indirectly through a mirror so that the total distance from subject to mirror to chart is six metres.

An examination by an optometrist is recommended when in doubt, eg if there is noticeable narrowing of the lids to improve vision.

If an individual does not meet the visual acuity standards, then they may be able to apply to the Transport Agency for an exemption from the standards, but a supporting medical or optometric assessment would be needed. For higher classes, or individuals with serious visual conditions (such as progressive conditions or conditions that involve pathology in the eye), consideration would require a supportive assessment from a registered optometrist or ophthalmologist.

Medical standards for individuals applying for or renewing a class 1 or class 6 licence and/or a D, F, R, T or W endorsement (see appendix 3)

The standard of visual acuity required is 6/12 using both eyes together, with or without correcting lenses. When the vision in the worse eye is less than 6/18 but better than 6/60 corrected, the applicant should be classified as having sub-standard vision in one eye (see section 6.4).

Medical standards for individuals applying for or renewing a class 2, 3, 4 or 5 licence and/or a P, V, I or O endorsement

The standard of visual acuity required is 6/9 using both eyes together, with or without correcting lenses. If the worse eye is less than 6/18 but better than 6/60, the applicant is to be classified as having sub-standard vision in one eye (see section 6.4).

6.3 Visual fields

For safe driving, a good visual field is essential to allow a driver to detect other vehicles and pedestrians to the side of the line of vision. The required horizontal field should be tested using either of the following:

- a visual screening instrument of a design approved by the Transport Agency

- confrontation, manual perimetry or a suitable programme on an automated perimeter (for confrontation, the use of a wand with an LED or a small white target at the tip – such as Bjerrum Screen targets – is recommended).

Advice for practitioners

Practitioners should ensure that each quadrant is tested. Where abnormality in the visual field is indicated by the initial screening or clinical examination, refer the candidate to a registered optometrist or ophthalmologist for further examination. The Titmus screener does not test fields above or below the horizontal and 45 degrees either side of fixation. It is very important that any scotoma be assessed.

There should be no significant pathological field defect in the binocular field that encroaches within 20 degrees of fixation either above or below the horizontal meridian. This includes homonymous hemianopic, homonymous quadrantanopic and bitemporal hemianopic defects within 20 degrees of fixation. Practitioners are advised that the following conditions may give rise to significant field defects:

- cerebral lesions
- glaucoma
- panretinal photocoagulation
- retinitis pigmentosa.

Visual field standard for individuals applying for licences of all classes of vehicle with or without endorsements

For all licence classes, the minimum standard is a binocular horizontal field of 140 degrees. There should be no significant pathological field defect encroaching within 20 degrees of the point of fixation.

6.4 Visual acuity in the worse eye less than 6/18 but better than 6/60

For all classes and endorsement types, individuals must meet the visual acuity (see section 6.2) and visual field (see section 6.3) standards. It is important that an individual's better eye is free of pathology that affects fitness to drive.

Medical standards for individuals applying for or renewing a class 1 or class 6 licence and/or a D, F, R, T or W endorsement (see appendix 3)

A medical or optometric examination of the eyes should be undertaken.

Medical standards for individuals applying for or renewing a class 2, 3, 4 or 5 licence and/or a P, V, I or O endorsement

A thorough examination is required, and, where appropriate, individuals should be referred to an optometrist or ophthalmologist for examination to ensure that adequate checks of the better eye for pathology are undertaken.

6.5 Monocular vision

For all classes and endorsement types, individuals must meet the combined visual acuity (see section 6.2) and visual field (see section 6.3) standards. It is important that an individual's better eye is free of pathology that affects fitness to drive. Here, the definition of monocular vision used is where an individual has a visual acuity in their worse eye of less than 6/60 or has vision in only one eye.

Medical standards for individuals applying for or renewing a class 1 or class 6 licence and/or a D, F, R, T or W endorsement (see appendix 3)

The Transport Agency will probably impose a licence condition that any vehicle the individual drives should be fitted with external rear-view mirrors on both sides. Practitioners should recommend this condition when assessing fitness to drive.

Because adaptation to the loss of vision in one eye can vary between individuals, where doubt exists, a practical driving test should be carried out before allowing an individual to return to driving.

Medical standards for individuals applying for or renewing a class 2, 3, 4 or 5 licence and/or a P, V, I or O endorsement

Individuals with monocular vision are generally considered unfit to drive. The Transport Agency may allow exceptions, eg current monocular vision commercial drivers applying for their licence to be renewed. A supporting opinion from an optometrist or ophthalmologist, including an assessment of the health of the good eye, should accompany any requests. The opinion should confirm that the individual's vision meets the combined visual acuity and visual field standards.

The Transport Agency is likely to impose a licence condition that any vehicle the individual drives should be fitted with external rear-view mirrors on both sides.

Because adaptation to the loss of vision in one eye can vary between individuals, where doubt exists, a practical driving test should be carried out before allowing an individual to return to driving.

6.6 Diplopia (double vision)

Diplopia in the primary position represents a hazard to safe driving. An individual who experiences the sudden onset of diplopia (that is considered to be more than transient) should not drive until the condition has been assessed and satisfactorily treated.

All individuals with diplopia should have a vision assessment undertaken by an optometrist or ophthalmologist.

Medical standards for individuals applying for or renewing a class 1 or class 6 licence and/or a D, F, R, T or W endorsement (see appendix 3)

An individual who experiences diplopia (double vision) may drive provided that:

- the diplopia can be remedied by the use of prisms or occlusion and the individual can meet the visual acuity (see section 6.2) and visual field (see section 6.3) standards, and
- the individual has adapted to the condition.

Individuals with diplopia that occurs only in a very limited direction of gaze may be fit to drive.

Advice for practitioners

Practitioners may also determine that, in some individuals, the presence of some forms of diplopia is consistent with safe driving, eg where compensated by head posture.

Medical standards for individuals applying for or renewing a class 2, 3, 4 or 5 licence and/or a P, V, I or O endorsement

Individuals should not drive with diplopia. The Transport Agency may consider issuing a licence subject to a favourable assessment by an optometrist or ophthalmologist. If diplopia is resolved, the Transport Agency may issue a licence.

6.7 Night blindness

Individuals who may have reduced vision in dim light, eg use of miotics, those with cataracts, retinitis pigmentosa and other inherited retinal disorders, and those with diabetic retinopathy treated with panretinal photocoagulation, should be referred to their optometrist or ophthalmologist for assessment of fitness to drive.

Medical standards for individuals applying for or renewing a class 1 or class 6 licence and/or a D, F, R, T or W endorsement (see appendix 3)

Individuals may be considered for a licence with the condition that driving be restricted to daylight hours only.

Medical standards for individuals applying for or renewing a class 2, 3, 4 or 5 licence and/or a P, V, I or O endorsement

Individuals are generally considered unfit to drive. The Transport Agency may consider issuing a licence subject to a favourable assessment by an optometrist or ophthalmologist. The Transport Agency would probably impose a licence condition to restrict driving to daytime hours only.

6.8 Cataracts and aphakia

Cataracts are common, and prevalence increases with age, reducing acuity and sometimes causing increasing problems due to glare. A licence condition of daytime driving only may be recommended on the advice of an optometrist or ophthalmologist.

6.9 Glare disability

Practitioners should note that glare may be disabling in some instances, eg where a cataract is present, following some refractive surgical procedures and for some contact lens wearers. In such cases, practitioners should take appropriate action, which may include recommending the condition of daytime driving only.

6.10 Colour vision

There is no colour vision requirement in determining fitness to drive.

Advice for practitioners

Practitioners should advise individuals of the impact of colour vision on driving. Defective colour vision is mainly inherited and occurs in 8 percent of men and 0.2 percent of women. Of men, 6 percent have a green perception difficulty (deutan defect) and 2 percent have a red perception difficulty (protan defect). Less than half of 1 percent have a severe red perception difficulty (protanopia). Some studies indicate that individuals with a protan defect have a reduced visual distance for detecting vehicle tail lights and red traffic signal lights, and may have an increased nose-to-tail collision rate.

7. Hearing standards

Summary table

The table below summarises the information outlined in this section. It does not describe any tests that may be necessary before some individuals can return to driving. Practitioners should ensure that they are familiar with the guidance outlined in the entire section rather than relying solely on the table.

Medical condition	Class 1 or class 6 licence and/or a D, F, R, T or W endorsement (see appendix 3)	Class 2, 3, 4 or 5 licence and/or a P, V, I or O endorsement
Hearing loss or impairment	Generally no driving restrictions.	Generally no driving restrictions for classes 2, 3, 4 or 5 licence holders. Holders of P, V, I or O endorsements should have a hearing standard of no less than 40dBA in the better ear. However, the Transport Agency may grant licences to individuals who do not meet this standard in some circumstances.

Introduction

There is very little evidence that even profound hearing loss is associated with an increased risk of road crashes (Booher 1978). Visual information is more important in making judgements and avoiding crashes.

General advice

While there are few standards in this area, health practitioners may wish to raise the following matters with their patients.

Use of hearing aids

For new users of hearing aids, the health practitioner may wish to suggest to their patients that they discuss with an audiologist or hearing therapist the possible weaknesses of using a hearing aid while driving.

