Assessing Fitness to Drive 2020-21 review

February 2022

Final Report

National Transport Commission

Report outline

Title	Assessing Fitness to Drive 2020-21 review
Type of report	Final report
Purpose	This report explains the updates made to *Assessing Fitness to Drive*, for approval at the Infrastructure and Transport Ministers Meeting February 2022.
Abstract	*Assessing Fitness to Drive – Commercial and Private Vehicle Drivers* contains the nationally agreed medical standards for the purposes of driver licensing. The NTC has reviewed *Assessing Fitness to Drive* to: address issues raised by stakeholders; ensure the standards reflect medical evidence and best practice; and meet the practical needs for licensing private and commercial vehicle drivers.
Attribution	This work should be attributed as follows, Source: National Transport Commission, *Assessing Fitness to Drive 2020-21 review: Final report*, NTC Melbourne. If you have adapted, modified or transformed this work in anyway, please use the following, Source: based on National Transport Commission, *Assessing Fitness to Drive 2020-21 review: Final report*, NTC, Melbourne.
Key words	Medical standards, assessing fitness to drive, driver licensing, review of Transport Medical Standards
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Executive summary

Assessing Fitness to Drive – Commercial and Private Vehicle Drivers is a joint publication of Austroads and the National Transport Commission (NTC). It contains nationally agreed medical standards for the purposes of driver licensing. The NTC has reviewed Assessing Fitness to Drive to: address issues raised by stakeholders; ensure the standards reflect current medical evidence and best practice; and meet the practical needs of private and commercial vehicle drivers. The review also considered the application and clarity of the guidelines, along with associated administrative issues.

This report was developed to explain the changes to the Assessing Fitness to Drive guidelines. It covers general issues, followed by a chapter-by-chapter description of medical changes, then changes made to the appendices. The last section addresses issues that are out of scope. This report should be read in conjunction with the revised Assessing Fitness to Drive publication.

The NTC undertook consultation rounds in September 2020 and May 2021 requesting stakeholder feedback on the 2016 version of Assessing Fitness to Drive and the proposed 2022 update, respectively. We received valuable feedback from a wide range of stakeholders including medical practitioners and other health professionals, consumer health organisations, government transport departments, driver licensing authorities, operators and peak industry bodies. All up we received over 70 submissions raising ~600 matters that were considered in developing the revised guidelines. Further input was sought from various medical and allied health experts and transport stakeholders. Findings of accident investigations and recent research were also considered.

Changes in the review are limited to advancements that reflect scientific and medical consensus in managing safety risk for conditions, enhancing clarity and interpretation, to support consistent implementation. The implication for all stakeholders, including health professionals, driver licensing authorities, and drivers, will be consistency in patient/driver management. Major changes to the medical standards are detailed in Table 1.

During our consultation, stakeholders commented on a range of matters outside the project scope although still relevant to Assessing Fitness to Drive. These were predominantly administrative issues and suggestions on where the standards could apply, including in employment settings. In response to these, the exploration of future work, outside the current revision of Assessing Fitness to Drive, is under consideration.

Table 1. Summary of changes to medical criteria

Chapter	Criteria change (yes/no)	Detail of change to criteria (tables only)
Blackout	No	
Cardiovascular conditions	Yes	***Implantable cardioverter defibrillator*** Conditional licensing criteria are provided for commercial medical standards, reflecting new evidence on the risk profile of these devices. ***Biventricular assist devices (BiVADs)*** New criteria have been developed for BiVADs. A conditional licence may be considered for a private driver requiring a BiVAD subject to meeting several criteria. Ventricular assist devices of any type are not acceptable for commercial vehicle driving. ***Congenital disorders*** Updated criteria for assessment of surgical treatments for congenital disorders and associated non-driving periods for recovery. Addition of exclusion criteria in the private standards for people with uncomplicated congenital disorders.
Diabetes mellitus	No	
Hearing loss and deafness	No	
Musculoskeletal conditions	Yes	***Considering conditional licensing*** Medication effects and condition stability are emphasised as factors the health practitioner may consider in their assessment.
Neurological conditions – dementia	Yes	***Guidance for preclinical and prodromal dementia/mild cognitive impairment*** A note included in the medical standards that excludes pre-clinical and prodromal dementia unless there are clinically significant symptoms.
Neurological conditions – seizures and epilepsy	Yes	***When EEG is required*** For the relevant commercial medical standards, it has been emphasised that EEG demonstrating no epileptiform activity is only required on initial granting of the conditional licence and not for the ongoing periodic review. ***Resumption of unconditional licence after first seizure and acute symptomatic seizures*** Assessment criteria and shorter timeframes for resumption of driving on an unconditional licence have been added to these private and commercial medical standards. ***Description of 'safe' seizures*** Explanatory text has been added to describe a type of seizure that can be managed to the 'safe' seizure medical standard. ***Assessment of provoking factors*** A clarification is included detailing that sleep deprivation should not be considered a provoking factor in the private standards for seizure in a person whose epilepsy was previously well controlled. ***Criteria for unreliable or doubtful clinical information*** Assessment criteria have been included for private and commercial medical standards for circumstances where the clinical information is unreliable or doubtful. A conditional licence should not be considered

Chapter	Criteria change (yes/no)	Detail of change to criteria (tables only)
		when the person provides unreliable or doubtful clinical information. ***Clarifications on medication withdrawal or changes in dosage*** A note has been added to explain the circumstances for applying the planned withdrawal of one or more antiepileptic medication standards. A clarification is included to help assess changes in medication dosage due to temporary situations. ***Applying the seizure and reduction criteria*** Direction has been provided for applying the standards when multiple criteria for reductions are present, including the exceptional and resumption on unconditional licensing criteria.
Other neurological and neurodevelopmental conditions	Yes	***Stroke*** Private vehicle drivers are not required to have an assessment after the four-week nondriving period if assessed as being fit to drive when discharged from care. Clearer licensing criteria for situations when a person may require a conditional licence after a stroke. ***Subarachnoid haemorrhage*** Exclusions from licensing restrictions for certain types of low-risk non-aneurysmal subarachnoid haemorrhage.
Psychiatric conditions	Yes	***Periodic review by a health practitioner*** Periodic reviews performed by a person's general practitioner may be considered under the commercial standards. The psychiatrist must perform the initial assessment, and all must agree to the arrangement. ***Psychogenic non-epileptic seizures (PNES)*** Medical standards have been included to assess people whose seizures are diagnosed as psychogenic (pseudo-seizures). The medical standards include details on seizure free periods, criteria to consider conditional licensing, and a description of the treating specialists.
Sleep disorders	No	
Substance misuse	Yes	***Periodic review by a health practitioner*** Periodic reviews performed by a person's general practitioner may be considered under the commercial standards. The specialist must perform the initial assessment, and all must agree to the arrangement.
Vision and eye disorders	Yes	***Diplopia*** Clarification on the criteria for experiencing diplopia within central fixation. ***Monocular vision and commercial licensing*** Minimum visual standards for commercial monocular driving are set.

1 Introduction

The *Assessing Fitness to Drive* medical standards and guidelines are produced by the National Transport Commission (NTC) and Austroads. The guidelines' primary purpose is to increase road safety in Australia by helping health professionals to:

- assess the fitness of their patients to drive
- promote responsible behaviour of their patients with respect to their health and driving
- conduct medical examinations for licensing of drivers as required by driver licensing authorities
- provide information to inform conditional licence decisions.

The guidelines also aim to provide guidance to licensing authorities in making licensing decisions.

Assessing Fitness to Drive was last published in March 2016, with minor corrections in 2017. Since the last publication there have been medical, legal and social developments that may require changes to the medical standards to ensure they are accurate and reflect current practices. As part of the review of *Assessing Fitness to Drive* the NTC asked relevant stakeholders to identify issues and provide feedback on whether the guidelines are meeting their intended purpose.

1.1 The report

This report explains the changes to *Assessing Fitness to Drive* from the last published version in 2016 (and amended in 2017), incorporating changes made in response to consultations in November 2020 and May 2021. This is done through a discussion of general issues, followed by a chapter-by-chapter description of medical changes, then changes made to the appendices. The last section addresses out-of-scope issues that have been raised in the course of the review.

This report is written to be read in conjunction with the guidelines.

1.2 Assessing Fitness to Drive

Assessing Fitness to Drive contains medical standards for the purposes of driver licensing. It aims to improve road safety in Australia by addressing the impact of drivers' health on their ability to drive. Private and commercial vehicle drivers must meet certain medical standards to ensure their health status does not increase the risk of a crash in which they or other road users may be killed or injured.

The standards comprise two main parts. Part A provides general guidance to health professionals in assessing their patients' fitness to drive. Part B sets out the medical standards for specific health areas.

Medical professionals should use these standards to provide advice to patients who drive cars, heavy vehicles, vans, motorcycles and public passenger vehicles. It is the responsibility of the driver to notify their relevant driver licensing authority of any relevant medical issues; however, in some instances medical professionals will have direct contact with driver licensing authorities. These standards are also used by all driver licensing authorities in making decisions about driver licensing.

1.3 This review of Assessing Fitness to Drive

Since 2016, when *Assessing Fitness to Drive* was last fully reviewed, there have been medical advances, and users have gained valuable practical experience in applying the standards. The objective of this project was to review the medical standards contained in *Assessing Fitness to Drive* to ensure they reflect medical best practice and meet the practical needs of private and commercial vehicle drivers. This will continue to improve road safety outcomes through ensuring that drivers are medically fit to drive safely.

The scope of the review included a review of the introductory content (Part A) and the medical chapters/criteria (Part B) to ensure currency and accuracy. In conducting the review, the NTC considered:

- advances in medical knowledge
- new issues affecting medical standards for drivers
- changes to the driving environment and policies
- stakeholder feedback on the operation of the current standards and guidelines
- findings of recent coronial and other inquiries
- corrections needed to any of the text where mistakes were identified, or where information was out of date (and required updating).

The project involved a review and amendment of the medical standards only; however, it did not involve new research into gaps in knowledge about medical conditions. It also did not review the regulatory and administrative arrangements relating to the application of the standards. This includes:

- the issue of mandatory reporting by doctors to the driver licensing authority when patients have certain conditions
- variations between jurisdictions, particularly with implementation criteria
- any significant shifts in the application of the medical standards.

1.4 Project methodology – overview

The review aimed to develop updated endorsed medical standards and supporting guidelines for Ministerial Council approval. This has involved the following main tasks:

- undertaking consultation with all relevant stakeholders
- contracting consultants to undertake specialist tasks and provide expert advice on medical advances
- undertaking an environmental scan to ensure all coronial or other inquiry recommendations have been identified
- seeking advice from the regulating jurisdictions and other stakeholders about the particular issues needing attention
- bringing together a range of targeted stakeholders in the project advisory group (including medical professionals, driver licensing authorities and peak industry bodies) to obtain overarching advice for the review
- analysing responses and liaising with medical and other stakeholder groups, including setting up working groups to secure adequate input
- seeking advice from the Office of Best Practice Regulation regarding regulatory impact statement requirements
- preparing drafts of the revised documents

- circulating drafts of the revised documents for comment
- seeking endorsement from various medical societies
- seeking endorsement from the Infrastructure and Transport Senior Officials' Committee
- sending final documents and approved regulatory impact statement (if required) to the Infrastructure and Transport Ministers Meeting for approval.

Based on these requirements, the project has occurred in six phases as described below and as shown in Figure 1.

Phase 1: Project preparation (August 2020)

This phase was the sole responsibility of the NTC and involved developing a:

- project plan
- stakeholder consultation and engagement plan
- governance plan.

Phase 2: Issue identification (September 2020 – November 2020)

This phase is complete and was undertaken by the NTC. It involved:

- a targeted stakeholder consultation via a survey to identify issues with the guidelines and appropriate changes to the medical standards. Stakeholder groups included:
  - licensing and registration agencies
  - medical expert institutions
  - medical specialist organisations
  - patient/public health groups
  - industry associations
- reviewing relevant reports including coronial reports
- establishing the project advisory group
- compiling a log describing the issues, whether they were considered within the scope of the review and proposed processes for resolution
- engaging medical specialists for issue review
- developing a project plan for addressing the submitted issues
- reviewing these outputs (issues log and project plan) by the project advisory group.

Phase 3: Issues resolution and revisions to the standard (December 2020 – April 2021)

This phase is complete. It was undertaken by the NTC and involved:

- liaison with experts (including medical colleges) and other stakeholders based on the issues identified and the project plan
- preparation of a definitive issues log including proposed resolutions
- advice from the Office of Best Practice Regulation about regulatory impact statement requirements
- a discussion report describing the proposed changes and the rationale, as a basis for public consultation
- draft revisions to *Assessing Fitness to Drive*
- a review of the outputs (issues log, discussion report and draft standards) by the advisory group.

Phase 4: Public consultation and content finalisation

This phase is complete. It was undertaken by the NTC and involved:

- public consultation regarding the discussion paper and draft standards
- response to public consultation including updating the issues log, discussion paper and draft standard as required
- reviewing these outputs (issues log, discussion paper and draft standard) by the project advisory group

Phase 5: Approval

This phase is complete. It was undertaken by the NTC and involved:

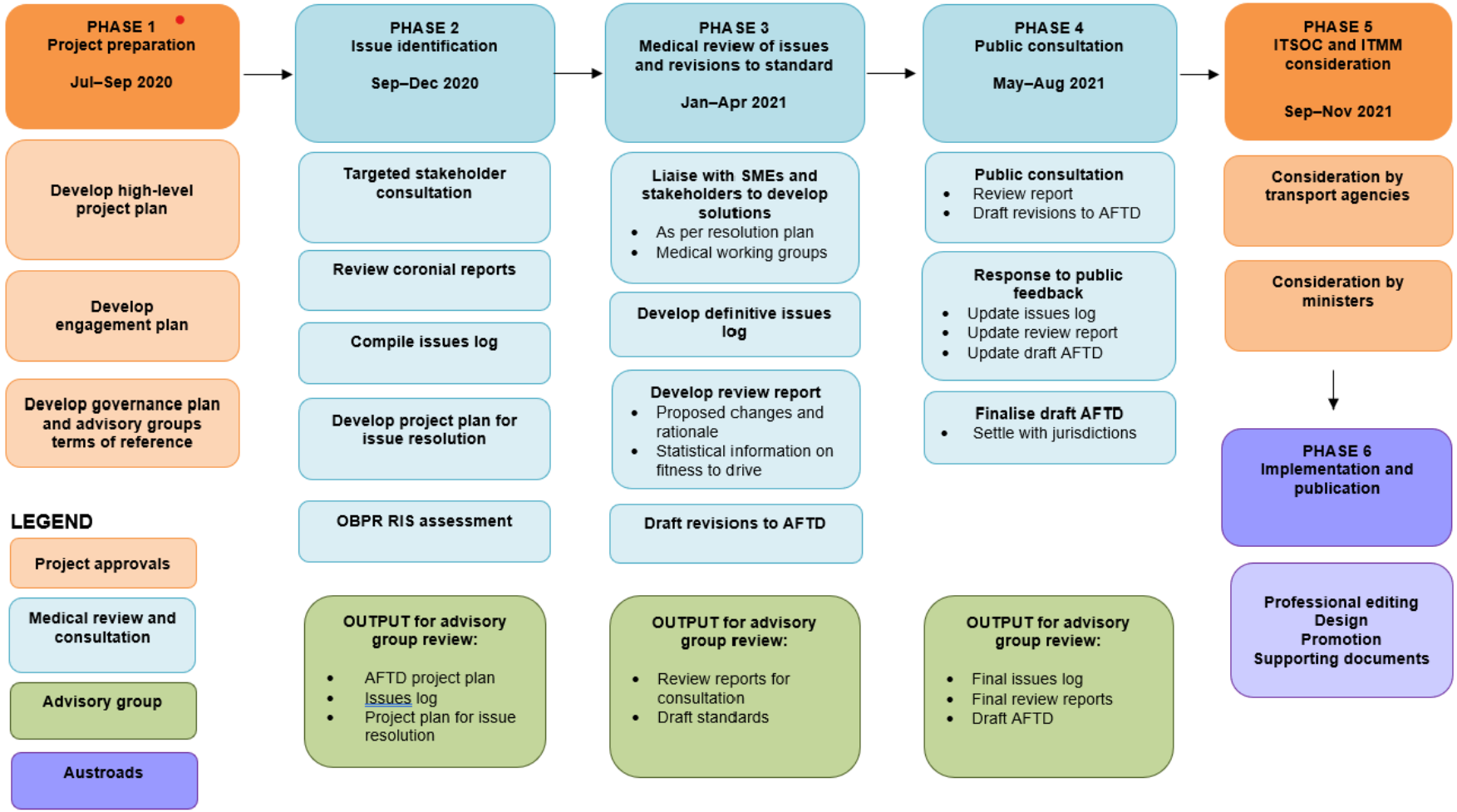
- endorsement from the Infrastructure and Transport Senior Officials' Committee
- approval from the Infrastructure and Transport Ministers Meeting.

Phase 6: Publication

This phase is active. It is overseen NTC and Austroads and involves:

- editing
- design
- distribution
- promotion.

Figure 1. Phases and outputs of the project



2 Part A and general issues

2.1 Introduction to Part A and general issues raised

This section describes the feedback and changes to Part A of the guidelines as well as general issues relating to the publication overall. Part A provides general guidance to health professionals in assessing their patients' fitness to drive.

2.2 Inputs from stakeholders

A number of stakeholders provided submissions addressing this section (refer to Box 1). The majority of feedback on Part A related to providing clarity of existing information, editorial matters and updating information that was out of date. Stakeholders also commented on the issue of access to specialists and practical driver assessments.

Some issues raised were deemed to be out of scope, and these are discussed in section 5.

Box 1. Stakeholders that commented on Part A issues

Stakeholder submissions
Driver licensing authorities and transport regulators • Access Canberra • Department of Transport (Vic) • Department of Transport (WA) • Department of Transport and Main Roads (Qld) • National Heavy Vehicle Regulator • Transport for NSW
Medical/health professional stakeholders • Australian and New Zealand Association of Neurologists • Australian and New Zealand College of Anaesthetists • Australian and New Zealand Society of Occupational Medicine • Australian College of Nurse Practitioners • Australian Medical Association • Australian Medical Association (SA) • Epilepsy Society of Australia • Occupational Therapy Australia • Orthoptics Australia • Royal Australasian College of Physicians • Royal Australian and New Zealand College of Psychiatrists • Royal College of Pathologists of Australasia • Rural Doctors Association of Australia • Victorian Institute of Forensic Medicine
Driver/patient/carer stakeholders • Bicycles NSW • Dementia Australia • Drive Change • Epilepsy Action Australia • Medical Cannabis Users Association of Australia • MS Australia • National Inclusive Transport Advocacy Network • Royal Automobile Association • Royal Automobile Club of Tasmania
Industry stakeholders • Bus Industry Confederation • Gas Energy Australia • Livestock Bulk and Rural Carriers Association • MIGA • National Inclusive Transport Advocacy Network • NatRoad

2.3 Issues and recommended changes

The following section provides a summary of the key changes made to Part A in response to stakeholder feedback.

2.3.1 Evidence base

Part A has been updated to refer to the Monash University Accident Research Centre (MUARC) report *Influence of chronic Illness on crash involvement of motor vehicle drivers: 3rd edition.* This report was a key input to the *Assessing Fitness to Drive* guideline update.

2.3.2 The driving task and general guidance for a fitness-to-drive assessment, multiple medical conditions, and age-related change

Influence of chronic Illness on crash involvement of motor vehicle drivers: 3rd edition has provided additional research evidence about motor vehicle crash (MVC) risk in relation to the interaction of multiple medical conditions. Therefore, section 2.2.9 has been updated to reflect this new information.

The guidance for age-related change has been expanded and separated into its own section (section 2.2.8 Older drivers and age-related changes). The section highlights the an active management approach for older drivers and provides further information for assessment and areas of most concern. Reference has been included to existing Royal Australian College of General Practitioners clinical guidelines for managing the health of older people, which includes information on early detection activities that may assist in evaluating sensory, cognition and motor function. Other dedicated resources that may assist in the holistic evaluation of older drivers are referenced.

In addition, the ‘general principles’ for assessing patients with multiple medical conditions has been moved into a new section (section 2.2.1 Assessing medical conditions and driving) and are provided as general principles for conducting the fitness-to-drive assessment. This change ensures the general principles are more prominent within the document.

Further, to improve readability, separate headings have been included to clearly distinguish between the text relevant to ‘multiple medical conditions’ and ‘age-related change’.

2.3.3 Examples of managing temporary conditions

A stakeholder requested that ‘sedation’ be added to the anaesthesia example in Table 1. This section was updated as requested to include sedation as a potential impact on driving and the associated management guidelines.

Table 1 was also updated to include new drugs/medication regimens or undergoing some treatments (e.g. radiation therapy) as another example of a temporary condition that may require a period of abstinence from driving.

2.3.4 Disability and driving

Feedback was received from several stakeholders that the 2016 *Assessing Fitness to Drive* guidelines do not adequately describe the impact of a disability on fitness to drive or the available services to assist this cohort.

In response to this feedback, section 2.2.7 has been expanded from 'Congenital conditions' to 'Congenital conditions, disability and driving'. The amended section aims to clarify that the capacity to perform the driving task may be impacted by the presence of a disability, and describes the associated action required by health professionals to assess disabilities. This section also includes a summary of the role of the NDIS in relation to *Assessing Fitness to Drive* and support services and provides a link to further information.

These changes aim to address concerns raised by stakeholders that *Assessing Fitness to Drive* does not provide enough information about fitness to drive for conditions other than a medical or chronic illness.

2.3.5 Medicinal cannabis

The guidance for medicinal cannabis is included in section 2.2.9 Drugs and driving. A working group was established to consider the content required to assist medical professionals and driver licensing authorities understand the implications of prescription medicinal cannabis use on the driving task and to provide suitable guidance to manage road safety risks. The working group members were:

Name	Organisation
Shruti Navathe	Access Canberra
David Sutton	Department for Infrastructure and Transport (SA)
Scott Swain	Department for Infrastructure and Transport (SA)
Sharon Wishart	Department of Transport (Vic)
Tim Umbers	Department of Transport (Vic)
Amie Buisman	Department of Transport (WA)
Sussan Osmond	Department of Transport and Main Roads (Qld)
Prof. Iain McGregor	Lambert Initiative for Cannabinoid Therapeutics, The University of Sydney
Dr Tamara Nation	National Institute of Integrative Medicine
Dr Jeff Potter	National Transport Commission
Jonathan Davey	National Transport Commission
Mandi Mees (Chair)	National Transport Commission
Tim Davern	National Transport Commission
A/Prof. Vicki Kotsirilos	NICM, University of Western Sydney
Adelaide Jones	Office of Road Safety (Commonwealth)
Prof. Yvonne Bonomo	St Vincent's Hospital Melbourne, The University of Melbourne
Prof. Edward Ogden	St Vincent's Hospital Melbourne, Swinburne University
Sally Millward	Transport for NSW (NSW)
Dr Sanjeev Gaya	Victorian Institute of Forensic Medicine

The working group considered the available evidence, medical practice and policy settings against key areas to develop this content. A major outcome from the Working Group was that medicinal cannabis can be managed similarly to other prescription medications that can impair driving but requires more detailed guidance. As such, the guidance aligns with the guidance for other prescription medications that have sedative and impairing effects. These types of medications can impact driving and the degree of impairment and effects on driving should be managed through proper prescription adherence and the existing fitness to drive assessment process. Information on drug driving laws, the implications for prescribing medicinal cannabis and driving, and other point of prescription advice is provided.

We received a number of submissions supporting the new medicinal cannabis guidance. A submission highlighted that Tasmanian legislation provides a medical defence to presence restrictions for THC (not impairment). This has been corrected in the section in accordance with the guidance provided by the Tasmanian Department of Health (**http://www.dhhs.tas.gov.au/psbtas/medicinal_cannabis/information_for_patients_carers**).

A submission requested that medical use of THC be excluded from the presence restrictions in state and territory drug driving laws. Changes to the laws on THC presence are out of scope for this review. Drug driving laws and policies are established through state and territory legislation and overseen by these respective governments. This review, and AFTD in general, has no power to modify these laws or trigger their review.

2.3.6 Key roles and responsibilities with respect to fitness to drive

Additional information has been included in *Table 2: Key roles and responsibilities with respect to fitness to drive* to clarify the obligations of drivers, health professionals and driver licensing authorities. Changes have also been made to Table 2 to include a specific reference to *disability* and *treatments.* This aims to ensure a disability is considered independently to a medical condition.

Figure 2: *The relationships and interactions between the driver licensing authority, health professional and vehicle driver* has been updated to clarify that health professionals should advise patients if a medical condition, treatment or drink/drug driving behaviours impact on their ability to drive safely, whether in the short or long term. Information has also been included to clarify appropriate communication between health professionals and driver licensing authorities in the event of a health professional becoming aware of unreliable information provided by the driver.

2.3.7 Role of the specialist

This section has been updated to direct treating specialists to share their fitness-to-drive assessment outcomes with the patient's general practitioner. This is in recognition of the important role general practitioners have in healthcare coordination and monitoring of long-term health conditions as well as potential road safety and public health implications.

Specific reference has also been included to reflect that Fellows of the Australian College of Rural and Remote Medicine also have specialist status.

Furthermore, *Box 2: Telehealth* has been updated to reflect the recent changes to telehealth services.

2.3.8 Considerations for commercial vehicle licensing

Information has been added in *Table 3: Choice of standard according to vehicle/licence type* to provide clarity around which standards apply to emergency service or first responder vehicle drivers including ambulance, fire and police.

2.3.9 Assessment and reporting process

Various updates were made to this section to improve awareness of the electronic assessment forms that health professionals can use in some states and territories.

2.4 Implications

Changes to Part A are expected to improve the application of *Assessing Fitness to Drive* by driver licensing authorities and health professionals.

3 Part B (medical standards)

3.1 Introduction to proposed Part B changes

This section summarises the changes made to each of the medical standards in *Assessing Fitness to Drive*.

Each chapter describes the inputs received through stakeholder consultation, including formal submissions and ongoing consultation with relevant experts. The focus of this section is on inputs relating to the medical standards. Where relevant, reference is made to the changes resulting from the 2012 or 2016 review to provide context. A proportion of stakeholder feedback related to clarity and minor editorial matters were actioned but are not discussed in these sections. Updates and additional materials related to the evidence for the impact of a condition on driving and evidence of road safety risk have been incorporated into chapters and referenced in these chapters.

3.2 Blackouts

3.2.1 Inputs

Submissions were received from a number of stakeholders (refer to the list below). The review process involved ongoing formal consultation with the Epilepsy Society of Australia and the Australian and New Zealand Association of Neurologists via its representative Prof. Ernest Somerville.

Stakeholder submissions
Driver licensing authorities and transport regulators • Transport for NSW • Department of Transport (Vic)
Medical/health professional stakeholders • Australian and New Zealand Association of Neurologists • Epilepsy Society of Australia

3.2.2 Issues and recommendations

Blackouts of undetermined nature that cause a motor vehicle crash

Submissions were received to consider applying restrictions for blackouts of undetermined nature that cause an MVC. The proposed change would align these standards with those for seizures that cause an MVC. This change would enforce that a blackout causing a crash will have a 12-month and 10-year non-driving period for private and commercial standards, respectively. The advisory group noted that there would be significant issues in practically applying this restriction due to the uncertainty surrounding the aetiology of these blackouts and challenges with accurately determining the occurrence and sequencing of the blackout and MVC. There has been no change.

The requests to highlight the non-driving periods in the standards table were addressed.

3.2.3 Implications for stakeholders

Driver licensing authorities

There are no major changes to this section.

Health professionals

There are no major changes to this section.

Drivers

There are no major changes to this section.

3.2.4 Medical standards for licensing – syncope/blackouts (revised 2022)

PRIVATE		COMMERCIAL	
2016	**Revised 2022**	**2016**	**Revised 2022**
Blackouts A person is **not** fit to hold an **unconditional licence**: • if the person has experienced blackouts that cannot be diagnosed as syncope, seizure or another condition. If there has been a **single blackout** or more than one blackout within a 24-hour period, a **conditional licence** may be considered by the driver licensing authority subject to at least **annual review**, taking into account information provided by the **treating doctor** as to whether the following criterion is met: • there have been no further blackouts for at least **six months**. If there have been **two or more blackouts** separated by at least 24 hours, a **conditional licence** may he considered by the driver licensing authority subject to at least **annual review**, taking into account information provided by the **treating doctor** as to whether the following criterion is met: • there have been no further blackouts for at least **12 months.**	No change	**Blackouts** A person is **not** fit to hold an **unconditional licence**: • if the person has experienced blackouts that cannot be diagnosed as syncope, seizure or another condition. If there has been a **single blackout** or more than one blackout within a 24-hour period, a **conditional licence** may be considered by the driver licensing authority subject to at least **annual review**, taking into account information provided by an **appropriate specialist** as to whether the following criterion is met: • there have been no further blackouts for at least **five years**. If there have been **two or more blackouts** separated by at least 24 hours, a **conditional licence** may be considered by the driver licensing authority subject to at least **annual review**, taking into account information provided by an **appropriate specialist** as to whether the following criterion is met: • there have been no further blackouts for at least **10 years**.	No change

PRIVATE		COMMERCIAL	
2016	**Revised 2022**	**2016**	**Revised 2022**
Exceptional cases Where a person with one or more blackouts of undetermined mechanism does not meet the standards above for a conditional licence but may, in the opinion of the treating specialist, be safe to drive, a **conditional licence** may be considered by the driver licensing authority, subject to at least **annual review**: • if the driver licensing authority, after considering information provided by the **treating specialist/s**, considers that the risk of a crash caused by a blackout is acceptably low.	No change.	**Exceptional cases** Where a person with one or more blackouts of undetermined mechanism does not meet the standards above for a **conditional licence** but may, in the opinion of the treating specialist, be safe to drive, a **conditional licence** may be considered by the driver licensing authority, subject to at least **annual review**: • if the driver licensing authority, after considering information provided by the **treating specialist/s**, considers that the risk of a crash caused by a blackout is acceptably low.	No change.

3.3 Cardiovascular conditions

3.3.1 Inputs and review

Submissions were received from a number of stakeholders (refer to the list below). The review process involved ongoing formal consultation with the Cardiac Society of Australia and New Zealand via its representative, Dr Ken Hossack.

Stakeholder submissions
Driver licensing authorities and transport regulators • Department for Infrastructure and Transport (SA) • Department of Transport (Vic) • Transport for NSW
Medical/health professional stakeholders • Australian and New Zealand Society of Occupational Medicine • Royal Australasian College of Physicians • Victorian Institute of Forensic Medicine
Industry stakeholders • Australian Trucking Association • NatRoad

3.3.2 Issues and recommendations

Implantable cardioverter defibrillators (ICD)

During previous reviews, submissions were received proposing to relax the standard regarding ICDs, which did not allow their use in commercial vehicle drivers. In particular it was identified that ICDs may be inserted for prophylaxis rather than to treat a diagnosed arrhythmia. During both reviews it was determined that the restriction should remain because the incidence of ICD discharge and risk for the driver to lose control of the vehicle was considered unacceptably high.

Further submissions were received in the current review, noting advances in device technology and medical care. Licensing criteria were requested to identify and manage drivers with a lower risk profile treated for prophylaxis who could be considered as an exceptional circumstance. Medical specialist advice confirmed that the restriction should remain for treatment of arrhythmia. Recent studies suggest lower rates of shock frequency and syncope in patients where ICD is used for prophylaxis. Criteria for conditional licensing are set, reflecting this evidence and incorporate patient- and condition-specific factors. The criteria considers the driving task, non-driving and review periods, incidence of device discharge or pacing, and several clinical features.

Ventricular assisted devices (VAD)

During the previous review, licensing standards were included for private drivers with left VAD. Drivers with a combined LVAD/RVAD (BiVAD) or an artificial heart, and commercial drivers requiring any type of these devices, were not fit to drive due to concerns about device failure and loss of vehicle control.

Further submissions have been received seeking an expansion of standards for conditional licences to include BiVAD. The submissions noted outcomes reported from the four hospitals in Australia implanting VADS and international experience concluding that driving with an LVAD is safe. Medical specialist advice supported this submission. Patients with BiVADs cannot be considered at significantly higher risk than those with LVADs, noting the unlikelihood of both devices simultaneously failing. Criteria are included for BiVADs under the private medical standards for consideration of a conditional licence. Commercial drivers requiring these devices are not fit to drive. Appropriate text and criteria have been added.