Use of two side mirrors

In New Zealand, it is not compulsory for all vehicles to have two side mirrors. However, for individuals with a hearing impairment, health practitioners should suggest that they use vehicles with two side mirrors as this would further help them be aware of factors in the road environment, such as emergency vehicles.

Two-way communication while driving

There is a potential road safety risk where a hearing-impaired individual is distracted from concentrating on the driving environment because they must turn to a passenger in order to hold a two-way conversation. In the United Kingdom, it is common practice for hearing-impaired individuals to put a rear-view mirror upside down and inward facing on the dashboard. This allows an individual to keep their eyes on the road and simultaneously communicate with a passenger without turning their heads.

7.1 Hearing impairment

Medical standards for individuals applying for or renewing a class 1 or class 6 licence and/or a D, F, R, T or W endorsement (see appendix 3)

There is no hearing standard.

Medical standards for individuals applying for or renewing a class 2, 3, 4 or 5 licence

There is no hearing standard.

Medical standards for individuals applying for or renewing a P, V, I or O endorsement

Holders of passenger endorsements, vehicle recovery endorsements, testing officer endorsements and driving instructor endorsements sometimes need to be able to have two-way communication with another person without turning their head away from the driving environment.

Therefore, these endorsement holders should do one of the following:

- Meet the hearing standard of no less than 40dBA in the better ear (for details of testing, see below).
- Apply to the Transport Agency, which may allow an endorsement to be issued or renewed if evidence is provided that the endorsement holder will use a method of two-way communication that would not impair their ability to drive safely, eg the use of the rear-view mirror upside down and inward facing on the dashboard so that the individual can keep their eyes on the road or the use of a suitable hearing aid. The Transport Agency may impose a licence condition to use a method of two-way communication when driving under these endorsements.

Testing for 40dBA in better ear

P, V, I or O endorsement holders should pass a 'three metre' hearing test or have a threshold greater than 40dBA. This test requires that a person can hear each word spoken in a normal conversational voice at a distance of three metres. Failure of this simple screening test requires formal audiometric hearing tests to be carried out with pure tone air conduction audiometry. Such an assessment should follow the procedures laid down by the Australian National Acoustic Laboratory, where the standard is an average hearing threshold of no less than 40dBA in the better ear, measured across the lower frequencies of 500, 1000, 2000 and 3000 Hz.

8. Mental disorders

Summary table

The table below summarises the information outlined in this section. Practitioners should ensure that they are familiar with the guidance outlined in the entire section rather than relying solely on the table. The recommended minimum stand-down periods from driving and guidelines only apply where an individual's medical condition has been adequately treated and stability has been achieved so that road safety is unlikely to be compromised.

Medical condition	Class 1 or class 6 licence and/or a D, F, R, T or W endorsement (see appendix 3)	Class 2, 3, 4 or 5 licence and/or a P, V, I or O endorsement
Mental disorder that may impair an individual's ability to drive safely	Whether an individual should or should not drive will be based on the assessment of the following factors, and how they affect an individual's ability to drive safely: 1 psychomotor functioning 2 behaviour 3 mood (including suicidal ideation) 4 medication 5 insight	Same factors to consider as lower licence classes and endorsement types, except consideration should be given to the type of driving the individual undertakes, and any personal safety risks to others. Generally higher standards apply to these drivers.
Severe chronic mental disorder (see section 8.2 for guidance on individuals considered under this category)	Driving should cease where an individual's ability to drive safely may be impaired. The individual is generally unfit to drive until effective treatment is in place, and a period of observation, usually six months, has been undertaken.	Driving should cease where an individual's ability to drive safely may be impaired. The individual is generally unfit to drive until effective treatment is in place, and a period of observation, usually 12 months, has been undertaken.

Legal obligations on health practitioners

The law requires:

- health practitioners to advise the Transport Agency (via the Chief Medical Adviser) of any individual who poses a danger to public safety by continuing to drive when advised not to (section 18 of the Land Transport Act 1998 – see section 1.4)
- health practitioners to consider *Medical aspects of fitness to drive* when conducting a medical examination to determine if an individual is fit to drive
- health practitioners to comply, where appropriate, with the requirements and responsibilities of section 19 of the Land Transport Act 1998 relating to driver licensing matters for patients subject to a Compulsory Inpatient Treatment Order, or special patients 2 (see section 8.2).

Section 18 of the Land Transport Act 1998 also provides that a health practitioner or registered optometrist who gives notice in good faith under section 18 will not be subject to civil or professional liability because of any disclosure of personal medical information in that notice.

Dealing with individuals who are unfit to drive

Individuals other than those subject to section 19 of the Land Transport Act 1998: Health practitioners can usually successfully negotiate short-term cessation of driving with patients. However, if longer periods are necessary, we recommend that health practitioners advise their patients both verbally and in writing. We also recommend that the patient be told how soon they might expect to have this situation reviewed. If a practitioner suspects that a patient is continuing to drive against medical advice, they are legally obliged to inform the Transport Agency under section 18 of the Land Transport Act 1998 (see section 1.4).

Introduction

There have been rapid major advancements in the treatment of mental illnesses in recent years. However, it is unfortunately necessary to be mindful of the abundance of inaccurate information about mental illness that remains in the community. This misinformation is the legacy of an environment that socially excluded and removed people with mental illness. The government's Mental Health Strategy seeks to address this and reduce the negative impact of mental disorders by ensuring unwarranted barriers to participation in all aspects of life for people with mental illness are removed.

Individuals with a mental disorder should not automatically be considered unfit to drive: Health practitioners should assess each individual and the manifestations of their mental disorder or treatment, considering the guidance in this section, to determine if they are fit or unfit to drive. Where appropriate, health practitioners may need to refer the individual to a specialist or a mental health service provider.

The assessment of individuals with mental disorders is one of the more difficult aspects of determining fitness to drive. The effect of mental disorders on the ability to drive safely has not been determined with any degree of certainty, and fluctuations that may occur during a course of clinical illness make it inappropriate to set rigid rules. There are only a few recent studies in this area, which makes the health practitioner's task in determining fitness to drive difficult.

While there is evidence that the prevalence of psychiatric disorders in crash victims is greater than estimates for the general population, not all psychiatric disorders appear to carry an increased degree of accident vulnerability (McDonald and Davey 1996). Personality disorders and alcohol abuse are seen in elevated numbers in crash victims, whereas anxiety and depressive disorders are not seen to be more prevalent than in the general population.

In the absence of clear information on the potential road safety risks, a commonsense approach should be undertaken. For instance, a person suffering an acute psychotic episode totally engulfed in delusions is likely to be dangerous while driving. Similarly, a person severely ill with anxiety or depression, whose reactions are retarded and who cannot concentrate or make decisions and who is absorbed in worries and problems, is unlikely to be a safe driver.

In some areas of mental health provision, a significant level of trust is established between a health practitioner and their patient. In these circumstances, health practitioners may wish to refer their patient to another health practitioner for assessment, rather than risk damaging their practitioner-patient relationship.

8.1 Mental disorders that may impair safe driving

This section outlines general advice on how to assess and determine fitness to drive for an individual with a mental disorder. Individuals who are assessed as unfit to drive using the assessment criteria below should be advised not to drive until:

- they have been satisfactorily treated, or
- the factors that were considered to make them unfit to drive are no longer present, or are no longer at a level that would affect the individual's ability to drive safely.

The following checklist may be useful for health practitioners to consider, in addition to the assessment above.

Does the individual have:

- an absence of major symptoms known to impair driving, including conditions other than their mental disorder
- an absence of enduring, residual impairment to driving
- self-awareness and control of state of mind and symptoms
- willingness and ability to seek and act on advice about their fitness to drive
- compliance with previous recommendations to temporarily stop driving when medically unfit to drive.

8.1.1 **Psychomotor and cognitive functioning**

Health practitioners should consider the following factors, if appropriate:

- Level of arousal – excessive arousal may impair performance and judgement. Underarousal (eg the psychomotor retardation of depression) can impair the ability to drive safely
- An individual's perceptions – perceptual disorders can impair the capacity to accurately see, hear or comprehend the driving environment. Individuals suffering from hallucinations who are constantly preoccupied should not drive, nor should those whose hallucinations are likely to make them an unsafe driver
- Information processing – any impairment to information processing, such as cognitive impairment, excessive preoccupation, poor concentration or the thought disorder of active psychosis, may impair the ability to drive safely
- Memory problems may impair driving ability if more than trivial
- Impaired reactions may impair driving ability
- Anxiety or panic attacks need not prevent driving, but the patient should be advised not to drive at times when acute symptoms occur.

8.1.2 **Behaviour**

The ability to drive safely may be impaired by:

- excessively aggressive or irritable behaviour
- misperceptions about the behaviour or intent of other road users, eg some individuals with paranoid disorders
- erratic or irresponsible behaviour
- poor judgement, recklessness and a sense of invulnerability seen in manic mood states.

8.1.3 **Mood, including suicidal ideation**

Individuals who are subject to elevated or depressed moods, and the behavioural manifestations of these, should be carefully assessed. Particularly consider whether:

- the manifestation of the mood will affect the individual's concentration when driving
- the effect of the mood could alter their ability to drive safely, eg if they consider they are invincible and indicate that they drive aggressively because of this
- the individual has sudden onsets of changes of mood that could result in their driving behaviour being unsafe for periods.

Note: the effects of medications that may sedate are discussed below.

Individuals should be advised not to drive during periods of active suicidal behaviour or intent. The presence of suspected suicidal ideation should be carefully assessed, considering the intensity of suicidal ideas, impulsiveness, likelihood of attempt and imminence. Suicidal thinking may be an acute phase that subsides quickly, or may be ongoing.

8.1.4 **Medication**

The effect of medication should be carefully assessed, including the individual's likely compliance with their medication and any impacts on the individual's ability to drive safely. Consider:

- how medication can control any factors of an individual's condition that may impair their ability to drive safely
- side effects of sedation, eg risk of somnolence, impaired reactions or ability to process information
- side effects on motor skills, such as impaired coordination
- specific side effects, such as blurred vision, hypotension or dizziness.

Each patient should be individually assessed, taking into account the known profile of effects of the drug, the dose and the degree to which the illness is controlled.

Psychotropic medication can temporarily impair an individual's ability to drive safely. When starting most psychotropic medication or increasing a dose, a person should not drive until the side effects, such as perceptual or motor skills difficulties, are unlikely to affect the individual's ability to drive safely.

8.1.5 **Insight and judgement**

This is particularly important in conditions that fluctuate or are episodic, eg if the patient is able to judge when it is safe or not safe to drive. This should include consideration of the individual's history, eg whether they have a history of sudden unexpected onset of symptoms that could impair their ability to drive safely.

8.1.6 Public safety risks

While not relating to the ability to drive safely, section 18 of the Land Transport Act 1998 requires health practitioners to report any individual who poses a public safety risk by driving when advised not to. This can include the risk to individuals other than the driver for personal safety reasons.

For P, V, I or O endorsement holders, health practitioners should consider any possible public safety risks that may occur because of the nature of work these endorsements entail. For example, all these endorsements can involve substantial contact with many strangers, a high-stress working environment and dealing with an individual in isolated circumstances. Health practitioners should advise those individuals who may pose a risk to others, from a personal safety perspective, not to drive in these endorsement capacities.

Additional advice: Given driving is a task that requires considerable concentration, some patients may need to be advised not to drive in anxiety states or when suffering depression if concentration is likely to be reduced.

8.2 Severe chronic mental disorders

The diagnostic criteria in section 8.1 should be used to assess individuals with severe chronic mental disorders that affect an individual's ability to drive safely. Examples of mental conditions that could impact on an individual's ability to drive safely are severe and ongoing anxiety or depression, severe chronic schizophrenia and severe bipolar disease. Individuals with severe chronic mental conditions should be given the recommended periods to refrain from driving outlined below.

Note that this section does not imply that all individuals with anxiety or depression or schizophrenia or bipolar disease should refrain from driving. This section only applies to those individuals who:

- have an ongoing serious occurrence of their mental illness, which may include a regular pattern of episodes where their ability to drive safely may be affected by their mental condition
- do not respond well to treatment or are non-compliant with treatment over extended periods of time, such as over several months, and this may impair their ability to drive safely.

Medical standards for individuals applying for or renewing a class 1 or class 6 licence and/or a D, F, R, T or W endorsement (see appendix 3)

Where an individual's mental condition is severe and chronic and affects their ability to drive safely for extended periods, the individual is considered unfit to drive until effective treatment is in place and a period of observation, usually six months, has been undertaken. However, the time away from driving will depend on how the individual responds to treatment, and the likelihood of further relapses. A psychiatric assessment is required before allowing the patient to drive again.

Medical standards for individuals applying for or renewing a class 2, 3, 4 or 5 licence and/or a P, V, I or O endorsement

Commercial driving can involve additional stresses that private drivers do not encounter, such as tight schedules, contact with the public and long hours. Any severe and chronic mental condition that impairs an individual's ability to drive safely for an extended period will render the individual unfit to drive for a period, usually 12 months. In exceptional circumstances, the return to commercial driving can be significantly less than 12 months but this will depend on:

- a satisfactory period of being stable and symptom free
- a full, supportive, relevant psychiatric opinion
- a low risk of recurrence or relapse
- absence of residual impairment.

Where it is recommended that an individual be granted a driving restriction of less than nine months, the health practitioner may wish to write to the Chief Medical Adviser and outline the patient's circumstances, including the nature of the commercial driving that is generally undertaken, and the patient's prognosis.

Section 19 of the Land Transport Act 1998

Very few people who experience mental disorder or suicidal ideation are subject to the Mental Health (Compulsory Assessment and Treatment) Act 1992. The spirit of the Act is to facilitate treatment in the community wherever possible, to enable people to participate in their normal day-to-day activities. An individual can still drive under this Act unless:

- the responsible clinician assesses the person as unfit to drive and recommends that they not drive for a specific reason and period of time, or
- the individual is detained in hospital or is a special patient.

Section 19 of the Land Transport Act 1998 (see appendix 2) applies to individuals subject to a Compulsory Inpatient Treatment Order or special patients, as defined in the Mental Health (Compulsory Assessment and

Treatment) Act 1992. Section 19 places legal responsibilities on 'persons in charge of a hospital' and 'Directors of Area Mental Health Services' as follows:

Persons in charge of a hospital

Where a patient is subject to section 19 of the Land Transport Act 1998, the person in charge of a hospital is required to advise the Transport Agency. An example notification letter is outlined in appendix 6.

Directors of Area Mental Health Services (DAMHS)

DAMHS have a range of actions to take, depending on the patient's circumstances and the type of licence the patient holds. Flowcharts A and B in appendix 7 outline the processes for section 19 of the Land Transport Act 1998 in respect to the two categories of licence classes and endorsement types.

9. Problems associated with increasing age

Summary table

The table below summarises the information outlined in this section. It does not describe any tests that may be necessary before some individuals can return to driving. Practitioners should ensure that they are familiar with the guidance outlined in the entire section rather than relying solely on the table.

Medical condition	Class 1 or class 6 licence and/or a D, F, R, T or W endorsement (see appendix 3)	Class 2, 3, 4 or 5 licence and/or a P, V, I or O endorsement
Problems associated with increasing age	Generally no licensing restrictions unless a medical condition(s) is present that may affect the individual's ability to drive safely. If a medical condition is present, refer to the appropriate section of this guide, eg section 6 if a visual condition is present.	Same as private classes.
	Conditional licensing may be appropriate for some individuals with some medical conditions, eg no night driving for individuals with night vision problems.	Consideration should be given to the type of driving undertaken.

Factors for health practitioners to consider

The aim of determining fitness to drive is to minimise the risk to the individual, and other road users, while maintaining appropriate independence and employment.

Health practitioners should consider the following factors, in addition to the guidance outlined in this chapter, when assessing an individual for fitness to drive:

- Presence of medical conditions - impact of medical condition(s) on the ability to drive safely. Carefully consider the impacts of multiple medical conditions and ageing factors.

- Type of licence held and type of driving undertaken – commercial drivers spend up to an entire working week in their vehicle, and that vehicle can weigh greater than 25,000kg or carry many passengers. A crash involving such a vehicle could put many people at risk.
- Medication – consider the effects of medications, and an individual's likely compliance with medications, on their ability to drive safely. Particular caution is required with the prescription of hypnotics in older people who drive, due to the possibility of exaggerated responses as a result of reduced clearance or enhanced sensitivity.
- Individual's motor vehicle crash history (if known) – health practitioners may need to recommend a longer period of refraining from driving if an individual has a history or pattern of crashes that may be associated with their condition. Where a health practitioner is aware of a medically related crash, they must inform the Transport Agency if the individual's medical condition remains unresolved and the individual is likely to continue to drive (refer to section 1.4).

Introduction

It is important that older people retain their independence, and driving is one factor that can facilitate this. Age by itself is not a bar to holding a driver licence and many people of advanced years continue to drive safely.

Although chronological age is not an indicator of an individual's physical well-being, the natural ageing process is accompanied by a significant increase in the incidence of medical conditions that can affect safe driving, eg dementia, stroke and heart disease. Some older drivers also take medications that can affect driving performance. The combination of these factors means that the regular assessment of the medical fitness to drive of older drivers is necessary.

With increasing age can come a number of factors that may impair safe driving, eg:

- early onset of fatigue
- slowed responses
- visual problems
- impaired cognitive function
- impaired mobility
- medical conditions that primarily affect older people, such as dementia.

Crash statistics show that, while older drivers in New Zealand are involved in relatively few crashes, in terms of crashes per kilometre driven, they are second only behind young drivers in terms of crash risk (the likelihood of having a crash). Based on Police crash reports for the period 2003–2007, age-related factors were estimated to contribute to 347 medical-related crashes. This is about 20 percent of medical-related crashes during this period.