Congenital disorders

Submissions were received requesting the licensing criteria be updated to reflect the current standards of medical care for congenital disorders. Based on medical specialist advice, updated criteria are provided including assessment of surgical treatment and exclusions under the private standards for people with uncomplicated disorders. Non-driving periods are outlined, and further guidance is detailed in a new section - 2.2.12. Congenital disorders.

We received a submission in the public consultation round recommending changes to the private and commercial licensing standards such that only people with complex cyanotic congenital heart disorders be required to hold a conditional licence. This recommendation will be considered in the next AFTD review.

Paroxysmal arrythmias

A submission was received requesting consideration of mandated non-driving period for paroxysmal arrythmias under the private standards. Medical specialist advice noted that the current standards are appropriate, and a non-driving period is not required. No changes are made.

Other edits

On advice from the medical specialist, some of the condition examples were expanded for clarification.

3.3.3 Implications for stakeholders

Driver licensing authorities

The conditional licensing criteria for ICDs will assist driver licensing authorities in considering these cases and support a consistent implementation of the standards. The expansion of the criteria for BiVADs will have little impact on the work of driver licensing authorities. Other changes are minor and will have no impact on implementation.

Health professionals

The changes to criteria for ICDs will give health professionals clear criteria for assessing and managing their patients. The expanded criteria for BiVADs provide clarity for health professionals managing this small group of patients. Other changes are minor and will have no impact on implementation.

Drivers

The changes to the criteria for ICDs will enable a small number of patients to continue driving and provide clarity and greater certainty for how their conditions will be assessed. The new criteria for BiVADs provide clarity for this group of patients. Other changes are minor and will have no impact on implementation.

3.3.4 Medical standards for licensing – cardiovascular diseases (revised 2022)

PRIVATE		COMMERCIAL	
2016	**Revised 2022**	**2016**	**Revised 2022**
Acute myocardial infarction (AMI) **The person should not drive for at least two weeks after an AMI.** A person is **not** fit to hold an **unconditional licence**: • if the person has had an AMI. A **conditional licence** may be considered by the driver licensing authority subject to **periodic review,** taking into account the nature of the driving task and information provided by the **treating doctor** as to whether the following criteria are met: • it is at least two weeks after an uncomplicated AMI; **and** • there is a satisfactory response to treatment; **and** • there are minimal symptoms relevant to driving (chest pain, palpitations, breathlessness). Fitness thereafter should be assessed in terms of general convalescence.	**Acute myocardial infarction (AMI)** No change.	**Acute myocardial infarction (AMI)** **The person should not drive for at least four weeks after an AMI.** A person is **not** fit to hold an **unconditional licence**: • if the person has had an AMI. A **conditional licence** may be considered by the driver licensing authority subject to **annual review**, taking into account the nature of the driving task and information provided by the **treating specialist** as to whether the following criteria are met: • it is at least four weeks after an uncomplicated AMI; **and** • there is a satisfactory response to treatment; **and** • there is an exercise tolerance of ≥ 90% of the age/sex predicted exercise capacity according to the Bruce protocol or equivalent functional exercise test protocol; **and** • there is no evidence of severe ischaemia, i.e. less than 2 mm ST segment depression on an exercise ECG or, a reversible regional wall abnormality on an exercise stress echocardiogram or, absence of a large defect on a stress perfusion scan; **and** • there is an ejection fraction of 40% or over; **and** • there are minimal symptoms relevant to driving (chest pain, palpitations, breathlessness).	**Acute myocardial infarction (AMI)** No change.

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Angina A person with angina, which is usually absent on mild exertion, and who is compliant with treatment may drive without licence restriction and without notification to the driver licensing authority, subject to periodic monitoring. A person is **not** fit to hold an **unconditional licence**: • if the person is subject to angina pectoris at rest or on minimal exertion despite medical therapy, or has unstable angina. A **conditional licence** may be considered by the driver licensing authority subject to **periodic review**, taking into account the nature of the driving task and information provided by the **treating specialist** as to whether the following criteria are met: • there is a satisfactory response to treatment; **and** • there are minimal symptoms relevant to driving (chest pain, palpitations, breathlessness).	**Angina** No change.	**Angina** A person is **not** fit to hold an **unconditional licence**: • if the person is subject to angina pectoris. A **conditional licence** may be considered by the driver licensing authority subject to **annual review**, taking into account the nature of the driving task and information provided by the **treating specialist** as to whether the following criteria are met: • either or both: – there is an exercise tolerance of ≥ 90% of the age/sex predicted exercise capacity according to the Bruce protocol or equivalent functional exercise test protocol; – a resting or stress echocardiogram, or a myocardial perfusion study, or both, show no evidence of ischaemia; **and** – there are minimal symptoms relevant to driving (chest pain, palpitations, breathlessness). **Myocardial ischaemia** If myocardial ischaemia is demonstrated, a coronary angiogram may be offered. A **conditional licence** may be considered, subject to **annual review** if the following criterion is met: • the coronary angiogram (invasive or CT) shows lumen diameter reduction of less than 70% in a major coronary branch, and less than 50% in the left main coronary artery. If the result of the angiogram shows a	**Angina** No change.

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		lumen diameter reduction of equal to or greater than 70% in a major coronary branch and less than 50% in the left main coronary artery (or if an angiogram is not conducted), a **conditional licence** may be considered, subject to **annual review**, if the following criteria are met: • there is an exercise tolerance of ≥ 90% of the age/sex predicted exercise capacity according to the Bruce protocol or equivalent functional exercise test protocol; **and** • there is no evidence of severe ischaemia, – that is, less than 2 mm ST segment depression on an exercise ECG or, a reversible regional wall abnormality on an exercise stress echocardiogram or, absence of a large defect on a stress perfusion scan; **and** • there is an ejection fraction of 40% or over; **and** • there are minimal symptoms relevant to driving (chest pain, palpitations, breathlessness). The above criteria also apply if an angiogram is not conducted. Where surgery or PCI is undertaken to relieve the angina, the requirements listed in the table on page 55 apply.	
Coronary artery bypass grafting (CABG) **The person should not drive for at least four weeks after CABG.** A person is **not** fit to hold an **unconditional licence**:	**Coronary artery bypass grafting (CABG)** No change.	**Coronary artery bypass grafting (CABG)** **The person should not drive for at least three months after CABG.**	**Coronary artery bypass grafting (CABG)** No change.

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• if the person requires or has had CABG. A **conditional licence** may be considered by the driver licensing authority subject to **periodic review**, taking into account the nature of the driving task and information provided by the **treating doctor** as to whether the following criteria are met: • it is at least **four weeks** after CABG; **and** • there is satisfactory response to treatment; **and** • there are minimal symptoms relevant to driving (chest pain, palpitations, breathlessness); **and** • there is minimal residual musculoskeletal pain after the chest surgery.		A person is **not** fit to hold an **unconditional licence**: • if the person requires or has had CABG. A **conditional licence** may be considered by the driver licensing authority subject to **annual review**, taking into account the nature of the driving task and information provided by the **treating specialist** as to whether the following criteria are met: • it is at least **three months** after CABG; **and** • there is a satisfactory response to treatment; **and** • there is an exercise tolerance of ≥ 90% of the age/sex predicted exercise capacity according to the Bruce protocol or equivalent functional exercise test protocol; **and** • there is no evidence of severe ischaemia, i.e. less than 2 mm ST segment depression on an exercise ECG or, a reversible regional wall abnormality on an exercise stress echocardiogram or, absence of a large defect on a stress perfusion scan; **and** • there is an ejection fraction of 40% or over; **and** • there are minimal symptoms relevant to driving (chest pain, palpitations, breathlessness); **and** • there is minimal residual musculoskeletal pain after the chest surgery.	

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Percutaneous coronary intervention (PCI) **The person should not drive for at least two days after the PCI.** A person is **not** fit to hold an **unconditional licence**: • if the person requires or has had a PCI. A **conditional licence** may be considered by the driver licensing authority subject to **periodic review**, taking into account the nature of the driving task and information provided by the **treating doctor** as to whether the following criteria are met: • there was no AMI immediately before or after the PCI; **and** • there is a satisfactory response to treatment; **and** • there are minimal symptoms relevant to driving (chest pain, palpitations, breathlessness).	**Percutaneous coronary intervention (PCI)** (e.g. angioplasty/stent) No other change.	**Percutaneous coronary intervention (PCI)** **The person should not drive for at least four weeks after the PCI.** A person is **not** fit to hold an **unconditional licence**: • if the person requires or has had a PCI. A **conditional licence** may be considered by the driver licensing authority subject to **annual review**, taking into account the nature of the driving task and information provided by the **treating specialist** as to whether the following criteria are met: • it is at least **four weeks** after the PCI; **and** • there is a satisfactory response to treatment; **and** • there is an exercise tolerance of ≥ 90% of the age/sex predicted exercise capacity according to the Bruce protocol or equivalent functional exercise test protocol; **and** • there is no evidence of severe ischaemia, i.e. less than 2 mm ST segment depression on an exercise ECG or a reversible regional wall abnormality on an exercise stress echocardiogram or absence of a large defect on a stress perfusion scan; **and** • there is an ejection fraction of 40% or over; **and** • there are minimal symptoms relevant to driving (chest pain,	**Percutaneous coronary intervention (PCI)** (e.g. angioplasty/stent) No other change.

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		palpitations, breathlessness).	
Atrial fibrillation **The non-driving period will depend on the method of treatment – see below.** A person is **not** fit to hold an **unconditional licence**: • if an episode of fibrillation results in syncope or incapacitating symptoms. A **conditional licence** may be considered by the driver licensing authority subject to **periodic review**, taking into account the nature of the driving task and information provided by the **treating doctor** as to whether the following criteria are met: • there is a satisfactory response to treatment; **and** • there are minimal symptoms relevant to driving (chest pain, palpitations, breathlessness). The person should not drive for: • at least **one week** following percutaneous intervention; • at least **one week** following initiation of successful medical treatment; • an appropriate time following open chest surgery.	**Atrial fibrillation** No change.	**Atrial fibrillation** **The non-driving period will depend on the method of treatment – see below.** A person is **not** fit to hold an **unconditional licence**: • if the person has a history of recurrent or persistent arrhythmia that may result in syncope or incapacitating symptoms. A **conditional licence** may be considered by the driver licensing authority subject to **annual review**, taking into account the nature of the driving task and information provided by the **treating specialist** as to whether the following criteria are met: • there is a satisfactory response to treatment; **and** • there are minimal symptoms relevant to driving (chest pain, palpitations, breathlessness); **and** • appropriate follow- up has been arranged. The person should not drive for: • at least **four weeks** following percutaneous intervention; • at least **four weeks** following initiation of successful medical treatment; • at least **three months** following open chest surgery. • If the person is taking anticoagulants refer to anticoagulant therapy below (page 51).	**Atrial fibrillation** No change.

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Paroxysmal arrhythmias A person is **not** fit to hold an **unconditional licence**: • if there was near or definite collapse. A **conditional licence** may be considered by the driver licensing authority subject to **periodic review***, taking into account the nature of the driving task and information provided by the **treating doctor** as to whether the following criteria are met: • there is a satisfactory response to treatment; **and** • there are normal haemodynamic responses at a moderate level of exercise; **and** • there are minimal symptoms relevant to driving (chest pain, palpitations, breathlessness). * Where the condition is considered to be cured, the requirement for periodic review may be waived.	**Paroxysmal arrhythmias** No change.	**Paroxysmal arrhythmias** **The non-driving period is at least four weeks.** A person is **not** fit to hold an **unconditional licence**: • if there was near or definite collapse. A **conditional licence** may be considered by the driver licensing authority subject to **periodic review***, taking into account the nature of the driving task and information provided by the **treating specialist** as to whether the following criteria are met: • there is a satisfactory response to treatment; **and** • there are normal haemodynamic responses at a moderate level of exercise; **and** • there are minimal symptoms relevant to driving (chest pain, palpitations, breathlessness). The person should not drive: • for at least **four weeks** following percutaneous intervention: • for at least **four weeks** following initiation of successful medical treatment. * Where the condition is considered to be cured, the requirement for periodic review may be waived.	**Paroxysmal arrhythmias** No change.
Cardiac arrest **The person should not drive for at least six months following a cardiac arrest.** **Limited exceptions apply — see**		**Cardiac arrest** **The person should not drive for at least six months following a cardiac arrest.** A person is **not** fit to hold an	

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below*. A person is **not** fit to hold an **unconditional licence**: • if the person has suffered a cardiac arrest. A **conditional licence** may be considered by the driver licensing authority subject to **periodic review**, taking into account the nature of the driving task and information provided by the **treating doctor** as to whether the following criteria are met: • it is at least **six months** after the arrest; **and** • the cause of the cardiac arrest and response to treatment has been considered; **and** • there are minimal symptoms relevant to driving (chest pain, palpitations, breathlessness). * A shorter non-driving period than six months may be considered subject to specialist assessment if the cardiac arrest has occurred within 48 hours of an acute myocardial infarction, or if the arrhythmia causing the cardiac arrest has been addressed by a radio frequency ablation surgery or by pacemaker implantation.		**unconditional licence**: • if the person has suffered a cardiac arrest. A **conditional licence** may be considered by the driver licensing authority subject to **annual review**, taking into account the nature of the driving task and information provided by the **treating specialist** as to whether the following criteria are met: • it is at least **six months** after the arrest; **and** • a reversible cause is identified and recurrence is unlikely; **and** • there are minimal symptoms relevant to driving (chest pain, palpitations, breathlessness).	
Cardiac pacemaker **The person should not drive for at least two weeks after insertion of a pacemaker.** A person is **not** fit to hold an **unconditional licence**: • if a cardiac pacemaker is required or has been implanted or replaced.		**Cardiac pacemaker** **The person should not drive for at least four weeks after insertion of a pacemaker.** A person is **not** fit to hold an **unconditional licence**: • if a cardiac pacemaker is required or has been implanted or replaced.	

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A **conditional licence** may be considered by the driver licensing authority subject to **periodic review**, taking into account the nature of the driving task and information provided by the **treating doctor** as to whether the following criteria are met: • it is at least **two weeks** after insertion of the cardiac pacemaker; **and** • there is a satisfactory response to treatment; **and** • there are minimal symptoms relevant to driving (chest pain, palpitations, breathlessness).		A **conditional licence** may be considered by the driver licensing authority subject to **annual review**, taking into account the nature of the driving task and information provided by the **treating specialist** as to whether the following criteria are met: • it is at least **four weeks** after insertion of the cardiac pacemaker; **and** • the relative risks of pacemaker dysfunction have been considered; **and** • there are normal haemodynamic responses at a moderate level of exercise; **and** • there are minimal symptoms relevant to driving (chest pain, palpitations, breathlessness).	
Implantable cardioverter defibrillator (ICD) **The non-driving period will depend on the reason for ICD implantation – see below.** A person is **not** fit to hold an **unconditional licence:** • if the person requires or has had an ICD implanted for ventricular arrhythmias. A **conditional licence** may be considered by the driver licensing authority subject to **periodic review**, taking into account the nature of the driving task and information provided by the **treating specialist** as to whether the following criteria are met: • the ICD has been implanted for an	**Implantable cardioverter defibrillator (ICD)** No change.	**Implantable cardioverter defibrillator (ICD)** A person is **not** fit to hold an **unconditional licence or a conditional licence**: • if the person requires or has had an ICD implanted for ventricular arrhythmias, including those implanted for prophylaxis.	**Implantable cardioverter defibrillator (ICD)** **The person should not drive for at least 6 months after the ICD is implanted.** A person is **not** fit to hold an **unconditional licence** or a **conditional licence**: • if the ICD was implanted to manage ventricular arrhythmias (secondary prevention). A **conditional licence** may be considered by the driver licensing authority subject to **annual review** taking into account the nature of the driving tasks and information provided by the treating **specialist*** as to whether

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episode of cardiac arrest and the person has been asymptomatic for **six months**; **or** • the ICD has been prophylactically implanted for at least **two weeks**; **and** • there are minimal symptoms relevant to driving (chest pain, palpitations, breathlessness). A person should not drive: • for **two weeks** after a generator change of an ICD); • for at least **four weeks** after appropriate ICD therapy associated with symptoms of haemodynamic compromise (if syncopal, refer to syncope, page 54).			the following criteria are met: • the ICD was implanted for primary prevention; **and** • it is at least 6 months after the insertion of the ICD; **and** • there are no episodes of atrial fibrillation; **and** • there are no discharges from the defibrillator; **and** • interrogation of the ICD shows no evidence of anti-tachycardic pacing; **and** • there is an ejection fraction ≥ 40%; **and** • there is an exercise tolerance > 90% of the age/sex predicted exercise capacity according to the Bruce protocol or equivalent functional test protocol; **and** • there is no evidence of severe ischaemia – that is, less than 2mm ST segment depression on an exercise test or reversible regional wall abnormality on an exercise stress echocardiogram or absence of a large defect on a stress perfusion scan; **and** • there are minimal symptoms relevant to driving (chest pain, palpitations, and breathlessness). *The initial assessment is to be performed by the treating electrophysiologist.
ECG changes **The person should not drive for at least two weeks following initiation**	**ECG changes** No change.	**ECG changes** **The person should not drive for at least three months following**	**ECG changes** No change.