General advice

Driving can be an integral part of an older person's life and independence. Where a health practitioner considers that an older driver may need to refrain from driving in the near future, health practitioners may wish to counsel the older driver on this earlier than when refraining from driving is required, to allow the older driver to start thinking about alternative transport arrangements. This is particularly important for conditions that may impair the older driver's memory, as some older drivers may continue to drive when they have been advised not to, simply because they do not remember the health practitioner's advice. Where an older driver may need to give up driving, health practitioners should consider involving supportive family members and other support networks of the individual.

The presence of borderline mental or physical limitations may necessitate more frequent screening in individual cases. A health practitioner can write to the Chief Medical Adviser to recommend that the Transport Agency impose a licence condition for more frequent medical assessment for older drivers with conditions that are likely to substantially deteriorate between medical examination requirements.

Health practitioners should advise older drivers about the enhanced effects of alcohol on the ageing brain. The extra dangers of fatigue for the older driver should also be drawn to their attention.

When there is evidence of the onset of a deterioration of skills or cognitive ability, health practitioners may wish to advise individuals that they should consider, as much as possible:

- reducing the amount of driving undertaken
- avoiding peak traffic periods
- avoiding busy roads
- avoiding night driving.

Occupational therapist assessment

Where there may be medical factors that could affect an older driver's ability to drive safely, it may be appropriate for the older driver to have a driving assessment by an occupational therapist with specialist skills in driver assessment. These specialists are available in most centres and offer a thorough, independent, objective assessment of driving ability that is a valuable adjunct in determining fitness to drive.

Occupational therapists assist people with disabilities, including age-related disability, to be independent in the activity of driving where technical and financial resources allow. Occupational therapists may also advise individuals with disabilities that result in them being unsafe to cease driving. Occupational therapists' driving assessments cover a wide range of skills required for safe operation of a vehicle, including:

- biomechanical problems – these are evaluated and recommendations are made for the acquisition of suitable vehicles and appropriate vehicle modifications, with consideration given to lifestyle and mobility devices such as wheelchairs
- cognitive skills, including concentration, decision making, eye–hand coordination and impulsivity – to ensure ability to cope with the demands of driving and traffic situations.

Details of occupational therapists' driving assessment services can be obtained from Enable New Zealand on 0800 171 981 or from Occupational Therapy New Zealand on 04 473 6510.

Medical assessment of the older driver

Medical standards for individuals applying for or renewing a class 1 or class 6 licence and/or a D, F, R, T or W endorsement (see appendix 3)

The assessment of the older driver should take particular note of the following:

1. Medical history

- history of previous or existing medical problems, with particular attention to episodes of dizziness, vertigo, angina, visual disturbances, transient ischaemic attacks and similar episodes
- questions about any recent motor vehicle crashes or near misses
- current medications.

2. Mental function

- orientation in time and space, recent memory, coordination, congruity of behaviour and responses, inattention, confusion, ability to communicate (see section 2.8).

3. Vision

- for details of testing, see section 6
- general visual acuity and visual fields should meet the required standards.

4. Cardiovascular system

- presence of poorly controlled hypertension
- presence of arrhythmias
- evidence of significant ischaemic heart disease.

5. Central nervous system

- Parkinsonism
- post-stroke effects
- transient ischaemic attacks.

6. Locomotor system

- general mobility and strength, especially in relation to arthritis and other degenerative conditions.

Also consider the presence of other conditions, such as malignant disease or significant respiratory problems, in relation to the individual's overall fitness to drive. Where some level of doubt exists, it will be prudent to arrange for further assessment, eg a practical driving test or an occupational therapist assessment. In certain cases, it may be possible to impose conditions on a driver licence in order to meet a patient's specific limitations, eg no night driving may be a licence condition for those with night blindness.

Medical standards for individuals applying for or renewing a class 2, 3, 4 or 5 licence and/or a P, V, I or O endorsement

When driving should cease

This will depend on the nature of any medical condition(s) and any age-related factors.

The medical standards are stricter than for private driving. Also consider whether an annual assessment is warranted. Particular thought should be given to:

- type of work being undertaken
- hours of driving required
- type of vehicle being driven (including the nature of controls, transmission, etc).

10. Miscellaneous conditions

Summary table

The table below summarises the information outlined in this section. It does not describe any tests that may be necessary before some individuals can return to driving. Practitioners should ensure that they are familiar with the guidance outlined in the entire section rather than relying solely on the table.

Medical condition	Class 1 or class 6 licence and/or a D, F, R, T or W endorsement (see appendix 3)	Class 2, 3, 4 or 5 licence and/or a P, V, I or O endorsement
Obstructive sleep apnoea	Individuals who meet the high-risk profile should not drive until condition has been adequately treated. Annual medical review may be a licence condition.	Same as private classes.
Narcolepsy	Individuals who meet the high-risk profile should not drive until condition has been adequately treated.	Individuals with severe narcolepsy or cataplexy are generally considered unfit to drive.
Respiratory conditions	Individuals with severe chronic respiratory failure should not drive. Individuals who may have severe respiratory failure attacks should be warned not to drive during these attacks.	Same as private classes.
Renal conditions	Generally no driving restrictions. Individuals with end-stage renal failure may be unfit to drive.	Same as private classes.
Cancer	Generally no driving restrictions. Carefully consider whether the cancer or treatments may affect the ability to drive safely.	Same as private classes.
HIV, AIDS and driving	Generally no driving restrictions. Individuals with complications of HIV/AIDS that may impair their ability to drive safely should not drive.	Same as private classes.
Intellectual disability	No general driving restrictions, unless individual's medical status changes.	Same as private classes.

Introduction

Many medical conditions may impair an individual's ability to drive safely. This section deals with some miscellaneous conditions that are not covered in other sections of the guidelines.

10.1 Excessive daytime sleepiness

Sleepiness can be classified as follows:

- Mild sleepiness – describes infrequent sleeping during times of rest or when little attention is required
- Moderate sleepiness – describes sleep episodes that occur on a regular basis during activities requiring some degree of attention, eg attending conferences, movies or the theatre, similar group meetings, operating machinery or watching children
- Severe sleepiness – describes sleep episodes that are present daily and during activities that require sustained attention, eg eating, direct personal conversation, walking and physical activities, as well as operating motor vehicles.

The most common cause of excessive sleepiness is insufficient sleep. Shiftwork, time of day (circadian factors), sedatives and alcohol may increase sleepiness.

Two conditions are of importance in respect of daytime drowsiness, ie obstructive sleep apnoea (OSA) syndrome and narcolepsy. Both conditions have been associated with significantly higher rates of crashes and people suffering from these conditions tend to underestimate their level of daytime sleepiness (Parkes 1983 and Stradling 1989). Whenever these conditions are suspected in any individual, they should be fully investigated by the appropriate specialists and treatment instituted.

It is important to appreciate that the degree of impairment of driving skills varies widely between OSA sufferers, reflecting individuals' differing ability to cope with sleep disruption (George et al 1996) and the severity of the OSA. Similar comments apply to narcolepsy. This makes blanket advice to all patients with OSA very difficult. The situation is further compounded by a lack of a validated objective measure of sleepiness and difficulty gaining access to sleep investigations in some parts of New Zealand. Repeated testing to monitor improvement following therapy is not a realistic option. Thus, health practitioners should be aware that assessment of sleepiness is principally by individuals' own subjective assessment using questionnaires; the validity of questionnaire assessment on a given individual cannot be assured.

Those with severe disease, as documented by a sleep study, or a previous sleep-related motor vehicle crash, are in the high-risk category.

Health practitioner assessment is required to evaluate the cause of symptoms, assess the severity of sleepiness, provide initial treatment recommendations and, where appropriate, refer an individual for specialist evaluation.

10.1.1 Obstructive sleep apnoea

Obstructive sleep apnoea (OSA) syndrome is characterised by repeated apnoea (breathing pauses), habitual snoring and daytime sleepiness. Clinical evaluation helps to assess the severity of symptoms and other causes of sleepiness, particularly chronic sleep restriction (insufficient sleep). OSA is frequently associated with obesity, a thick neck and a reddened and oedematous oropharynx. As clinical criteria lack specificity, a sleep study is usually required. This allows accurate measurement of severity, identification of alternative sleep disorders and documentation of the effect of sleep stage and position.

Medical standards for individuals applying for or renewing a class 1 or class 6 licence and/or a D, F, R, T or W endorsement (see appendix 3)

When driving should cease

Driving should be restricted or cease for individuals who meet the high-risk driver profile, as follows:

- are suspected of having OSA where there is a high level of concern regarding the risk of excessive sleepiness while driving while the individual is waiting for the diagnosis to be confirmed by a sleep study
- complain of severe daytime sleepiness and have a history of sleep-related motor vehicle crashes or there is an equivalent level of concern
- have a sleep study that demonstrates severe OSA and either it is untreatable or the individual is unwilling or unable to accept treatment.

When driving may occur or resume

Individuals may resume driving or can drive if their OSA is adequately treated under specialist supervision, with satisfactory control of symptoms. The Transport Agency may impose licence conditions for regular medical assessment. Medical follow-up may be delegated to the General Practitioner.

Medical standards for individuals applying for or renewing a class 2, 3, 4 or 5 licence and/or a P, V, I or O endorsement

Commercial drivers may spend long hours driving their vehicle, operate a heavy vehicle or carry many passengers. A crash involving such vehicles could place many people at risk. Suspected OSA should always be investigated by a sleep study. Symptoms may be underreported, given the potential implications of driving restrictions.