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of treatment. A person is **not** fit to hold an **unconditional licence**: • if the conduction defect is causing symptoms. A **conditional licence** may be considered by the driver licensing authority subject to **periodic review**, taking into account the nature of the driving task and information provided by the **treating doctor** as to whether the following criteria are met: • the condition has been treated procedurally or medically for at least two weeks; **and** • there is a satisfactory response to treatment; **and** • there are minimal symptoms relevant to driving (chest pain, palpitations, breathlessness). * Where the condition is considered to be cured, the requirement for periodic review may be waived.		**initiation of treatment.** A person is **not** fit to hold an **unconditional licence**: • if the person has an electrocardiographic abnormality, for example, left bundle branch block, right bundle branch block, pre-excitation, prolonged QT interval or changes suggestive of myocardial ischaemia or previous myocardial infarction. A **conditional licence** may be considered by the driver licensing authority subject to **annual review**, taking into account the nature of the driving task and information provided by the **treating specialist** as to whether the following criteria are met: • all of the following: – the condition has been treated procedurally or medically for at least three months; **and** – there is a satisfactory response to treatment; **and** – there are minimal symptoms relevant to driving (chest pain, palpitations, breathlessness); **or** • follow-up investigation has excluded underlying cardiac disease. * Where the condition is considered to be cured, the requirement for periodic review may he waived.	
Aneurysms: abdominal and thoracic **The person should not drive for at least four weeks post repair.**	**Aneurysms: abdominal and thoracic** The person should **not** drive for at least	**Aneurysms: abdominal and thoracic** **The person should not drive for at least three months post repair.**	**Aneurysms: abdominal and thoracic** The person should **not** drive for at least

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A person is **not** fit to hold an **unconditional licence**: • if the person has an unrepaired aortic aneurysm, thoracic or abdominal. A **conditional licence** may be considered by the driver licensing authority subject to **periodic review**, taking into account the nature of the driving task and information provided by the **treating specialist** as to whether the following criteria are met: • both: – it is at least **four weeks** after repair; **and** – the response to treatment is satisfactory, according to the treating vascular surgeon; **or** • in the case of atherosclerotic aneurysm or aneurysm associated with the bicuspid aortic valve, the aneurysm diameter is less than 55mm; **or** • the aneurysm diameter is less than 50mm.	**4 weeks** after repair. A person is **not** fit to hold an **unconditional** licence: • if the person has an unrepaired aortic aneurysm – thoracic or abdominal. A **conditional licence** may be considered by the driver licensing authority subject to **periodic review**, taking into account the nature of the driving task and information provided by the **treating specialist** as to whether the following criteria are met: • both: – it is at least **4 weeks** after repair; **and** – the response to treatment is satisfactory, according to the **treating vascular surgeon**; • or – in the case of atherosclerotic aneurysm or aneurysm associated with the bicuspid aortic valve, the aneurysm diameter is less than 55 mm; **or** – the diameter is less than 50 mm for all other aneurysms.	A person is **not** fit to hold an **unconditional licence**: • if the person has an unrepaired aortic aneurysm, thoracic or abdominal. A **conditional licence** may be considered by the driver licensing authority subject to **annual review**, taking into account the nature of the driving task and information provided by the **treating specialist** as to whether the following criteria are met: • both: - it is at least **three months** after repair; **and** - the response to treatment is satisfactory, according to the treating vascular surgeon; **or** • in the case of atherosclerotic aneurysm or aneurysm associated with the bicuspid aortic valve, the aneurysm diameter is less than 55mm; **or** • the aneurysm diameter is less than 50mm.	**3 months** after repair. A person is **not** fit to hold an **unconditional licence**: • if the person has an unrepaired aortic aneurysm – thoracic or abdominal. A **conditional licence** may be considered by the driver licensing authority subject to **annual review**, taking into account the nature of the driving task and information provided by the **treating specialist** as to whether the following criteria are met: • both: – it is at least **3 months** after repair; **and** – the response to treatment is satisfactory, according to the **treating vascular surgeon**; • or – in the case of atherosclerotic aneurysm or aneurysm associated with the bicuspid aortic valve, the aneurysm diameter is less than 55 mm; **or** – the diameter is less than 50 mm for all other aneurysms.
Deep vein thrombosis (DVT) There are no licensing criteria for DVT. For advisory non-driving period following DVT refer to Table 6, page 38. • For long-term anticoagulation refer to page 51. Refer also to section 2.2.7 in text.	**Deep vein thrombosis (DVT)** No change.	**Deep vein thrombosis (DVT)** There are no licensing criteria for DVT. For advisory non-driving period following DVT refer to Table 6, page 38. • For long-term anticoagulation refer to page 51. Refer also to section 2.2.7 in text.	**Deep vein thrombosis (DVT)** No change.

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Pulmonary embolism (PE) There are no licensing criteria for PE. For advisory non-driving period following PE refer to Table 6, page 38. For long-term anticoagulation refer to page 51. Refer also to section 2.2.7 in text.	**Pulmonary embolism (PE)** No change.	**Pulmonary embolism (PE)** There are no licensing criteria for PE. For advisory non-driving period following PE refer to Table 6, page 38. For long-term anticoagulation refer to page 51. Refer also to section 2.2.7 in text.	**Pulmonary embolism (PE)** No change.
Valvular heart disease (including treatment with Mitra Clips and Transcutaneous Aortic Valve Replacement) **The person should not drive for at least four weeks following valve repair.** A person is **not** fit to hold an **unconditional licence**: • if the person has symptoms on moderate exertion. A **conditional licence** may be considered by the driver licensing authority subject to **periodic review**, taking into account the nature of the driving task and information provided by the **treating doctor** as to whether the following criteria are met: • there is a satisfactory response to treatment; **and** • there are minimal symptoms relevant to driving (chest pain, palpitations, breathlessness); **and** • there is minimal residual musculoskeletal pain after chest surgery, if required.	**Valvular heart disease (including treatment with Mitra Clips, Tricuspid clips, Transcutaneous Aortic Valve Replacement and transcutaneous pulmonary valve replacement).** No other change.	**Valvular heart disease (including treatment with Mitra Clips and Transcutaneous Aortic Valve Replacement)** **The person should not drive for at least four weeks following valve repair.** A person is **not** fit to hold an **unconditional licence**: • if the person has any history or evidence of valve disease, with or without surgical repair or replacement, associated with symptoms or a history of embolism, arrhythmia, cardiac enlargement, abnormal ECG or high blood pressure; **or** • if the person is taking anticoagulants (a conditional licence may be issued subject to the requirements specified on page 51 in relation to anticoagulant therapy). A **conditional licence** may be considered by the driver licensing authority subject to **annual review**, taking into account the nature of the driving task and information provided by the **treating specialist** as to whether the following criteria are met: • the person's cardiological	**Valvular heart disease (including treatment with Mitra Clips, Tricuspid clips, Transcutaneous Aortic Valve Replacement and transcutaneous pulmonary valve replacement).** No other change.

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		assessment shows valvular disease of no haemodynamic significance; **or**
		• all of the following:
		  • it is three months following surgery and there is no evidence of valvular dysfunction; **and**
		  • there are minimal symptoms relevant to driving (chest pain, palpitations, breathlessness); **and**
		  • there is minimal residual musculoskeletal pain after chest surgery.	

Dilated cardiomyopathy A person is **not** fit to hold an **unconditional licence:** • if the person has a dilated cardiomyopathy. A **conditional licence** may be considered by the driver licensing authority subject to **periodic review**, taking into account the nature of the driving task and information provided by the **treating doctor** as to whether the following criteria are met: • there are minimal symptoms relevant to driving (chest pain, palpitations, breathlessness); **and** • the person is not subject to arrhythmias. Cardiologist assessment is recommended for complex presentations.	**Dilated cardiomyopathy** No change.	**Dilated cardiomyopathy** A person is **not** fit to hold and **unconditional licence**: • if the person has a dilated cardiomyopathy. A **conditional licence** may be considered by the driver licensing authority subject to **annual review,** taking into account the nature of the driving task and information provided by the **treating specialist** as to whether the following criteria are met: • there is an ejection fraction of 40% or over; **and** • there are minimal symptoms relevant to driving (chest pain, palpitations, breathlessness); **and** • the person is not subject to arrhythmias.	**Dilated cardiomyopathy** No change.
Hypertrophic cardiomyopathy (HCM) A person is **not** fit to hold an **unconditional licence:**	**Hypertrophic cardiomyopathy (HCM)** No change.	**Hypertrophic cardiomyopathy (HCM)** A person is **not** fit to hold an **unconditional licence**:	**Hypertrophic cardiomyopathy (HCM)** No change.

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• if the person has HCM. A **conditional licence** may be considered by the driver licensing authority subject to **periodic review**, taking into account the nature of the driving task and information provided by the **treating specialist** as to whether the following criteria are met: • there are minimal symptoms relevant to driving (chest pain, palpitations, breathlessness); **and** • the person is not subject to arrhythmias or syncope.		• if the person has HCM. A **conditional licence** may be considered by the driver licensing authority subject to **annual review**, taking into account the nature of the driving task and information provided by the **treating specialist** as to whether the following criteria are met: • the left ventricular ejection fraction is 40% or over; **and** • there is an exercise tolerance of ≥ 90% of the age/sex predicted exercise capacity according to the Bruce protocol or equivalent functional exercise test protocol; **and** • there is an absence of: a history of syncope; severe LV hypertrophy; a family history of sudden death; or ventricular arrhythmia on Holter testing; **and** • there are minimal symptoms relevant to driving (chest pain, palpitations, breathlessness).	
Anticoagulant therapy A person on a private vehicle licence may drive without restriction and without reporting to the driver licensing authority, pending periodic review if: • anticoagulation is maintained at the appropriate degree for the underlying condition.	**Anticoagulant therapy** No change.	**Anticoagulant therapy** A person is **not** fit to hold an **unconditional licence**: • if the person is on long-term anticoagulant therapy. A **conditional licence** may be considered by the driver licensing authority subject to **annual review**, taking into account the nature of the driving task and information provided by the **treating specialist** as to whether the following criterion is met: • anticoagulation is maintained at the appropriate degree for the underlying	**Anticoagulant therapy** No change.

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		condition.	
Congenital disorders A person is **not** fit to hold an **unconditional licence**: • if the person has a complicated congenital heart disorder. A **conditional licence** may be considered by the driver licensing authority subject to **periodic review**, taking into account the nature of the driving task and information provided by the **treating specialist** as to whether the following criterion is met: • there are minimal symptoms relevant to driving (chest pain, palpitations, breathlessness).	**Congenital disorders** A person may drive without restriction and without reporting to the driver licensing authority if they have uncomplicated congenital heart disease and there are no or minimal symptoms relevant to driving. A person should **not** drive for a period of at **least 4 weeks** after surgery to correct a congenital lesion. The person should not drive for at **least 2 weeks** following a percutaneous procedure to treat a congenital lesion. A person is **not** fit to hold an **unconditional licence**: • if the person has a complicated congenital heart disorder. A **conditional licence** may be considered by the driver licensing authority subject to **periodic review** taking into account the nature of the driving task and information provided by the **treating specialist** as to whether the following criterion is met: • there are minimal symptoms relevant to driving (chest pain, palpitations, breathlessness)	**Congenital disorders** A person is **not** fit to hold an **unconditional licence:** • if the person has a complicated congenital heart disorder. A **conditional licence** may be considered by the driver licensing authority subject to **periodic review**, taking into account the nature of the driving task and information provided by the **treating specialist** as to whether the following criteria are met: • there is a minor congenital heart disorder of no haemodynamic significance such as pulmonary stenosis, atrial septal defect, small ventricular septal defect, bicuspid aortic valve, patent ductus arteriosus or mild coarctation of the aorta; **and** • there are minimal symptoms relevant to driving (chest pain, palpitations, breathlessness).	**Congenital disorders** A person should not drive for at **least 3 months** following surgical treatment for congenital heart disease. A person should not drive for **4 weeks** following a percutaneous intervention for congenital heart disease. A person is **not** fit to hold an **unconditional licence:** • if the person has a complicated congenital heart disorder. A conditional licence may be considered by the driver licensing authority subject to annual review taking into account the nature of the driving task and the information provided by the **treating specialist** as to whether the following criteria are met: • there are minimal symptoms relevant to driving (chest pain, palpitations, breathlessness); **and** • The ejection fraction of the systemic ventricle is greater than 40%; **and** • there is a minor congenital disorder of no haemodynamic significance such as pulmonary stenosis, atrial septal defect, small ventricular septal defect, bicuspid aortic valve, patent ductus arteriosus or mild coarctation of the aorta; **or** • there has been surgical/percutaneous correction of the congenital lesion including atrial septal defect, ventricular

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			septal defect, patent ductus arteriosus, coarctation, pulmonary stenosis, total correction of tetralogy of Fallot or total correction of transposition of the great arteries and there are no or minimal symptoms.
Heart failure A person is **not** fit to hold an **unconditional licence**: • if symptoms arise on moderate exertion. A **conditional licence** may be considered by the driver licensing authority subject to **periodic review**, taking into account the nature of the driving task and information provided by the **treating doctor** as to whether the following criteria are met: • there is a satisfactory response to treatment; **and** • there are minimal symptoms relevant to driving (chest pain, palpitations, breathlessness).	**Heart failure** No change.	**Heart failure** A person is **not** fit to hold an **unconditional licence:** • if the person has heart failure. A **conditional licence** may be considered by the driver licensing authority subject to **annual review**, taking into account the nature of the driving task and information provided by the **treating specialist** as to whether the following criteria are met: • there is a satisfactory response to treatment; **and** • there is an exercise tolerance of ≥ 90% of the age/sex predicted exercise capacity according to the Bruce protocol or equivalent functional exercise test protocol; **and** • there is an ejection fraction of 40% or over; **and** • the underlying cause of the heart failure is considered; **and** • there are minimal symptoms relevant to driving (chest pain, palpitations, breathlessness).	**Heart failure** No change.
Ventricular assist devices **A person should not drive for at least 3 months following insertion of a ventricular assist device.**	**Ventricular assist devices (LVAD, BiVAD)** **A person should not drive for at least 3 months following insertion of a**	**Ventricular assist devices** A person is **not** fit to hold an **unconditional licence** or a **conditional licence**:	**Ventricular assist devices (LVAD, BiVAD)** No change.