When driving should cease

Driving should cease for individuals who meet the high-risk profile, as follows:

- are suspected of having OSA where there is a high level of concern regarding the risk of excessive sleepiness while driving while the individual is waiting for the diagnosis to be confirmed by a sleep study
- complain of severe daytime sleepiness and have a history of sleep-related motor vehicle crashes or there is an equivalent level of concern
- have a sleep study that demonstrates severe OSA and either it is untreatable or the individual is unwilling or unable to accept treatment.

When driving may occur or may resume

Individuals may resume driving or can drive if their OSA is adequately treated under specialist supervision, with satisfactory control of symptoms. Consideration should be given to the type of driving and hours of driving an individual undertakes. If there is any residual risk of daytime sleepiness, health practitioners should recommend a restriction in working hours or shiftwork. The Transport Agency may impose licence conditions for regular medical assessment. Medical follow-up may be delegated to the General Practitioner.

10.1.2 Narcolepsy

This condition is often associated with cataplexy. Features such as transient diplopia, automatic behaviour and memory lapses have also been reported in some cases. The condition is usually lifelong and will require continuing medication. Not all individuals with narcolepsy suffer the full range of symptoms and not all suffer from unpredictable episodes of cataplexy. Health practitioners should consider the individual's circumstances.

Medical standards for individuals applying for or renewing a class 1 or class 6 licence and/or a D, F, R, T or W endorsement (see appendix 3)

When driving should cease

Individuals should not drive if they are suspected of having narcolepsy that is likely to impair their ability to drive safely (where there is a high level of clinical concern that the individual may be unsafe to continue driving), and are waiting for the diagnosis of narcolepsy to be confirmed.

Driving should stop on diagnosis until:

- there is a satisfactory response to treatment, and clearance by an appropriate specialist, or
- it is established that the individual does not suffer from the full range of symptoms, in particular unpredictable episodes of cataplexy, and, therefore, is unlikely to be a significant road safety risk.

The Transport Agency may impose licence conditions for regular medical assessment.

Medical standards for individuals applying for or renewing a class 2, 3, 4 or 5 licence and/or a P, V, I or O endorsement

When driving should cease

Individuals who have severe narcolepsy or narcolepsy with excessive sleepiness or cataplexy are generally considered unfit to drive.

10.2 Respiratory conditions

Medical standards for all licence classes and/or endorsement types

Severe respiratory conditions or severe respiratory failure can affect the ability to drive safely, but in most cases, by the time this stage is reached, it will be apparent that an individual is unfit to drive. However, in conditions such as asthma or chronic obstructive pulmonary (respiratory) disease, particularly when associated with significant emphysema, the possibility of disabling episodes of loss of consciousness should be considered and individuals should be warned not to drive during severe attacks or exacerbations. Individuals on continuous oxygen therapy are generally considered unfit to drive.

10.3 Renal conditions

Medical standards for all licence classes and/or endorsement types

In general, renal disorders do not normally constitute a problem with respect to safe driving unless end-stage renal failure or other complications have developed. For commercial licence classes and endorsement types, a licence condition for regular assessment may be imposed.

10.4 Cancer and driving

Medical standards for all licence classes and/or endorsement types

Cancer may affect the ability to drive safely either as a result of general debility and other medical problems related to the condition, or more especially from the dangers of epilepsy associated with cerebral secondaries and primary cerebral tumours.

The effects of cancer and treatment on general sites in the body will be largely covered by the general provisions of the previous sections. The major concern will always be the presence or likelihood of primary or secondary tumours in the brain.

10.5 HIV, AIDS and driving

The presence of antibodies to the human immunodeficiency virus (HIV) does not constitute a bar to driving. However, early manifestation of the complications of HIV/AIDS may often show impaired cognitive processes together with isolated neurological defects. Complications of AIDS can include dementia. The evaluation of neurological conditions is discussed in section 2.

Medical standards for all licence classes and/or endorsement types

There are generally no driving restrictions for individuals with complications of HIV/AIDS. However, driving restrictions may be necessary where an individual develops a complication that may impair their ability to drive safely.

The Transport Agency may impose licence conditions for regular medical assessment.

10.6 Intellectual disability

Medical standards for all licence classes and/or endorsement types

There are generally no driving restrictions for individuals who have an intellectual disability if they can pass the requirements to hold a licence, such as pass the appropriate theory test and practical driving tests. However, review of fitness to drive may be required where there are changes in the individual's medical status that, when combined with their intellectual disability, may impair their ability to drive safely, eg the individual develops a disorder that impairs their motor skills.

Psychological assessment, or assessments of ability to deal with emergency situations requiring accurate judgement, may be necessary where cases of doubt exist.

Individuals who became intellectually disabled after they gain their licence and/or endorsement are dealt with in section 2 'Neurological conditions'.

11. Effects of medications, drugs and abuse of substances

Summary table

The table below summarises the information outlined in this section. Practitioners should ensure that they are familiar with the guidance outlined in the entire section rather than relying solely on the table.

Medical condition or situation	Class 1 or class 6 licence and/or a D, F, R, T or W endorsement (see appendix 3)	Class 2, 3, 4 or 5 licence and/or a P, V, I or O endorsement
Patients on oral methadone treatment programme	Should not drive if the treatment can affect the ability to drive safely.	Same as private classes.
Alcoholism and/or drug addiction	Generally no driving restrictions. However, if symptoms or effects may impair an individual's ability to drive safely, then the individual should not drive until effective treatment has been established.	Same as private classes.

Important: Section 11 contains a list of general medications and drugs that may impair driving. However, health practitioners should always consult the manufacturer's recommendation when prescribing medications and advise patients where medication(s) may impair their ability to drive safely.

Factors for health practitioners to consider

The aim of determining fitness to drive is to minimise the risk to the individual, and other road users, while maintaining appropriate independence and employment.

Health practitioners should consider the following factors, in addition to the guidance outlined in this chapter, when assessing an individual for fitness to drive:

- individual's ability to drive safely, eg some individuals may not respond well to medications, and therefore may not be able to drive even when most individuals taking that form of medication may be able to drive
- the impact of changing prescriptions or levels of a medication on the ability to drive safely
- the cumulative effects of medications on an individual's ability to drive safely

- type of licence held and type of driving undertaken – commercial drivers spend up to an entire working week in their vehicle, and that vehicle can weigh greater than 25,000kg or carry many passengers. A crash involving such a vehicle could put many people at risk
- presence of multiple medical conditions – where an individual has multiple medical conditions, consider any possible combined effects on an individual's ability to drive safely
- other factors that may exacerbate risks, eg a known history of use of illicit drugs and medications.

Each individual should be assessed, taking into account the known profile of the effects of the drug, the dose, the degree to which the illness is controlled, and the presence of other medical problems that may impair their ability to drive safely.

Introduction

The best-known and best-documented substance coming within these categories is alcohol. New Zealand, like most countries in the world, has strict legislation about drinking alcohol and driving. The effects on driving of other recreational drugs as well as prescription medications are less well documented. A number of studies have shown that an increased risk of road crashes has been associated with the use of benzodiazepines, antidepressants, strong analgesics and hypoglycaemic therapy. Also remember that many medications may interact with each other to exacerbate effects on driving performance. Similarly, the combination of alcohol with a wide range of medications may impair performance to the extent that a crash becomes a likely result. The use of illicit drugs, such as cannabis (marijuana), is also likely to be a significant safety hazard, based on the known physiological effects. The use of hallucinogenic agents also poses a significant risk to driving safety.

Consumption of alcohol associated with driving is one of the most serious problems on New Zealand roads. Health practitioners should discuss this with patients who have been identified as having an alcohol problem and are seeking treatment.

Similarly, health practitioners should discuss with patients seeking treatment for drug problems, whether hard-line drugs such as heroin or so-called 'soft drugs' such as cannabis, the potential implications of driving under the influence of drugs. New Zealand has a network of Alcohol and Drug Assessment Centres, and patients can be referred whenever alcohol or drug dependency is in question. A list of these centres may be obtained from the Transport Agency. Particular road safety risks are:

- sedation effects – risk of somnolence (sleepiness), impaired reactions or ability to process information
- euphoria effects, such as drugs that have a similar effect to illicit drugs
- motor effects, such as impaired coordination
- specific side effects, such as blurred vision, hypotension or dizziness

- exacerbation of other medical-related risks, eg some antidepressants and some antipsychotics reduce the epileptic threshold and may trigger epileptic attacks in some individuals.

11.1 Medication

When prescribing medications, health practitioners should check the British National Formulary (BNF) and/or the New Ethicals Catalogue to determine if any medication prescribed may impair the ability to drive safely. Individuals should be warned where a medication may impair their ability to drive safely. The following is a list of the more common medications, drugs and substances of abuse that may impair driving skills. Note that some of these (such as antihistamines and anti-motion sickness preparations) may be obtained without prescription.