PRIVATE		COMMERCIAL	
2016	**Revised 2022**	**2016**	**Revised 2022**
A person is not fit to hold an unconditional licence: • if the person requires a VAD. In the case of a left ventricular assist device (LVAD), a **conditional licence** may be considered by the driver licensing authority subject to **six monthly review**, taking into account the nature of the driving task and information provided by the **treating specialist** as to whether the following criteria are met: • the device has been in situ for at least **three months** and there have been no equipment problems during the preceding two weeks; **and** • anticoagulation is stable as per this standard; **and** • the medical condition is stable and satisfactorily controlled, and there are minimal symptoms relevant to driving (chest pain, palpitations, breathlessness); **and** • the person is confident in relation to all LVAD equipment. Where there is concern of cognitive or neurological impairment, a practical driver assessment should be conducted (refer to Part A section **2.3.1 Practical driver assessments**). A person is **not** fit to hold an **unconditional licence** or a **conditional licence**: • if the person requires a combined LVAD/RVAD or an artificial heart.	**ventricular assist device.** A person is not fit to hold an unconditional licence: • if the person requires an LVAD or BiVAD A **conditional licence** may be considered by the driver licensing authority subject to **6-monthly review**, taking into account the nature of the driving task and information provided by the **treating specialist** as to whether the following criteria are met: • the device has been in situ for at least **3 months** and there have been no equipment problems during the preceding 2 weeks; **and** • anticoagulation is stable as per this standard; **and** • the medical condition is stable and satisfactorily controlled, and there are minimal symptoms relevant to driving (chest pain, palpitations, breathlessness); **and** • the person is confident in relation to all LVAD or BiVAD equipment. Where there is concern of cognitive or neurological impairment, a practical driver assessment should be conducted (refer to Part A section **2.3.1 Practical driver assessments**).	• if the person requires a VAD of any type or an artificial heart.	
Heart transplant	**Heart transplant**	**Heart transplant**	**Heart transplant**

PRIVATE		COMMERCIAL	
2016	**Revised 2022**	**2016**	**Revised 2022**
The person should not drive for at least six weeks post transplant. A person is **not** fit to hold an **unconditional licence**: • if the person requires or has had a heart or heart/lung transplant. A **conditional licence** may be considered by the driver licensing authority subject to **periodic review**, taking into account the nature of the driving task and information provided by the **treating specialist** as to whether the following criteria are met: • it is at least **six weeks** after transplant; **and** • there is a satisfactory response to treatment; **and** • there are minimal symptoms relevant to driving (chest pain, palpitations, breathlessness).	No change.	**The person should not drive for at least three months post transplant.** A person is **not** fit to hold an **unconditional licence**: • if the person requires or has had a heart or heart/lung transplant. A **conditional licence** may be considered by the driver licensing authority subject to **annual review**, taking into account the nature of the driving task and information provided by the **treating specialist** as to whether the following criteria are met: • it is at least **three months** after transplant; **and** • there is a satisfactory response to treatment; **and** • there is an exercise tolerance of ≥ 90% of the age/sex predicted exercise capacity according to the Bruce protocol or equivalent exercise test protocol); **and** • there are minimal symptoms relevant to driving (chest pain, palpitations, breathlessness).	No change.
Hypertension A person is **not** fit to hold an **unconditional** licence: • if the person has blood pressure consistently greater than 200 systolic or greater than 110 diastolic (treated or untreated). A **conditional licence** may be considered by the driver licensing authority subject to **periodic review**, taking into account the nature of the driving task and information provided by	**Hypertension** No change.	**Hypertension** A person is **not** fit to hold an **unconditional licence**: • if the person has blood pressure consistently greater than 170 systolic or greater than 100 diastolic (treated or untreated). A **conditional licence** may be considered by the driver licensing authority subject to **annual review**, taking into account the nature of the driving task and information provided by	**Hypertension** No change.

PRIVATE		COMMERCIAL	
2016	**Revised 2022**	**2016**	**Revised 2022**
the **treating doctor** as to whether the following criteria are met: • the blood pressure is well controlled; **and** • there are no side effects from the medication that will impair safe driving; **and** • there is no evidence of damage to target organs relevant to driving.		the **treating specialist*** as to whether the following criteria are met: • the person is treated with antihypertensive therapy and effective control of hypertension is achieved over a four-week follow-up period; **and** • there are no side effects from the medication that will impair safe driving; **and** • there is no evidence of damage to target organs relevant to driving. * Ongoing fitness to drive for commercial vehicle drivers may be assessed by the treating general practitioner, provided this is mutually agreed by the specialist, general practitioner and driver licensing authority. The initial granting of a conditional licence must, however, be based on information provided by the specialist.	
Stroke Refer to section 6 Neurological conditions	**Stroke** No change.	**Stroke** Refer to section 6 Neurological conditions	**Stroke** No change.
Syncope **The person could resume driving within 24 hours if the episode was vasovagal in nature with a clear-cut precipitating factor (such as venesection) and the situation is unlikely to occur while driving. The driver licensing authority should not be notified.** The person should not drive for at least	**Syncope** No change.	**Syncope** The person could resume driving within 24 hours if the episode was vasovagal in nature with a clear-cut precipitating factor (such as venesection) and the situation is unlikely to occur while driving. The driver licensing authority should not be notified. The person should not drive for at least three months after syncope due to other	**Syncope** No change.

PRIVATE		COMMERCIAL	
2016	**Revised 2022**	**2016**	**Revised 2022**
four weeks after syncope due to other cardiovascular causes. A person is **not** fit to hold an **unconditional licence:** • if the condition is severe enough to cause episodes of loss of consciousness without warning. A conditional licence may be considered by the driver licensing authority subject to periodic review, taking into account the nature of the driving task and information provided by the treating doctor as to whether the following criteria are met: • the underlying cause has been identified; and • satisfactory treatment has been instituted; and • the person has been symptom-free for at least **four weeks**.		cardiovascular causes. A person is **not** fit to hold an **unconditional licence**: • if the condition is severe enough to cause episodes of loss of consciousness without warning. A conditional licence may be considered by the driver licensing authority subject to annual review, taking into account the nature of the driving task and information provided by the treating specialist as to whether the following criteria are met: • the underlying cause has been identified; and • satisfactory treatment has been instituted; and • the person has been symptom-free for **three months**.	

3.4 Diabetes mellitus

3.4.1 Inputs and review

Stakeholders that provided issues are listed below.

The review of the diabetes chapter involved consultation with the Australian Diabetes Society via its representative, Prof. Stephen Twigg. Findings from *Influence of chronic illness on crash involvement of motor vehicle drivers: 3rd edition* and other medical and fitness-to-drive literature informed the outcomes of the review.

Stakeholder submissions
Driver licensing authorities and transport regulators • Department of Transport (Vic)
Medical/health professional stakeholders • Australian Diabetes Educators Society • Australian Diabetes Society • Australian and New Zealand Society of Occupational Medicine • Royal Australasian College of Physicians • Royal Australian College of General Practitioners • Royal College of Pathologists of Australasia
Industry stakeholders • Australian Trucking Association • NatRoad
Driver/patient/carer stakeholders • Diabetes Australia

3.4.2 Issues and recommended changes

Hypoglycaemia

Hypoglycaemia is the main road safety risk for drivers with diabetes. In the previous 2012 and 2016 reviews, this chapter was significantly revised to clarify the definition of a hypoglycaemic episode and to provide detail about the risks and management of lack of hypoglycaemic awareness for both private and commercial drivers. A non-driving period was also introduced for drivers who had experienced a severe hypoglycaemic event. The Clarke questionnaire for hypoglycaemic awareness was included to encourage diagnosis, particularly in people with prolonged insulin usage or following a crash or serious hypoglycaemic event.

A submission was received to clarify the definition of ‘recent history’ and ‘non-driving period’ for a severe hypoglycaemic event. Medical specialist advice supported the current description and guidance in *Assessing Fitness to Drive*, noting that there are both biological and behavioural contexts that need to be considered regarding serious hypoglycaemic events and recovery. The consideration of recent history and non-driving period should remain determined through clinical judgement and individualised assessment, noting that six weeks is in general sufficient to assess recovery. The private and commercial medical standard tables already cross-reference the guidance for a ‘severe hypoglycaemic event’. No changes were made.

Submissions were received requesting whether a distinction should be made between the classes of non-insulin glucose-lowering agents. Specialists advised that a distinction between the types of non-insulin-lowering agents should not be made, and most of these have a similarly low risk of causing hypoglycaemia. Clinicians make their assessment based on a range of factors and are well placed to do this, including varying hypoglycaemic risk from these medications.

Advice for using new blood glucose–monitoring devices

Submissions were received to include information on the use of devices such as flash and continuous glucose monitors. In their joint submission, the Australian Diabetes Educators Society, the Australian Diabetes Society and Diabetes Australia provided content on these devices to update the advice to drivers for managing hypoglycaemia. This does not form part of the licensing criteria per se, but is provided as supporting information on the ways a person can take precautionary steps to manage the risk of a hypoglycaemic event. Further consultation with medical specialists highlighted that devices with alarms should not replace an individual's capacity to sense or experience other early warning signs of hypoglycaemia. Content is included in section 3.2.1 Hypoglycaemia to reflect the use of these devices.

HbA1C testing and satisfactory control of diabetes

In 2016 the criteria for 'satisfactory control' were removed from the licensing criteria tables to reflect the emphasis on the main risks of hypoglycaemia and end-organ effects. This differentiates the road safety requirements from general management requirements, for which the goal remains good control, indicated by monitoring of blood glucose control and HbA1c. Medical and health stakeholders did not support including a reference to HbA1c as an indicator of control with respect to driving and questioned the direct relevance to crash risk. The Diabetes Society, Diabetes Australia and the Diabetes Educators Association issued a joint statement in support of removing the HbA1c requirement and focusing on the main risks of hypoglycaemia and end-organ effects.

In the current review, submissions were received requesting a reversal of this change and inclusion of HbA1c testing to determine satisfactory control of blood glucose levels. Specialist advice reaffirmed the main risk for safe driving is hypoglycaemia and end-organ effects. This view is supported with the findings from the MUARC report that highlights that identifying drivers at risk of hypoglycaemia while driving remains the priority. Specialist advice noted that HbA1c is a poor marker of risk for severe hypoglycaemic events and the best method to assess for the presence and severity of diabetic complications is evaluation of organ function. Including HbA1c reporting in *Assessing Fitness to Drive* is not supported for hypoglycaemia or for organ complications status in people with diabetes. This approach is consistent with international reporting for safe driving in people with diabetes. It was further added that HbA1c reporting should not be linked to driver licensing decisions as a motivator for general health, either as a punitive measure or a behavioural incentive. No changes were made.

Distinction between insulin-treated and non-insulin-treated diabetes standards

A submission was made to consider removing the differentiation between drivers treated with insulin and those treated with other hypoglycaemic agents. This could be replaced with a single standard for private and commercial licensing. A systematic literature review that evaluated the available evidence regarding the influence of diabetes on MVC risk and on on-road driving performance found no evidence of a risk differential between these treatment cohorts. Specialist advice did not support this recommendation. The greatest risk for people with diabetes and driving is insulin therapy causing a crash from severe hypoglycaemia, an observation that is supported by findings from Coroners Court cases in Australia. Further investigation into variation across sub-groups of insulin-treated diabetes would be required before this would warrant a re-examination of the standards. In addition, existing standards capture the impacts from diabetic complications, which are more likely for insulin-treated diabetes, supporting the distinction between the two standards. No changes were made.

Hyperglycaemic emergencies

We received a submission during the public consultation round recommending guidance for hyperglycaemic episodes such as diabetic ketoacidosis and hyperosmolar hyperglycaemic states. There is there is not enough evidence to determine regular effects on driving performance and related crash risk from acute hyperglycaemia. General guidance is provided in 3.2.2 – Acute hyperglycaemia. The NTC will consider this matter in the next AFTD review.

3.4.3 Implications for stakeholders

Driver licensing authorities

Clarification on glucose monitors will assist licensing authorities when considering the use of these device and a driver's ability to maintain hypoglycaemic awareness.

Health professionals

Information on the use of glucose sensory monitors will support patient management with respect to reduced hypoglycaemic awareness and driving because patient awareness remains the key long-term goal for this condition.

Drivers

Drivers can be provided guidance on how to incorporate the use of glucose sensory monitors in maintaining hypoglycaemia awareness.

3.4.4 Medical standards for licensing – diabetes (revised 2022)

PRIVATE		COMMERCIAL	
2016	**Revised 2022**	**2016**	**Revised 2022**
Diabetes controlled by diet alone A person with diabetes treated by diet and exercise alone may drive without licence restriction. They should be reviewed by their treating doctor periodically regarding progression of diabetes.	No change.	**Diabetes controlled by diet alone** A person with diabetes treated by diet and exercise alone may drive without licence restriction. They should be reviewed by their treating doctor periodically regarding progression of diabetes.	No change.
Diabetes treated by glucose-lowering agents other than insulin A person is **not** fit to hold an **unconditional licence**: • if the person has end-organ complications that may affect driving, as per this publication, **or** • the person has had a recent 'severe hypoglycaemic event'. A **conditional licence** may be considered by the driver licensing authority subject to **periodic review**, taking into consideration the nature of the driving task, and information provided by the **treating doctor** on whether the following criteria are met: • any end-organ effects are satisfactorily treated, with reference to the standards in this publication; **and** • the person is following a treatment regimen that minimises the risk of hypoglycaemia; **and** • the person experiences early warning symptoms (awareness) of hypoglycaemia or has a documented management plan for	No change.	**Diabetes treated by glucose-lowering agents other than insulin** A person is **not** fit to hold an **unconditional licence**: • if the person has non-insulin treated diabetes mellitus and is being treated with glucose-lowering agents other than insulin. A **conditional licence** may be considered by the driver licensing authority subject to at least **annual review**, taking into consideration the nature of the driving task and information provided by an **endocrinologist / consultant physician specialising in diabetes*** on whether the following criteria are met: • there is no recent history of a 'severe hypoglycaemic event' as assessed by the specialist; **and** • the person experiences early warning symptoms (awareness) of hypoglycaemia; **and** • the person is following a treatment regimen that minimises the risk of hypoglycaemia; **and** • there is an absence of end-organ	No change.

PRIVATE		COMMERCIAL	
2016	**Revised 2022**	**2016**	**Revised 2022**
lack of early warning symptoms; **and** • any recent 'severe hypoglycaemic event' has been satisfactorily treated, with reference to the standards in this publication (refer to section 3.2.1). For private drivers who do not meet the above criteria, a **conditional licence** may be considered by the driver licensing authority, taking into account the opinion of an **endocrinologist / consultant physician specialising in diabetes** and subject to regular specialist review.		effects that may affect driving as per this publication. * For a commercial driver with type 2 diabetes who is being treated with metformin alone, the annual review for a conditional licence may be undertaken by the driver's treating doctor upon mutual agreement of the treating doctor, specialist and driver licensing authority. The initial granting of a conditional licence must, however, be based on information provided by the specialist.	
Insulin-treated diabetes (except gestational diabetes) A person is **not** fit to hold an **unconditional licence**: • if the person has insulin-treated diabetes. A **conditional licence** may be considered by the driver licensing authority subject to at least **two-yearly review**, taking into consideration the nature of the driving task and information provided by the **treating doctor** on whether the following criteria are met: • there is no recent history of a 'severe hypoglycaemic event; **and** • the person is following a treatment regimen that minimises the risk of hypoglycaemia; **and** • the person experiences early warning symptoms (awareness) of hypoglycaemia (refer to section	No change.	**Insulin-treated diabetes (except gestational diabetes)** A person is **not** fit to hold an **unconditional licence**: • if the person has insulin-treated diabetes. A **conditional licence** may be considered by the driver licensing authority subject to at least **annual review**, taking into consideration the nature of the driving task and information provided by an **endocrinologist / consultant physician specialising in diabetes** on whether the following criteria are met: • there is no recent history (generally at least six weeks) of a 'severe hypoglycaemic event' as assessed by the specialist; **and** • the person is following a treatment regimen that minimises the risk of hypoglycaemia; **and**	No change.

PRIVATE		COMMERCIAL	
2016	**Revised 2022**	**2016**	**Revised 2022**
3.2.1) or has a documented management plan for lack of early warning symptoms; **and** • there are no end-organ effects that may affect driving as per this publication. For private drivers who do not meet the above criteria, a **conditional licence** may be considered by the driver licensing authority taking into account the opinion of an **endocrinologist / consultant physician specialising in diabetes** and subject to regular specialist review.		• the person experiences early warning symptoms (awareness) of hypoglycaemia (refer to section 3.2 1); **and** • there are no end-organ effects that may affect driving as per this publication.	

3.5 Hearing loss and deafness

3.5.1 Inputs and review

Stakeholders who provided submissions are listed below. During the 2016 review, a working group was convened to develop changes to the standards. These appear to have been well received because we did not receive submissions regarding the medical standards. The Australian and New Zealand Society of Occupational Medicine noted in its submission that the information currently in *Assessing Fitness to Drive* was suitably detailed for guiding management of commercial vehicle drivers.

Findings from *Influence of chronic illness on crash involvement of motor vehicle drivers: 3rd edition* and other medical and fitness-to-drive literature informed the outcomes of the review.

Stakeholder submissions
Driver licensing authorities and transport regulators • Department of Transport (Vic)
Medical/health professional stakeholders • Australian and New Zealand Society of Occupational Medicine • Audiology Australia • Australian College of Audiology

3.5.2 Issues and recommendations

Evidence of crash risk

Previous reviews have considered removing the hearing standard altogether based on the lack of evidence of crash risk and considerations such as variability in ambient noise in trucks and the adaptability of people with long-term hearing loss. It was concluded that it was justified to continue to restrict the standard to commercial vehicle drivers only.

The current state-of-the-art literature reported in the MUARC report concluded that there is little evidence to support restricting drivers with a hearing impairment from holding an unconditional licence under private and commercial standards. It was noted that while the number of studies are limited, the quality of these studies was sufficient to draw the conclusions. It recommended that where hearing is required for driving in work-related settings or occupational environments, that those requirements could be managed through work health and safety regulations or other industry standards.

The advisory group considered this issue, discussing the standard's current dependencies and the challenges that would arise from removing the existing standards. No changes have been made to the medical standards to avoid creating a gap for managing the implications of hearing loss on occupational driving. In light of the available evidence, this position should be reviewed in the next medical standard update and consider developing other standards that may be better placed to manage hearing requirements for occupational tasks.

Vestibular disorders

In the 2016 review, consultation identified that acute vertigo is of minor importance in road safety. A literature search found little evidence that vertigo contributes to crashes. Therefore, the section was deleted and an advisory-only paragraph was added to 'Other neurological and neurodevelopmental conditions'.

A submission requested a reconsideration of this change. Consistent with the findings in the 2016 review, a targeted literature search could not identify sufficient evidence to draw findings on the impact of vestibular disorders on MVC or road safety risks (Appendix C – Vestibular disorders). No changes were made.

Definition of appropriate health professional

Information about the appropriate health professional to perform specific hearing tests is included. Stakeholders submitted that the definition of an audiologist required updating and the definition of an audiometrist's role when performing hearing tests be included. Definitions of health practitioners that can perform fitness to drive medical assessments are established through each state and territory's legislation (See section 5. Out-of-scope issues).

3.5.3 Implications for stakeholders

Driver licensing authorities

This chapter provides greater clarity on the role of suitable health professionals, which will assist in management and support consistency.

Health professionals

This chapter provides greater clarity on which health professionals can undertake which assessment.

Drivers

There are no significant changes that affect drivers.

3.5.4 Medical standards for licensing – hearing (revised 2022)

PRIVATE		COMMERCIAL	
2016	**Revised 2022**	**2016**	**Revised 2022**
There is no hearing standard for private vehicle drivers. Refer to *General assessment and management guidelines*.	No change.	Compliance with the standard should be clinically assessed initially. If the initial clinical assessment indicates possible hearing loss, the person should be referred for audiometry. A person is **not** fit to hold an **unconditional licence**: • if the person has unaided hearing loss greater than or equal to 40 dB in the better ear (averaged over the frequencies 0.5, 1, 2 and 3 KHz). A **conditional licence** may be considered by the driver licensing authority subject to **periodic review**,* taking into account the nature of the driving task and information provided by an **ear nose and throat specialist or audiologist**** as to whether: • the standard is able to be met with a hearing aid.*** If the standard is not able to be met with a hearing aid, further individualised assessment should be offered. A **conditional licence** may be considered by the driver licensing authority subject to **periodic review***, taking into account: • the nature of the driving task • information provided by an ear nose and throat specialist or audiologist;** **and** • the results of a practical driver assessment if required.	No change.

PRIVATE		COMMERCIAL	
2016	**Revised 2022**	**2016**	**Revised 2022**
		* Stable conditions may not require periodic review. ** For the purposes of this document an audiologist is a person registered with Audiology Australia (see <**www.audiology.asn.au**>. *** In some cases, noise amplification as a result of wearing hearing aids may lead to driver distraction and may warrant individualised assessment to determine fitness to drive without the hearing aid (refer to text on page 75).	

3.6 Musculoskeletal conditions

3.6.1 Inputs

A number of stakeholders provided submissions (refer to the list below).

The review of the musculoskeletal chapter involved consultation with Occupational Therapy Australia and its national driving committee. Findings from a targeted literature search supported this review (Appendix C – Chronic pain).

Stakeholder submissions
Driver licensing authorities and transport regulators • Department of Transport (Vic)
Medical/health professional stakeholders • Australian and New Zealand Society of Occupational Medicine • Occupational Therapy Australia
Patient/driver/carer stakeholders • Royal Automobile Club of Victoria • Amputees NSW • National Inclusive Transport Advocacy Network

3.6.2 Issues and recommendations

Information on vehicle modifications and use of prostheses

We received submissions requesting information on the use of prosthetic devices and a description of vehicle modification classes. This content has been developed to provide information on vehicle modifications and guidance on using prosthetic devices to support functional capacity to drive. This includes text to clarify that an individual does not need reassessment if upgrading a device of the same class they have already been assessed for.

One submission raised an issue that drivers with a physical disability are required to undergo cognitive testing as a matter of course in the practical driving assessment. Refer to Section 5. Out-of-scope issues.

Chronic pain

The guidance and standards in the musculoskeletal chapter support assessing functional capacity to perform the driving task that may be affected by a broad range of conditions including chronic pain. We received submissions requesting a standalone chapter and licensing standards for chronic pain. Some limited research has identified factors such as driving lapses, mental demand, physical demand and frustration levels of the driving task being affected for people experiencing chronic pain.

The review could not identify any clear road safety evidence to suggest that specific standards and conditional licence criteria should be set. A targeted literature search performed by MUARC could not identify a sufficient evidence base to draw findings on MVC or road safety risks due to chronic pain (Appendix C – Chronic pain). Analysis of international fitness-to-drive standards in comparable countries (UK, Ireland, New Zealand, Canada, United States) found no specific standards for chronic pain and (if mentioned) were managed under general functional assessment principles. Guidance on assessment and management of chronic pain, considering the functional and cognitive impacts on driving, has been included to support assessments under the existing musculoskeletal disorders standards.

3.6.3 Implications for stakeholders

Driver licensing authorities

The changes have no significant implications for driver licensing authorities.

Health professionals

This chapter provides further clarity regarding assessment, licensing criteria and periodic review, which will assist in management and support consistency.

Drivers

The new information on vehicle modifications and prostheses supports a fairer and more consistent process for assessing safe driving.

3.6.4 Medical standards for licensing – musculoskeletal conditions (revised 2022)

PRIVATE		COMMERCIAL	
2016	**Revised 2022**	**2016**	**Revised 2022**
A person is **not** fit to hold an **unconditional licence**: • if the driver's ability to perform the required driving activities (refer to Figure 12) is inadequate. A **conditional licence** may be considered by the driver licensing authority subject to periodic review, taking into account: • the nature of the driving task • information provided by the treating doctor on the benefit of treatments, prostheses or other devices (see Note below); or • a practical driver assessment if required*; and • any modification to the vehicle. * Motor cyclists with a musculoskeletal disability will require a practical driver assessment (refer to Part A section 2.3.1 Practical driver assessments).	A person is **not** fit to hold an **unconditional licence**: • if the driver's ability to perform the required driving activities (refer to section 5.2.1 Clinical assessment and Figure 12) is inadequate. A **conditional licence** may be considered by the driver licensing authority subject to **periodic review**, taking into account: • the nature of the driving task; **and** • information provided by the treating doctor on: – the stability of the condition; **and** – the benefit of treatments, prostheses or other devices (see footnote below); **or** – medications that may impair capacity for safe driving (refer to Part A, section 2.2.9 Drugs and driving). • a practical driver assessment if required;* **and** • any modification to the vehicle. ** Motorcyclists with a musculoskeletal disability will require a practical driver assessment (refer to Part A section 2.3.1 Practical driver assessments).*	A person is **not** fit to hold an **unconditional licence**: • if the driver's ability to perform the required driving activities (refer to Figure 12) is inadequate. A **conditional licence** may be considered by the driver licensing authority subject to **periodic review**, taking into account: • the nature of the driving task • information provided by the treating doctor on the benefit of treatments, prostheses or other devices (see Note below); or • the results of a practical driver assessment*; **and** • any modification to the vehicle. * All commercial vehicle drivers with a musculoskeletal disability will require a practical driver assessment (refer to Part A section 2.3.1 Practical driver assessments).	A person is **not** fit to hold an **unconditional licence**: • if the driver's ability to perform the required driving activities (refer to section 5.2.1 Clinical assessment and Figure 12) is inadequate. A **conditional licence** may be considered by the driver licensing authority subject to **periodic review**, taking into account: • the nature of the driving task; **and** • information provided by the treating doctor on: – the stability of the condition; **and** – the benefit of treatments, prostheses or other devices (see footnote below); **or** – medications that may impair capacity for safe driving (refer to Part A, section 2.2.9 Drugs and driving). • the results of a practical driver assessment;* **and** • any modification to the vehicle. ** All commercial vehicle drivers with a musculoskeletal disability will require a practical driver assessment (refer to Part A section 2.3.1 Practical driver assessments).*

3.7 Neurological conditions

3.7.1 Inputs and review

A number of stakeholders provided submissions (refer to the list below). The review of the neurological conditions chapter involved consultation with representatives from the Australian and New Zealand Association of Neurologists, the Epilepsy Society Australia, the Movement Disorder Society of Australia and New Zealand, the Royal Australian and New Zealand College of Psychiatrists, the Cognitive Dementia and Memory Service, and Occupational Therapy Australia. Findings from *Influence of chronic illness on crash involvement of motor vehicle drivers: 3rd edition* and other medical and fitness-to-drive studies informed the outcomes of the review.

Stakeholder submissions
Driver licensing authorities and transport regulators • Department for Infrastructure and Transport (SA) • Department of Transport (Vic) • Department of Transport and Main Roads (Qld) • Transport for NSW and Roads and Maritime Services
Medical/health professional stakeholders • Australian and New Zealand Society of Occupational Medicine • Australian and New Zealand Association of Neurologists • Epilepsy Society Australia • Movement Disorder Society of Australia and New Zealand • Occupational Therapy Australia • Royal Australasian College of Physicians • Royal Australian and New Zealand College of Psychiatrists • Royal College of Pathologists of Australasia • Stroke Society of Australia • Victorian Institute of Forensic Medicine
Patient/driver/carer stakeholders • Dementia Australia • Epilepsy Action Australia • MS Australia • Royal Automobile Club of Victoria

3.7.2 Dementia – issues and recommendations

A submission recommended specifying the degree and imminence of risk for individuals with dementia fitness to drive, opposed to highlighting a general risk. Drivers with dementia have a higher risk of deficits in driving skill and crashes compared with normal healthy age-matched controls. The underpinning road safety and performance studies are cited in the dementia chapter. However, the outcomes from these studies are variable and it is difficult to nominate a definitive increase in the degree of risk for motor vehicle crash or on-road performance failure rates. This variation underpins the individualised assessment approach provided by the standards, recognising that not all people with dementia should have their licences revoked or restricted. The listed impacts of dementia on driving ability are informed by these studies and expert opinion. More information on the evidence base underpinning the standards and their limitations is provided in AFTD (See Part A, section 1.5 Development and evidence base).

Diagnosis and implications of preclinical dementia and mild cognitive impairment

Submissions were received requesting guidance on the different stages of dementia (pre-clinical, prodromal/mild cognitive dementia [MCI], and dementia) when assessing fitness to drive. Information has been provided on the preclinical and prodromal/MCI stages, the relevance to the driving task and the evidence of crash risk. Clarification has been made that preclinical and prodromal dementia/MCI are not subject to the existing dementia standards. Guidance has been provided for the prodromal dementia/MCI clinical features that may warrant a more detailed assessment.

Non-progressive and reversible dementia

We received a submission in the public consultation round recommending that the dementia guidance detail the complexities and nuances associated with a diagnosis of dementia, as not all dementia is progressive. The submission highlighted cases of reversibility and dementia secondary to stroke, head injury, and in the context of alcohol related brain damage.

This recommendation will be addressed in the next AFTD review. Broad medical specialist consultation is required to understand the fitness to drive implications of non-progressive or reversible dementia and ensure clear assessment and management guidance is provided. This will examine the extent the existing guidance on Mild Cognitive Impairment and neurological standards (see AFTD - 6.3. Other neurological and neurodevelopmental conditions pg.161) may partly cover this recommendation. The neurological standards provide guidance on a range of disorders including Stroke (See AFTD page 163-4 and 172) and head injury (page 162 and 169).

3.7.3 Seizures and epilepsy – issues and recommendations

Epilepsy

The submission from the Australian and New Zealand Association of Neurologists and the Epilepsy Society of Australia recommended several updates to the seizure standards to reflect the low risk of seizure reoccurrence in some circumstances and to clarify the application of the existing standards. Changes were made to:

- outline when results of electroencephalography (EEG) is required for licensing decisions
- outline when resumption of an unconditional licence can be considered in low-risk scenarios
- clarify guidance for safe seizures

- clarify guidance for provoking factors
- provide guidance for situations where the individual does not follow medical advice or if clinical information is doubtful or unreliable
- clarify guidance on planned withdrawal and dose-reduction antiepileptic medications
- clarify guidance where multiple reductions to the default standard may be applicable.

We received a submission that noted that standards for other medical conditions allowed the treating physician to recommend a conditional licence once it is well controlled with treatment. It was queried whether epilepsy could be similarly managed. Specialist advice reiterated that the only way to assess that epilepsy is well controlled is to observe a minimum seizure-free period. It was noted that the current standards and non-driving periods are suitable for this purpose. No changes were made.

Childhood seizures

Submissions requested clarification on the appropriateness of the current age cut-off in the criteria for safe seizures and the review requirements for these individuals. Medical specialist advice noted that these criteria apply to the childhood-specific epilepsy syndromes that can naturally resolve before the minimum age of driving. The current age cut-off practically implements a five-year non-driving period that is suitable to manage the risk of reoccurrence for these seizure types in this age group. No change is made.

Reduced review for extended seizure-free periods

A submission requested guidance for considering review requirements when an individual taking medication has been seizure-free for 10 (private) or 20 (commercial) years. Development of a risk matrix was requested. Medical specialists noted that annual review periods for people with an extended seizure-free period offers less benefit because changes in the condition are generally notified to medical professionals and managed to the standards. Development of a risk matrix was not supported. No change is made.

Seizure-free periods and unconditional commercial licences

We received submissions requesting a review of the criteria that prevent reissuing an unrestricted commercial licence after an extensive seizure-free period and treatment cessation. The Australian and New Zealand Association of Neurologists and the Epilepsy Society of Australia provided an update on reductions for first seizures and acute symptomatic seizures, which include new criteria when an unconditional licence could be considered under the commercial standards. Medical specialist advice noted that in other circumstances, the risk from a seizure in a commercial driver is unacceptably high such that strict monitoring is required. Advice noted that the risk of recurrence as a whole remains elevated compared with the general population.

We received a submission requesting clarification on how to assess a person who, after many years of not being treated with medication, has a seizure. Specialist advice noted that applying the existing guidelines adequately handles these cases. It was reiterated that, depending on treatment and advice from a neurologist, an individual may fall under the ‘treated for the first time’ standard, the ‘previously well controlled’ standard or the default standard.

3.7.4 Other neurological and neurodevelopmental conditions – issues and recommendations

Stroke and transient ischaemic attack (TIA) non-driving periods

In 2012 several submissions requested clarification on stroke. The section was revised with clear non-driving periods (where there is no long-term neurological impairment) specified for private (four weeks) and commercial vehicle drivers (three months).

We received a number of submissions requesting clarification on these non-driving periods and requirements for specialist review before non-driving periods end. The joint submission from the Stroke Society of Australia and the Australian and New Zealand Association of Neurologists noted that once recovery has occurred, any deficits from the stroke will be non-progressive and hence, depending on meeting the necessary neurological and neuropsychological criteria, the person may resume driving without follow-up. An update to the private standards provides guidance on people who show no impairment and have been discharged from specialist care before the four-week non-driving period elapses.

We received a submission querying whether the advisory four-week non-driving period remains suitable to manage the risk of TIA under the commercial standards. The submission from the Stroke Society of Australia and the Australian and New Zealand Association of Neurologists noted that TIA almost never produces loss of consciousness, and it is an extremely uncommon cause of crashes. The risk of a subsequent stroke with modern medical therapy is about 5 per cent in the first three years and about half of that risk occurs in the first week.