- Sedatives, hypnotics or anti-anxiety agents
 - Barbiturates
 - Benzodiazepines
- Analgesics
 - Codeine
 - Narcotic drugs
 - Propoxyphene
- Anti-allergy agents
 - Antihistamines
- Antipsychotic and antidepressant agents
 - Tricyclic and similar antidepressants
 - Haloperidol
 - Phenothiazines
- Anti-motion sickness agents
 - Antihistamines and related compounds
 - Hyoscine and related compounds
- Some antihypertensive agents
- Skeletal muscle relaxants
 - Dantrolene
- Ophthalmic agents (topical preparations)
 - Most agents used for treating glaucoma

- Drugs and chemicals of abuse
 - Alcohol
 - Amphetamines (chronic use)
 - Cocaine
 - Cannabis
 - Heroin, morphine and methadone
 - LSD and other hallucinogenic agents
- Some antimalarial medication.

11.2 Alcohol and/or drug addiction and dependency

Medical standards for all licence classes and/or endorsement types

Individuals with symptoms or effects of alcohol and/or drug dependency or abuse that may impair their ability to drive safely should be advised not to drive until effective treatment has been established, eg where the effects of the individual's dependency impair their motor skills, perceptions, cognitive abilities or other factors necessary for safe driving.

Take care where an individual has another medical condition, such as epilepsy, that can be exacerbated by the effects of alcohol and/or drugs.

11.3 Methadone

Medical standards for all licence classes and/or endorsement types

When driving can resume or may occur

An individual on an oral methadone treatment programme may continue to drive if the individual is stable on the programme and their methadone treatment is unlikely to affect their ability to drive safely.

Health practitioners should be aware of the effects of oral methadone and a combination of any illegal drugs on driving, and where appropriate advise patients that they should not drive when taking oral methadone and illegal drugs.

12. Driving after surgery

The table below summarises the information outlined in this section. Practitioners should ensure that they are familiar with the guidance outlined in the entire section rather than relying solely on the table.

Type of anaesthetic	Class 1 or class 6 licence and/or a D, F, R, T or W endorsement (see appendix 3)	Class 2, 3, 4 or 5 licence and/or a P, V, I or O endorsement
General anaesthetic	Individuals should not drive within 12 hours of a general anaesthetic.	
Local anaesthetic	Individuals should not drive if the anaesthetised region impairs motor or cognitive functioning or the individual's ability to control a vehicle, which could affect their ability to drive safely.	

Factors for health practitioners to consider

The aim of determining fitness to drive is to minimise the risk to the individual, and other road users, while maintaining appropriate independence and employment.

Health practitioners should consider the following factors, in addition to the guidance outlined in this chapter, when assessing an individual for fitness to drive:

- guidance in relation to the medical condition for which surgery was performed – see the relevant section of the guide
- individual's ability to drive safely, eg some individuals may not respond well to anaesthetic, and therefore may not be able to drive even when most other individuals may be able to drive
- cumulative effects of medications and anaesthetic on an individual's ability to drive safely
- type of licence held and type of driving undertaken – care needs to be taken when advising commercial drivers when they can return to commercial driving after surgery. Some forms of commercial driving require long hours and heavy work, which may, combined with the effects of surgery, increase the risk of a crash. Also, commercial drivers tend to drive larger vehicles or may drive buses, and this has the potential to put more people at risk if a crash occurs
- presence of multiple medical conditions – consider any possible combined effects on an individual's ability to drive safely.

Introduction

Advances in medical science, anaesthetic and the management of surgery patients have now made it possible for patients to have day surgery procedures, or to be released from hospital shortly after having surgery. However, this raises some issues for safe driving, such as:

- poor concentration, excessive sleepiness and slower reaction times from the use of anaesthetics
- effects of the surgery, including pain or limited mobility or risks of complications (see the appropriate sections of this guide in relation to the medical condition)
- visual disturbances.

Medical standards for all licence classes and/or endorsement types

While new anaesthetics have fewer side effects, health practitioners still need to advise against driving as follows:

- All surgery – where surgery for a condition impacts on an individual's ability to drive safely, refer to the appropriate sections of the guide.
- General anaesthetic – Individuals should not drive within 12 hours of a general anaesthetic. When patients are booked in for day surgery, they should be advised that they should not bring their car because they will be unable to drive home. Health practitioners should give this advice in writing to individuals, where possible.
- Local or regional anaesthetic – most use of local and regional anaesthetic is unlikely to impair an individual's ability to drive safely. However, an individual who has a local or regional anaesthetic should not drive if the anaesthetised region impairs motor or cognitive functioning or the individual's ability to control a vehicle, which could affect their ability to drive safely.

13. Helmet and safety belt exemptions

13.1 Safety belt exemptions

The use of safety belts and child restraints is compulsory in New Zealand. However, the law recognises that it is not always practicable for some individuals to wear a seatbelt for medical reasons, eg children with hip spica casts often cannot be restrained in a child restraint. Clause 7.11 of the Road User Rule 2004 authorises health practitioners to issue a certificate to the individual confirming it is impracticable or undesirable for medical reasons for the individual to be restrained by a child restraint or seat belt. However, this should only be done in exceptional circumstances, as there are few medical conditions that this applies to. It is important to recognise that granting an exemption from the use of safety belts places an individual's safety and that of other passengers at considerable risk in the event of a crash.

The table below lists the most common reasons why individuals ask for a safety belt exemption. The table also provides guidance on how health practitioners might respond.

Condition	Guidance
Ileostomies and colostomies	No exemptions should be granted as generally these do not interfere with the use of a correctly fitted safety belt.
Musculoskeletal conditions and deformities	Exemption may be necessary for passengers only, depending on the exact nature of the condition.
Obesity	No exemption should be granted. Individuals should be advised to get their safety belt modified. If this is not feasible, then an exemption may be granted.
Pregnancy	No exemption should be granted. Patient should be advised on correct fitting of safety belt.

13.2 Helmet exemptions

Health practitioners cannot approve exemptions from the requirement to wear a helmet (including motorcycle helmet or bicycle helmet). Only the Transport Agency can exempt a person from being required to wear a helmet if a medical condition makes the person unable to wear a helmet. Therefore, while health professionals can recommend to the Transport Agency that a person should be exempt from the helmet requirements, the Transport Agency makes the final decision. Health practitioners should write to the Chief Medical Adviser if they consider an individual should be exempt from the requirement to wear a helmet. Such requests are generally only granted in exceptional circumstances.

14. Temporary driving impairments

A number of the sections in this guide give advice relating to temporary driving impairments. This section covers those temporary driving impairments where an individual may need to refrain from driving for a short period, such as a few days, eg if an ankle injury prevents them using their clutch.

Health practitioners should advise patients when they should not drive for a few days or a few weeks. Practitioners can usually successfully negotiate short-term cessation of driving with patients.

Examples of short-term impairments include:

- locomotor function, eg a temporary injury to a limb that would make controlling a motor vehicle difficult
- vision – where an individual's vision may be temporarily impaired, such as the use of some topical medications
- motor coordination – where an individual has reduced motor coordination, eg multiple limb injuries
- concentration – where an individual is temporarily unable to concentrate, eg individuals in significant pain
- judgement – where an individual is not showing good judgement and this may impair their ability to drive safely, eg an individual is not taking medication as directed, and their judgement is impaired as a result.

Appendix 1: section 18 of the Land Transport Act 1998

Doctors and optometrists to give the Transport Agency medical reports of persons unfit to drive

1. This section applies if a registered health practitioner or registered optometrist, who has attended or been consulted in respect of a driver licence holder, considers that:
 - a. the mental or physical condition of the licence holder is such that, in the interests of public safety, the licence holder:
 - i. should not be permitted to drive motor vehicles of a specified class or classes, or
 - ii. should only be permitted to drive motor vehicles subject to such limitations as may be warranted by the mental or physical condition of the licence holder, and
 - b. the licence holder is likely to drive a motor vehicle.
2. If this section applies, the registered health practitioner or registered optometrist must as soon as practicable give the Transport Agency written notice of the opinion under subsection 1(a) and the grounds on which it is based.
3. A registered health practitioner or registered optometrist who gives a notice under subsection 2 in good faith is not liable to civil or professional liability because of any disclosure of personal medical information in that notice.
4. Nothing in section 32 or section 33 of the Evidence Amendment Act (No 2) 1980 applies to a notice given under this section.

Appendix 2: section 19 of the Land Transport Act 1998

Licences of certain persons subject to Mental Health (Compulsory Assessment and Treatment) Act 1992 to be suspended:

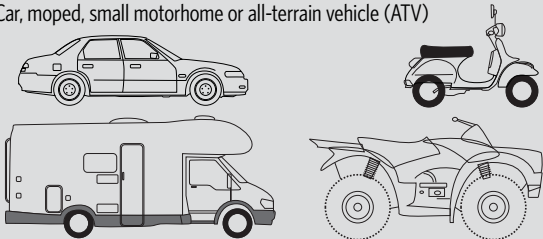
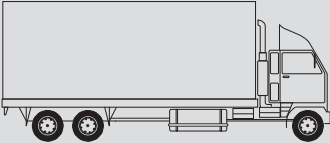
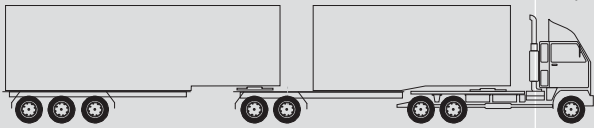
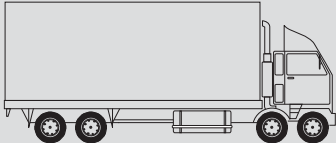
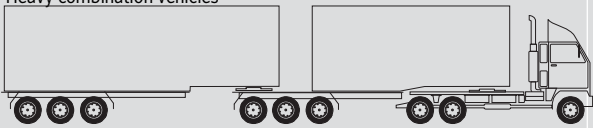
1. If a person who holds a driver licence becomes subject to a compulsory treatment order that is an inpatient order or becomes a special patient under the Mental Health (Compulsory Assessment and Treatment) Act 1992,;
 - a. the person in charge of the hospital to which the person is referred or at which the person is detained must notify the Transport Agency of the making of an inpatient order or that the person is a special patient (as the case may be), and
 - b. the licence is suspended while the holder is subject to an inpatient order or is a special patient.
2. A person who has possession of the driver licence of a person referred to in subsection (1) must, on the request of the person in charge of the hospital at which the holder is an inpatient, deliver the licence to the person in charge of the hospital; and the person in charge must forward the licence to the Director of Area Mental Health Services.
3. The Director of Area Mental Health Services must retain a driver licence received under this section until it ceases to be subject to this section, and then,;
 - a. in the case of a licence that applies to commercial vehicles, forward the licence to the Transport Agency, or
 - b. in any other case, return the licence to the holder or to the person in possession referred to in subsection (2).
4. If a person to whom this section applies ceases to be a person referred to in subsection (1) and his or her responsible clinician considers that person to be unfit to hold a driver licence, the responsible clinician must advise the Director of Area Mental Health Services of that opinion and that Director must give the Transport Agency a certificate to that effect and (if it is in his or her possession) return the licence to the Transport Agency; and the licence has no effect unless it is returned to the holder under subsection (5).
5. A person referred to in subsection (4) may apply to the Transport Agency for the return of his or her driver licence and the Transport Agency must return the licence if satisfied the holder is fit to drive.
6. If:
 - a. a person to whom subsection (1) applies is, under any of sections 31, 50, and 52 of the Mental Health (Compulsory Assessment and Treatment) Act 1992, permitted to be absent on leave from a hospital under that Act, and
 - b. a responsible clinician certifies in writing that, in the clinician's opinion, that person is fit to hold a driver licence,

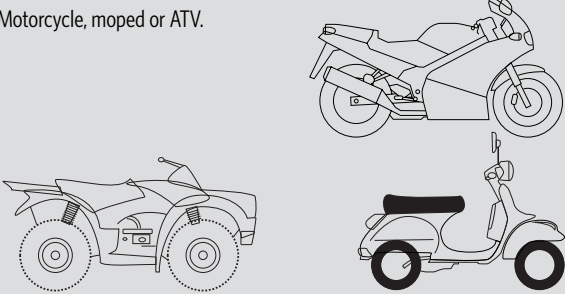
subsection (1)(b) does not apply to that person while that person is absent on leave from the hospital, and, if that person's driver licence is held by the Director of Area Mental Health Services, the licence must be returned to the holder.

7. In any case to which subsection (3)(a) applies, once the holder ceases to be subject to this section, the Transport Agency must, as soon as practicable after the Transport Agency is satisfied the holder is eligible to hold the licence, return the licence to the holder or to the person previously in possession referred to in subsection (2).

Appendix 3: licence classes and endorsement types

Table A. Licence classes

Licence class	Main types of motor vehicles covered by the licence class*	Normal requirement for medical examinations
Class 1	Car, moped, small motorhome or all-terrain vehicle (ATV) 	None if medically fit. 10-yearly if has medical condition.
Class 2	Medium rigid vehicles 	10-yearly
Class 3	Medium combination vehicles 	10-yearly
Class 4	Heavy rigid vehicles 	10-yearly
Class 5	Heavy combination vehicles 	10-yearly

Licence class	Main types of motor vehicles covered by the licence class*	Normal requirement for medical examinations
Class 6	Motorcycle, moped or ATV. 	None if medically fit. 10-yearly if has medical condition.

*For more information see NZ Transport Agency Factsheet 11: *Driver licence classes*.

Table B. Graduated driver licensing system licence phases

Identifying letter	Phase
L	Learner
R	Restricted
F	Full

Table C. Types of licence endorsement

Identifying letter	Endorsement*	Normal requirement for medical examination
P	Passenger endorsement (eg buses and taxis)	5-yearly
V	Vehicle recovery endorsement (eg tow trucks)	5-yearly
I	Driving instructor endorsement (will be followed by a class number to indicate the class of licence the endorsement is for)	5-yearly
O	Testing officer endorsement	5-yearly
D	Dangerous goods endorsement	None
F	Forklift endorsement for use with special-type vehicles that are forklifts	None
R	Rollers endorsement for use with special-type vehicles that run on rollers	None
T	Tracks endorsement for use with special-type vehicles that run on self-laying tracks	None
W	Wheels endorsement for use with special-type vehicles that run on wheels and are not forklifts	None

*For more information see NZ Transport Agency Factsheet 11: *Driver licence classes*.

Appendix 4: example letter for notification about an individual under section 18 of the Land Transport Act 1998

Date

NZ Transport Agency
C/- Chief Medical Adviser
Private Bag 11777
Palmerston North 4442

Attn. Chief Medical Adviser

Notification under section 18 of the Land Transport Act 1998

As per my obligations under section 18 of the Land Transport Act 1998, I am writing to advise that I have a patient whom I have advised not to drive, or to drive subject to certain conditions, and I do not consider that the patient is following this advice. The patient is therefore a risk to public safety by continuing to drive.

Patient details
Full name
Address
Postal address if applicable:
Date of birth

The background to my decision to notify the Transport Agency is [please include the condition the individual has, the potential impacts on road safety, and any other matters that provide a broad background to the decision to notify the Transport Agency, eg the patient says they will continue driving, has been seen driving or is generally non-compliant with medical advice]: [If appropriate, eg individual should have a specialist assessment] I consider that further assessment is necessary, and recommend that ...

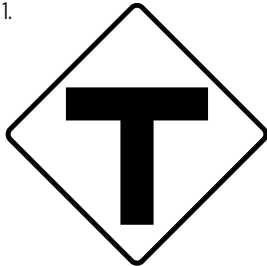
.....
Signed
Name and address
Phone number
Fax number

Appendix 5: road sign test

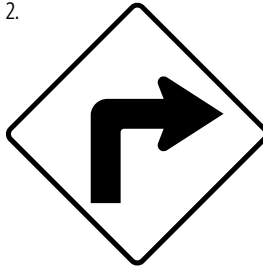
If you suspect a person may be showing signs of forgetfulness or memory loss, give them this simple test on common traffic signs. A person who has trouble with this test or takes a long time to answer may need further assessment.

What does this sign mean? What action should the driver take?

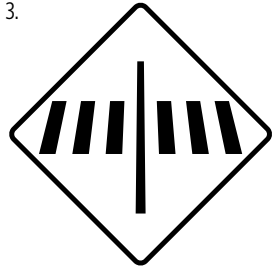
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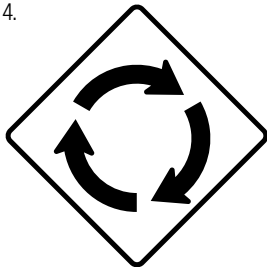
2.



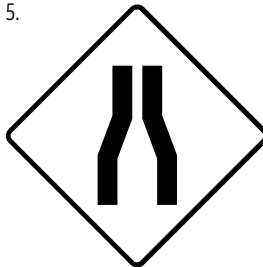
3.



4.



5.



6.



Suggested answers:

1. T intersection ahead: slow down, indicate a left or right turn and apply the give way rules.
2. Sharp bend ahead: slow down, keep left, do not cut the corner.
3. Pedestrian crossing ahead: slow down, look for pedestrians crossing on the road and stop if you have to.
4. Roundabout ahead: choose correct position for left/right turn or going straight through, slow down and apply the give way rules.
5. Road narrows: slow down, scan the road ahead for oncoming traffic and keep well to the left.
6. Railway level crossing ahead: slow down, look for trains and stop if you have to.

Appendix 6: example letter for notification under section 19 of the Land Transport Act 1998

Date

NZ Transport Agency
C/- Chief Medical Adviser
Private Bag 11777
Palmerston North 4442

Dear Chief Medical Adviser

Notification under section 19 of the Land Transport Act 1998

Patient details
Full name
Address
Postal address (if applicable).....
Date of birth
Driver licence number
Type of licence classes held (if known)

Pursuant to the obligations under section 19 of the Land Transport Act 1998, I am writing to advise that I have a patient who is:

New in-patient or special patient order
.....is subject to an inpatient order or becomes a special patient under the Mental Health (Compulsory Assessment and Treatment) Act 1992. This order commenced on and is expected to be reviewed on

Continuation sheet

Name

Driver licence number

Release from compulsory status or special leave action

..... is no longer subject to an inpatient order or a special patient under the Mental Health (Compulsory Assessment and treatment) Act 1992, as of.....