This position is reinforced in the MUARC report, which found that the available evidence does not support a robust increase in risk of MVCs for drivers who have experienced stroke or a TIA. While stroke clearly prevents some individuals from driving altogether, individualised assessment and clinical judgement must continue to be used in assessing and advising individuals about their safety to return to driving after a stroke/TIA including their MVC risk. The report found that the evidence aligns with the current guidance for stroke and TIA in *Assessing Fitness to Drive*.

Space-occupying lesions including brain tumours

A submission was received stating that the current guidance on brain tumours is subjective and does not consider the risks that accompany different tumour types or grades. Guidance was requested reflecting the commensurate risk of seizures with each tumour stage and progression. Medical specialist advice noted the issues raised in the submission but did not agree that new standards could be applied to practically manage the seizure risk more effectively.

Subarachnoid Haemorrhage

We received a submission that recommended exclusion from licensing restrictions for certain types of subarachnoid haemorrhage (SAH). The Stroke Society of Australia and the Australian and New Zealand Association of Neurologists advised that excluded SAH should be limited to the cerebral convexity and be non traumatic/non aneurysmal, as they have a lower risk profile of sudden incapacity or causing other neurological impairments compared to other SAH. The exclusion is provided as a footnote provision to the existing standards with corresponding guidance included in this chapter.

Autism spectrum disorder (ASD)

Submissions were received to provide further information or consider medical standards for people with ASD. A targeted literature review identified studies that suggest drivers with ASD drive differently from their neurotypical counterparts, noting shortcomings in tactical driving skills (Appendix C – Autism spectrum disorder). However, the extent to which this affected their own safety or the safety of other road users is unclear and there was not enough information to evaluate any MVC or other road safety risk. Specialist advice noted that the variability of ASD characteristics and the degree of severity were too diverse for a specific standard. The current developmental disorder medical standards are suitable to assess these individuals. No changes to the current standards were made and contextual information is provided in section 6.3 Other neurological and neurodevelopmental conditions.

Intellectual disability and other neurodevelopmental disorders

In the 2016 review, the criteria for intellectual disability were deleted and included under 'other neurological conditions'. It was noted that people with intellectual and other disabilities are given the opportunity to undertake the usual testing for driver licensing, including knowledge testing, to enter the graduated driver licensing system, which is appropriate to determine their suitability to hold a licence.

A submission was received requesting the reinstatement of the intellectual impairment thresholds. This submission noted that people with intellectual impairment who pass the driver knowledge test but could not pass on-road assessments due to the nature of their condition, devoted considerable resources to attempt to do so. Medical specialist advice noted that IQ and functional capacity do not have perfect correlation and it is difficult to use IQ thresholds to predict what someone is capable of except at the more extreme levels of impairment. Reinstatement of the standards was not supported. No changes were made.

We received a submission in the public consultation round recommending that intellectual and other neurodevelopmental disorders be moved to the psychiatric disorders chapter and that the existing categorisation could potentially lead to confusion, as typically intellectual disabilities including autism spectrum disorder (ASD) are coded as psychiatric conditions within the International Classification of Diseases (ICD).

This recommendation will be addressed in the next AFTD review. Broad medical specialist consultation will be required to consider appropriate separation of the current standards. (Other neurological conditions page 166 and 175) Expert advice will be required for drafting standards that retain necessary guidance for neurological conditions in the neurological disorders chapter and for separate standards covering intellectual and other neurodevelopmental disorders in the psychiatric disorder chapter.

3.7.5 Implications for stakeholders

Driver licensing authorities

The epilepsy and seizure criteria have been made clearer, which should improve administrative efficiency. Assessment guidance for ASD will assist decision making for these cases. Relaxing the requirements to review drivers after a stroke and excluding some types of subarachnoid haemorrhage will ease the administrative burden for driver licensing authorities.

Health professionals

The epilepsy and seizure criteria have been made clearer, which should improve assessment and management of patients. Assessment guidance for ASD will assist assessment for these cases. Relaxing the requirements to review drivers after a stroke and excluding some types of subarachnoid haemorrhage will ease the burden for assessing these patients.

Drivers

The epilepsy and seizure criteria allow a return to unconditional licensing for some patients, reducing unnecessary restrictions on these drivers. Relaxing the requirements for drivers after a stroke and excluding some types of subarachnoid haemorrhage will reduce the burden of assessments for drivers.

3.7.6 Medical standards for licensing – dementia and other cognitive impairment (revised 2022)

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2016	**Revised 2022**	**2016**	**Revised 2022**
Dementia A person is **not** fit to hold an **unconditional licence**: • if the person has a diagnosis of dementia. A **conditional licence** may be considered by the driver licensing authority subject to at least **annual review**, taking into account: • the nature of the driving task; • information provided by the **treating doctor** regarding the level of impairment of any of the following: visuospatial perception, insight, judgement, attention, comprehension, reaction time or memory and the likely impact on driving ability; **and** • the results of a practical driver assessment if required (refer to Part A section 2.3.1 Practical driver assessments). The opinion of an appropriate specialist may also be considered.	**Dementia** A person is **not** fit to hold an **unconditional licence**: • if the person has a diagnosis of dementia*. A **conditional licence** may be considered by the driver licensing authority subject to at least **annual review**, taking into account: • the nature of the driving task; • information provided by the **treating doctor** regarding the level of impairment of any of the following: visuospatial perception, insight, judgement, attention, comprehension, reaction time or memory and the likely impact on driving ability; **and** • the results of a practical driver assessment if required (refer to Part A section 2.3.1 Practical driver assessments). The opinion of an appropriate specialist may also be considered. * This does not include preclinical or prodromal/MCI stages of the disease unless impairments are present as described in section 6.1.2. General assessment and management guidelines.	**Dementia** A person is **not** fit to hold an **unconditional licence:** • if the person has a diagnosis of dementia. A **conditional licence** may be considered by the driver licensing authority subject to at least **annual review**, taking into account: • the nature of the driving task; • information provided by an **appropriate specialist** regarding the level of impairment of any of the following: visuospatial perception, insight, judgement, attention, comprehension, reaction time or memory and the likely impact on driving ability; **and** • the results of a practical driver assessment if required (refer to Part A section 2.3.1 Practical driver assessments).	**Dementia** A person is **not** fit to hold an **unconditional licence:** • if the person has a diagnosis of dementia*. A **conditional licence** may be considered by the driver licensing authority subject to at least **annual review**, taking into account: • the nature of the driving task; • information provided by an **appropriate specialist** regarding the level of impairment of any of the following: visuospatial perception, insight, judgement, attention, comprehension, reaction time or memory and the likely impact on driving ability; **and** • the results of a practical driver assessment**. * This does not include preclinical or prodromal/MCI stages of the disease unless impairments are present as described in section 6.1.2. General assessment and management guidelines. ** All commercial vehicle drivers will require a practical driver assessment (refer to Part A section 2.3.1 Practical driver assessments)

MEDICAL STANDARDS FOR LICENSING – epilepsy (2016/revised 2022)

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2016	**Revised 2022**	**2016**	**Revised 2022**
All cases (default standard) A person is **not** fit to hold an **unconditional licence**: • if the person has experienced a seizure. A **conditional licence** may be considered by the driver licensing authority subject to at least **annual review**,* taking into account information provided by the **treating doctor** as to whether the following criteria are met: • there have been no seizures for at least **12 months**;** **and** • the person follows medical advice, including adherence to medication if prescribed or recommended. * If a driver undergoing treatment for epilepsy has experienced an extended seizure-free period (more than 10 years) the driver licensing authority may consider reduced review requirements based on independent specialist advice (refer to section 3.3.7 Independent experts/panels). ** Shorter seizure-free periods may be considered by the driver licensing authority if the person's situation matches one of those in the remainder of this table.		**All cases (default standard)** A person is **not** fit to hold an **unconditional licence**: • if the person has experienced a seizure. A **conditional licence** may be considered by the driver licensing authority subject to at least **annual review**,* taking into account information provided by a **specialist in epilepsy** as to whether the following criteria are met: • there have been no seizures for at least **10 years**;** **and** • an EEG conducted in the last six months has shown no epileptiform activity and no other EEG conducted in the last 12 months has shown epileptiform activity; **and** • the person follows medical advice, including adherence to medication if prescribed or recommended. * If a driver undergoing treatment for epilepsy has experienced an extended seizure-free period (more than 20 years) the driver licensing authority may consider reduced review requirements based on independent specialist advice (refer to section 3.3.7 Role of independent experts/panels). ** Shorter seizure-free periods may he considered by the driver licensing authority if the person's situation matches one of those in tables that follow.	**All cases (default standard)** A person is **not** fit to hold an **unconditional licence**: • if the person has experienced a seizure. A **conditional licence** may be considered by the driver licensing authority subject to at least **annual review**,* taking into account information provided by a **specialist in epilepsy** as to whether the following criteria are met: • there have been no seizures for at least **10 years**;** **and** • an EEG conducted in the last 6 months has shown no epileptiform activity and no other EEG conducted in the last 12 months has shown epileptiform activity***; **and** • the person follows medical advice, including adherence to medication if prescribed or recommended. ** If a driver undergoing treatment for epilepsy has experienced an extended seizure free period (more than 20 years) the driver licensing authority may consider reduced review requirements based on independent specialist advice (refer to section 3.3.7 Role of independent experts/panels).* *** Shorter seizure-free periods may he considered by the driver licensing*

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2016	**Revised 2022**	**2016**	**Revised 2022**
			authority if the person's situation matches one of those in the tables that follow. **** This is only required for initial granting of the conditional licence and not for annual review*
First seizure A **conditional licence** may be considered by the driver licensing authority subject to at least **annual review**, taking into account information provided by the **treating doctor** as to whether the following criteria are met: • there have been no further seizures (with or without medication) for at least **six months**.	**First seizure (of any type)** A **conditional licence** may be considered by the driver licensing authority subject to at least **annual review**, taking into account information provided by the **treating doctor** as to whether the following criterion is met: • there have been no further seizures (with or without medication) for at least **6 months**. Resumption of an **unconditional licence** may be considered by the driver licensing authority, taking into account information provided by the **treating doctor** as to whether the following criteria are met: • antiseizure medication has not been prescribed in the previous 12 months; and • there have been no seizures for at least 2 years.	**First seizure** A **conditional licence** may be considered by the driver licensing authority subject to at least **annual review**, taking into account information provided by a **specialist in epilepsy** as to whether the following criteria are met: • there have been no seizures for at least **five years** (with or without medication); **and** • an EEG conducted in the last six months has shown no epileptiform activity and no other EEG conducted in the last 12 months has shown epileptiform activity.	**First seizure (of any type)** A **conditional licence** may be considered by the driver licensing authority subject to at least **annual review**, taking into account information provided by a **specialist in epilepsy** as to whether the following criteria are met: • there have been no seizures for at least **5 years** (with or without medication); **and** • an EEG conducted in the last 6 months has shown no epileptiform activity and no other EEG conducted in the last 12 months has shown epileptiform activity*. Resumption of an **unconditional licence** may be considered by the driver licensing authority, taking into account information provided by a **specialist in epilepsy** as to whether the following criteria are met: • antiseizure medication has not been prescribed in the previous 12 months • there have been no seizures for at least **10 years**; **and** • an EEG conducted in the last 6 months has shown no epileptiform activity and no other EEG conducted in the last 12 months has shown epileptiform activity.

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			** This is only required for initial granting of the conditional licence and not for annual review*
Acute symptomatic seizures A **conditional licence** may be considered by the driver licensing authority subject to at least **annual review**, taking into account information provided by the **treating doctor** as to whether the following criterion is met**:** • there have been no further seizures for at least **six months**. If there have been two or more separate transient disorders causing acute symptomatic seizures, the default standard applies.	**Acute symptomatic seizures** A **conditional licence** may be considered by the driver licensing authority subject to at least **annual review**, taking into account information provided by the **treating doctor** as to whether the following criterion is met: • there have been no further seizures for at least **6 months**. If there have been two or more separate transient disorders causing acute symptomatic seizures, the default standard applies. Resumption of an **unconditional licence** may be considered by the driver licensing authority, taking into account information provided by the **treating doctor** as to whether the following criteria are met: • antiseizure medication has not been prescribed in the past 12 months; and • there have been no seizures for at least 2 years.	**Acute symptomatic seizures** A **conditional licence** may be considered by the driver licensing authority subject to at least **annual review**, taking into account information provided by a **specialist in epilepsy** as to whether the following criteria are met: • there have been no further seizures for at least **12 months**; **and** • an EEG conducted in the last six months has shown no epileptiform activity and no other EEG conducted in the last 12 months has shown epileptiform activity. If there have been two or more separate transient disorders causing acute symptomatic seizures, the default standard applies.	**Acute symptomatic seizures** A **conditional licence** may be considered by the driver licensing authority subject to at least **annual review**, taking into account information provided by a **specialist in epilepsy** as to whether the following criteria are met: • there have been no further seizures for at least **12 months**; **and** • an EEG conducted in the last 6 months has shown no epileptiform activity and no other EEG conducted in the last 12 months has shown epileptiform activity*. If there have been two or more separate transient disorders causing acute symptomatic seizures, the default standard applies. Resumption of an **unconditional licence** may be considered by the driver licensing authority, taking into account information provided by a **specialist in epilepsy** as to whether the following criteria are met: • antiseizure medication has not been prescribed in the past 12 months • there have been no seizures for at least **10 years**; **and** • an EEG conducted in the last 6 months has shown no epileptiform activity and no other EEG conducted

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			in the last 12 months has shown epileptiform activity. ** This is only required for initial granting of the conditional licence and not for annual review*
History of a benign seizure or epilepsy syndrome usually limited to childhood A history of a benign seizure or epilepsy syndrome usually limited to childhood does not disqualify the person from holding an unconditional licence, as long as there have been no seizures after 11 years of age. If a seizure has occurred after 11 years of age, the default standard (refer above) applies unless the situation matches one of those listed below.	No change.	**History of a benign seizure or epilepsy syndrome usually limited to childhood** A history of a benign seizure or epilepsy syndrome usually limited to childhood does not disqualify the person from holding an unconditional licence, as long as there have been no seizures after 11 years of age. If a seizure has occurred after 11 years of age, the default standard (refer above) applies unless the situation matches one of those listed below.	No change.
Epilepsy treated for the first time A **conditional licence** may be considered by the driver licensing authority subject to at least **annual review**, taking into account information provided by the **treating doctor** as to whether the following criteria are met: • the person has been treated for at least **six months**; **and** • there have been no seizures in the preceding **six months**; **and** • if any seizures occurred after the start of treatment, they happened only in the first **six months** after starting treatment and not in the last **six months**; **and** • the person follows medical advice,	No change.	**Epilepsy treated for the first time** There is no reduction. The default standard applies.	No change.

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including adherence to medication.			
'Safe' seizures A **conditional licence** may be considered by the driver licensing authority subject to at least **annual review**, taking into account information provided by the **treating doctor** as to whether the following criteria are met: • 'safe' seizures have been present for at least **two years**; **and** • there have been no seizures of other type for at least **two years**; **and** • the person follows medical advice with respect to medication adherence. If the above criteria are not met, the default standard applies.	**'Safe' seizures** Following text inserted in condition description: Isolated infrequent myoclonic jerks (without impaired awareness) may be considered safe in the context of no seizures of any other type for more than 12 months. No other changes.	**'Safe' seizures** There is no reduction. The default standard applies.	**'Safe' seizures** No change.
Sleep-only seizures A **conditional licence** may be considered by the driver licensing authority, despite continuing seizures only during sleep and subject to at least **annual review**, taking into account information provided by the treating doctor as to whether the following criteria are met: • there have been no previous seizures while awake; **and** • the first sleep-only seizure was at least **12 months ago**; **and** • the person follows medical advice, including adherence to medication if prescribed. **OR**	No change.	**Sleep-only seizures** There is no reduction. The default standard applies.	No change.