..... is on special leave for an extended period, commencing

and:

Where the patient is being released from compulsory status or will be on special leave:

I believe that the patient is:

fit to drive private classes of vehicles

unfit to drive private classes of vehicles because of and is anticipated to remain so until the next review date of

(Note: If this review confirms that he/she remains unfit to drive a private class vehicle, the next review date should be notified to the Chief Medical Adviser, Private Bag 11777, Palmerston North 4442.)

fit to drive commercial vehicles (In this case, please provide a full medical certificate as, under section 19 of the Land Transport Act 1998, an individual must apply to the Transport Agency for their commercial type licence or endorsement to be returned to them)

unfit to drive commercial vehicles, because of (If appropriate, please advise if you consider that the individual should have another assessment or when you consider that the situation should be reviewed.)

I consider that further assessment is necessary (or that a review of situation should occur).....

.....

Signed

Name and address

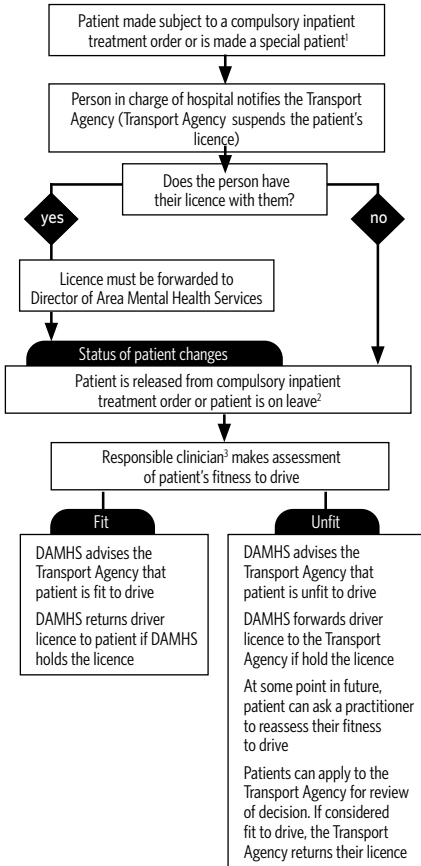
Phone number

Fax number

Appendix 7: processes in section 19 of the Land Transport Act 1998

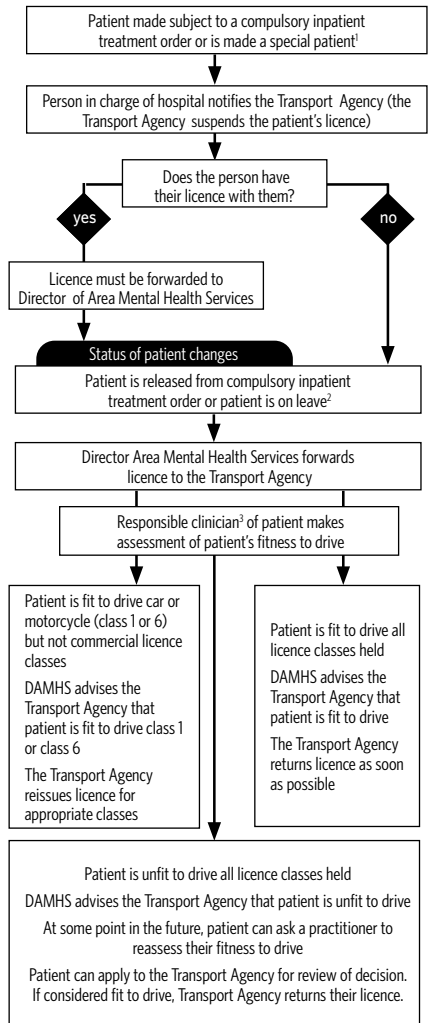
Actions and responsibilities

Section 19 for drivers with licence Classes 1 and 6 and/or D, F, R, T or W licence endorsements



Actions and responsibilities

Section 19 for drivers with licence Classes 2, 3, 4, 5 and/or P, V, I or O licence endorsements



1. Special patient as defined under the Mental Health (Compulsory Assessment and Treatment) Act 1992.
 2. Leave as outlined in section 31, 50 and 52 of the Mental Health (Compulsory Assessment and Treatment) Act 1992.
 3. Responsible clinician – same meaning as it has in section 2(1) of the Mental Health (Compulsory Assessment and Treatment) Act 1992.

Appendix 8: example letter advising patients that they are unfit to drive or fit to drive subject to certain limitations

Name
Address

Assessment of fitness to drive

It is my opinion as a medical practitioner that you, (patient's name),
.....are medically fit/unfit to drive the following classes
(list classes or endorsements)

(Where an individual should refrain from driving)

You should not drive for (list the period of time).....
I will then review the driving restriction.

(Where an individual may continue to drive but with limitations)

You are fit to drive if you follow the limitation listed below (eg no night driving
because of your vision):
.....

You are entitled to seek a second opinion of this assessment.

.....
Signed and dated

Appendix 9: exceptions to the requirement to use seat belts and child restraints.

Clauses 7.6 – 7.10 of the Land Transport (Road User) Rule 2004 set out the requirement for drivers and passengers to use child restraints and seat belts.

Clause 7.11 of that Rule sets out the exceptions to those requirements. Clause 7.11 is reprinted below. Subclauses (1) and (2A) will be of particular interest to health practitioners.

7.11 Exceptions to application of requirements relating to use of child restraints and seat belts

- (1) The requirements of clauses 7.7 to 7.10 do not apply to a driver (whether imposed in respect of himself or herself or any child), or to a passenger in any motor vehicle, if the driver or passenger produces to an enforcement officer, whenever required to do so by that officer, a certificate from a registered health practitioner certifying that the restraining of the person who would otherwise be required by those provisions to be restrained by a child restraint or seat belt is impracticable or undesirable for medical reasons.
- (2) A driver or passenger who is required to produce a certificate to an enforcement officer under subclause (1) has 7 days, after the day on which the requirement is imposed, to do so.
- (2A) If the certificate produced to the enforcement officer was issued on or after 1 October 2011,—
 - (a) the certificate must specify the date on which it was issued and its expiry date; and
 - (b) the expiry date must be on or after the day on which the certificate was required to be produced.
- (3) The requirements of clauses 7.7 to 7.10 do not apply to a driver (whether imposed in respect of himself or herself or any child), or to a passenger in any vehicle, if the person who would otherwise be required by those provisions to be restrained by a child restraint or seat belt—
 - (a) is the driver and, while complying with the requirements of those clauses, could not reasonably operate effectively any of the following items of equipment:
 - (i) footbrake or handbrake controls:

- (ii) headlamp or foglamp:
 - (iii) direction-indicator control:
 - (iv) horn:
 - (v) windscreen-wiper control:
 - (vi) choke:
 - (vii) driver's sun visor; or
- (b) is the driver and, while complying with the requirements of those clauses, could not reasonably operate effectively any of the following items of equipment:
- (c) is the driver of a taxi plying for hire; or
- (d) is a person who —
- (i) is engaged in the course of his or her employment in the delivery or collection of mail or newspapers or other goods, or the servicing of the vehicle, or meter reading or other similar duties, or spraying or other similar duties from the vehicle; and
 - (ii) for that purpose is required to alight from and re-enter the vehicle at frequent intervals, so long as the vehicle is travelling at a speed not exceeding 50 km per hour; or
- (e) is an enforcement officer or prison officer travelling with another person who is not an enforcement officer or prison officer in circumstances in which it is impracticable or undesirable to wear a seat belt.
- (4) Clauses 7.6, 7.7, 7.8, and 7.10 do not apply to the driver of a bus.
- (5) The requirements of clause 7.6 do not apply to a driver (whether imposed in respect of himself or herself or any child), or to a passenger in any vehicle, if the driver—
- (a) is driving a passenger service vehicle in which no appropriate child restraints are available; or
 - (b) is driving a goods vehicle having an unladen weight exceeding 2,000 kg in which no seat belts are available; or
 - (c) is driving a motor vehicle first registered before 1 January 1955 in which no seat belts are available; or
 - (d) is driving a motorcycle; or
 - (e) is driving a motor vehicle that is being used by an enforcement officer in the execution of the officer's duty.

Appendix 10: example certificate confirming use of child restraint or seat belt not required

Date

To whom it may concern
.....

Certificate confirming use of a seat belt/child restraint¹ is not required

Having regard to the NZ Transport Agency's *Medical aspects of fitness to drive* guidelines, I have assessed the individual named below, and certify that, in my opinion it is impracticable or undesirable for medical reasons for him/her¹ to be restrained by a seat belt/child restraint¹ for the duration of this certificate.

Full name
Date of birth
Address
Driver licence number²
Certificate expiry date³

.....
Signed
Name
NZMC number
Address and phone number (if not on pre-printed letterhead)

¹ Delete as applicable.
² Not required if the individual is unlicensed (eg a child).
³ When determining an expiry date, due regard should be given to the individual's medical condition and the likely recovery period (if any).

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