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• there have been previous seizures while awake but not in the preceding **two years**; **and** • sleep-only seizures have been occurring for at least **two years**; **and** • the person follows medical advice, Including adherence to medication if prescribed. If the above criteria are not met, the default standard applies.			
Epilepsy treated by surgery (where the primary goal of surgery is the elimination of epilepsy) A **conditional licence** may be considered by the driver licensing authority subject to at least **annual review**, taking into account information provided by the **treating doctor** as to whether the following criterion is met: • there have been no seizures for at least **12 months** following surgery. The vision standard may also apply if there is a visual field defect. If medication is withdrawn, refer to *Planned withdrawal of all antiepileptic medication*.	**Epilepsy treated by surgery (where the primary goal of surgery is the elimination of epilepsy)** No change.	**Epilepsy treated by surgery (where the primary goal of surgery is the elimination of epilepsy)** A **conditional licence** may be considered by the driver licensing authority subject to at least **annual review**, taking into account information provided by a **specialist in epilepsy** as to whether the following criteria are met: • there have been no seizures for at least **10 years**; **and** • an EEG conducted in the last six months has shown no epileptiform activity and no other EEG conducted in the last 12 months has shown epileptiform activity; **and** • the person follows medical advice with respect to medication adherence. The vision standard may also apply if there is a visual field defect. If any antiepileptic medication is to be withdrawn, the person will no longer meet the criteria to hold a conditional licence.	**Epilepsy treated by surgery (where the primary goal of surgery is the elimination of epilepsy)** A **conditional licence** may be considered by the driver licensing authority subject to at least **annual review**, taking into account information provided by a **specialist in epilepsy** as to whether the following criteria are met: • there have been no seizures for at least 10 years; **and** • an EEG conducted in the last 6 months has shown no epileptiform activity and no other EEG conducted in the last 12 months has shown epileptiform activity*; **and** • the person follows medical advice with respect to medication adherence. The vision standard may also apply if there is a visual field defect. If any antiseizure medication is to be withdrawn, the person will no longer meet the criteria to hold a conditional licence. ** This is only required for initial granting of the conditional licence and not for*

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			annual review.
Seizure in a person whose epilepsy was previously well controlled A **conditional licence** may be considered by the driver licensing authority subject to at least **annual review**, taking into account information provided by the **treating doctor** as to whether the following criteria are met: • the seizure was caused by an identified provoking factor; **and** • the provoking factor can be reliably avoided; **and** • the provoking factor has not caused previous seizures; **and** • there have been no seizures for at least **four weeks**; **and** • the person follows medical advice, including adherence to medication (periodic serum drug level measurements may be required) **OR** • no cause for the seizure was identified; **and** • there have been no seizures for at **least three months**; **and** • the person follows medical advice, including adherence to medication. If the person has experienced one or more seizures during the 12 months leading up to the last seizure, there is no reduction and the default standard applies.	**Seizure in a person** under treatment **whose epilepsy was previously well controlled** A **conditional licence** may be considered by the driver licensing authority subject to at least **annual review**, taking into account information provided by the **treating doctor** as to whether the following criteria are met: • the seizure was caused by an identified provoking factor*; **and** • the provoking factor can be reliably avoided; **and** • the provoking factor has not caused previous seizures; **and** • there have been no seizures for at least **4 weeks**; **and** • the person follows medical advice, including adherence to medication (periodic serum drug-level measurements may be required) and avoidance of provoking factors **OR** • no cause for the seizure was identified; **and** • there have been no seizures for at **least 3 months**; **and** • the person follows medical advice, including adherence to medication. If the person has experienced one or more seizures during the 12 months leading up to the last seizure, there is no	**Seizure in a person whose epilepsy was previously well controlled** There is no reduction. The default standard applies.	**Seizures in a person under treatment whose epilepsy was previously well controlled** No change.

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	reduction and the default standard applies. ** Sleep deprivation is not considered a provoking factor for the purpose of the standards.*		
Unreliable or doubtful clinical information Not included.	**Unreliable or doubtful clinical information** If the **treating doctor** doubts the reliability of the relevant clinical information (e.g. unreported seizures, likely due to the person not recognising the occurrence of seizures or deliberately not reporting seizures), the person is **not fit drive**. Refer to page **Error! Bookmark not defined.**.	**Unreliable or doubtful clinical information** Not included.	**Unreliable or doubtful clinical information** If the specialist in epilepsy doubts the reliability of the relevant clinical information (e.g. Unreported seizures, likely due to the person not recognising the occurrence of seizures or deliberately not reporting seizures), the person is not fit to drive. Refer to page 144.
Planned withdrawal of one or more anti-epileptic medications in a person who satisfies the standard to hold a conditional licence The person should not drive: • during the period in which the dose is being tapered; and • for three months after the last dose. If seizures recur, the driver licensing authority may allow the person to resume driving on a **conditional licence** subject to at least **annual review**, taking into account information provided by the **treating doctor** as to whether the following criteria are met: • the previously effective medication	**Planned withdrawal of one or more antiepileptic medications in a person who satisfies the standard to hold a conditional licence** The person should not drive: • during the period in which the dose is being tapered; and • for 3 months after the last dose.* If seizures recur, the driver licensing authority may allow the person to resume driving on a **conditional licence** subject to at least **annual review**, taking into account information provided by the **treating doctor** as to whether the following criteria are met: • the previously effective medication	**Planned withdrawal of one or more anti-epileptic medications in a person who satisfies the standard to hold a conditional licence** If anti-epileptic medication is to be withdrawn, the person will no longer meet the criteria to hold a conditional licence. Driving may continue only after consideration by the driver licensing authority under the Exceptional cases standard.	No change.

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regime is resumed; **and** • there have been no seizures for four weeks after resuming the medication regime; **and** • the person follows medical advice, including adherence to medication. If seizures do not recur, the person may become eligible for an unconditional licence (refer to *Resumption of unconditional licence*).	regimen is resumed; **and** • there have been no seizures for 4 weeks after resuming the medication regimen; **and** • the person follows medical advice, including adherence to medication. If seizures do not recur, the person may become eligible for an unconditional licence (refer to *Resumption of unconditional licence* below). ** If a drug is being withdrawn as part of a switch from one drug to another (e.g. to reduce teratogenic risk), the 3-month non-driving period still applies.*		
Seizure causing a crash If a person has experienced a crash as a result of a seizure, the default seizure-free non-driving period applies, even if they fall into one of the seizure categories that allow a reduction.	No change.	**Seizure causing a crash** If a person has experienced a crash as a result of a seizure, the default seizure-free non-driving period applies, even if they fall into one of the seizure categories that allow a reduction.	No change.
Resumption of non-conditional licence The driver licensing authority may consider granting an **unconditional licence**, taking into account information provided by the **treating doctor** as to whether the following criteria are met: • the person has had no seizures for at least **five years**; **and** • has taken no antiepileptic medication for at least the preceding **12 months**.	**Resumption of unconditional licence** Unless outlined in the possible reductions above, the driver licensing authority may consider granting an **unconditional licence**, taking into account information provided by the **treating doctor** as to whether the following criteria are met: • the person has had no seizures for at least **5 years**; **and** • the person has taken no antiepileptic medication for at least the preceding **12 months**.	**Resumption of non-conditional licence** Refer to text, page 78. Resumption of an unconditional commercial licence will not be considered.	**Resumption of unconditional licence** Unless outlined in the possible reductions above, resumption of an unconditional commercial licence will not be considered. Refer to text, page 78.

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Exceptional cases Where a medical specialist experienced in the management of epilepsy considers that a person with seizures or epilepsy does not meet the standards above for a conditional licence but may be safe to drive, a conditional licence may be considered by the driver licensing authority, subject to at least **annual review**: • if the driver licensing authority, after considering information provided by a specialist experienced in the management of epilepsy, considers that the risk of a crash caused by a seizure is acceptably low; **and** • the person follows medical advice, including adherence to medication if prescribed or recommended.	**Exceptional cases** Where a **medical specialist** experienced in managing epilepsy considers that a person with seizures or epilepsy does not meet the standards in these tables for a **conditional licence** but may be safe to drive, a conditional licence may be considered by the driver licensing authority, subject to at least **annual review**: • if the driver licensing authority, after considering information provided by a specialist experienced in managing epilepsy, considers that the risk of a crash caused by a seizure is acceptably low; **and** • if the person follows medical advice, including adherence to medication if prescribed or recommended.	**Exceptional cases** Where a specialist in epilepsy considers that a person with seizures or epilepsy does not meet the standards above for a conditional licence but may be safe to drive, a conditional licence may be considered by the driver licensing authority, subject to at least **annual review**: • if the driver licensing authority, after considering information provided by a specialist experienced in the management of epilepsy, considers that the risk of a crash caused by a seizure is acceptably low; **and** • the person follows medical advice, including adherence to medication if prescribed or recommended.	**Exceptional cases** Where a **specialist in epilepsy** considers that a person with seizures or epilepsy does not meet the standards in these tables for a **conditional licence** but may be safe to drive, a conditional licence may be considered by the driver licensing authority, subject to at least **annual review**: • if the driver licensing authority, after considering information provided by a specialist experienced in managing epilepsy, considers that the risk of a crash caused by a seizure is acceptably low; **and** • if the person follows medical advice, including adherence to medication if prescribed or recommended.
Recommended reduction in dosage of anti-epileptic medication in a person who satisfies the standard to hold a conditional licence Driving may continue • if the dose reduction is due only to the presence of dose-related side effects and is unlikely to affect seizure control. In circumstances other than above, the person should not drive: • during the period in which the dose reduction is being made; **and** • for **3 months** after completion of the	**Recommended reduction in dosage of antiepileptic medication in a person who satisfies the standard to hold a conditional licence** Driving may continue: • if the dose reduction is due only to the presence of dose-related side effects and is unlikely to affect seizure control; or • if the dose is being reduced after an increase due to a temporary situation that has now resolved (e.g. pregnancy) to the dose that was effective before the increase.	**Recommended reduction in dosage of anti-epileptic medication in a person who satisfies the standard to hold a conditional licence** Driving may continue: • if the dose reduction is due only to the presence of dose-related side effects and is unlikely to result in a seizure. In circumstances other than the above, the person will no longer meet the criteria to hold a conditional licence.	**Recommended reduction in dosage of antiepileptic medication in a person who satisfies the standard to hold a conditional licence** Driving may continue: • if the dose reduction is due only to the presence of dose-related side effects and is unlikely to result in a seizure; or • if the dose is being reduced after an increase due to a temporary situation that has now resolved (e.g. pregnancy) to the dose that was effective before the increase.

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dose reduction. If seizures recur, the driver licensing authority may allow the person to resume driving on a **conditional licence** subject to at least **annual review**, taking into account information provided by the **treating doctor** as to whether the following criteria are met: • the previously effective medication dose is resumed; **and** • there have been no seizures for **4 weeks** after resuming the previously effective dose; **and** • the person follows medical advice, including adherence to medication.	In circumstances other than above, the person should not drive: • during the period in which the dose reduction is being made; **and** • for **3 months** after completing the dose reduction. If seizures recur, the driver licensing authority may allow the person to resume driving on a **conditional licence** subject to at least **annual review**, taking into account information provided by the **treating doctor** as to whether the following criteria are met: • the previously effective medication dose is resumed; **and** • there have been no seizures for **4 weeks** after resuming the previously effective dose; **and** • the person follows medical advice, including adherence to medication.		In circumstances other than the above, the person will no longer meet the criteria to hold a conditional licence.

MEDICAL STANDARDS FOR LICENSING – Other neurological and neurodevelopmental conditions (2016/revised 2022)

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Aneurysms (unruptured intracranial aneurysms and other vascular malformations of the brain) A person is **not** fit to hold an **unconditional licence**: • if the person has an unruptured intracranial aneurysm or other vascular malformation at high risk of major symptomatic haemorrhage. A **conditional licence** may be considered by the driver licensing authority subject to **periodic review**, taking into account the nature of the driving task and information provided by an **appropriate specialist** regarding: • the response to treatment. If treated surgically, the intracranial surgery advice applies (page 94). If the person has had a seizure, the seizure and epilepsy standards apply (refer to section 6.2 Seizures and epilepsy)	No change.	**Aneurysms (unruptured intracranial aneurysms and other vascular malformations of the brain)** A person is **not** fit to hold an **unconditional licence**: • if the person has an unruptured intracranial aneurysm or other vascular malformation. A **conditional licence** may be considered by the driver licensing authority subject to **annual review**, taking into account the nature of the driving task and information provided by an **appropriate specialist** regarding: • the risk of major symptomatic haemorrhage; **and** • the response to treatment. If treated surgically, the intracranial surgery advice applies (page 94). If the person has had a seizure, the seizure and epilepsy standards apply (refer to section 6.2 Seizures and epilepsy).	No change.

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Cerebral palsy A person is **not** fit to hold an **unconditional licence:** • if the person has cerebral palsy producing significant impairment of any of the following: visuospatial perception, insight, judgement, attention, reaction time, sensation, muscle power, coordination, vision (including visual fields). A **conditional licence** may be considered by the driver licensing authority, taking into account: • the nature of the driving task • information provided by the **treating doctor** regarding the likely impact of the neurological impairment on driving ability • results of a practical driver assessment if required (refer to Part A section 4.9 Practical driver assessments) • the need for vehicle modifications. Periodic review is not required if the condition is static.	No change.	**Cerebral palsy** A person is **not** fit to hold an **unconditional licence:** • if the person has cerebral palsy producing significant impairment of any of the following: visuospatial perception, insight, judgement, attention, reaction time, sensation, muscle power, coordination, vision (including visual fields). A **conditional licence** may be considered by the driver licensing authority, taking into account: • the nature of the driving task • information provided by an **appropriate specialist** regarding the likely impact of the neurological impairment on driving ability • results of a practical driver assessment if required (refer to Part A section 4.9 Practical driver assessments) • the need for vehicle modifications. Periodic review is not required if the condition is static.	No change.

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Head injury A person is **not** fit to hold an **unconditional licence**: • if the person has had head injury producing significant impairment of any of the following: visuospatial perception, insight, judgement, attention, comprehension, reaction time, memory, sensation, muscle power, coordination, vision (including visual fields). A **conditional licence** may be considered by the driver licensing authority, taking into account: • the nature of the driving task; • information provided by the **treating doctor** regarding the likely impact of the neurological impairment on driving ability and the presence of other disabilities that may impair driving as per this publication; • the results of neuropsychological testing if indicated; **and** • the results of a practical driver assessment if required. Periodic review is not required if the condition is static. If a seizure has occurred, refer to section 6.2 Seizures and epilepsy.	No change.	**Head injury** A person is **not** fit to hold an **unconditional licence**: • if the person has had head injury producing significant impairment of any of the following: visuospatial perception, insight, judgement, attention, comprehension, reaction time, memory, sensation, muscle power, coordination, vision (including visual fields). A **conditional licence** may be considered by the driver licensing authority, taking into account: • the nature of the driving task; • information provided by an **appropriate specialist** regarding the likely impact of the neurological impairment on driving ability and the presence of other disabilities that may impair driving as per this publication; • the results of neuropsychological testing if indicated; **and** • the results of a practical driver assessment if required. Periodic review is not required if the condition is static. A person is **not** fit to hold an **unconditional licence**: • if they have a high risk of post traumatic epilepsy [penetrating brain injury, brain contusion, subdural haematoma, loss of consciousness/alteration of consciousness or post-traumatic	No change.

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		amnesia greater than 24 hours. A **conditional licence** may be considered by the driver licensing authority subject to at least **annual review**, taking into account information provided by the **treating doctor** as to whether the following criteria are met: • the person has had no seizures for at least **12 months**. If a seizure has occurred, refer to section 6.2 Seizures and epilepsy.	
Intracranial surgery **A person should not drive for six months following supratentorial surgery or retraction of the cerebral hemispheres** (this is advisory only). If there are seizures or long-term neurological deficits, refer to section 6.2 Seizures and epilepsy or page 98.	No change.	**Intracranial surgery** **A person should not drive for 12 months following supratentorial surgery or retraction of the cerebral hemispheres** (this is advisory only). If there are seizures or long-term neurological deficits, refer to section 6.2 Seizures and epilepsy or page 98.	No change.
Ménière's disease Refer to the text.	**Ménière's disease** No change.	**Ménière's disease** Refer to the text. A person requires individualised assessment by an ENT specialist.	**Ménière's disease** No change.
Neuromuscular conditions (peripheral neuropathy, muscular dystrophy, etc.) A person is **not** fit to hold an **unconditional licence**: • if the person has peripheral neuropathy, muscular dystrophy or any other neuromuscular disorder that significantly impairs muscle power, sensation or coordination.	No change.	**Neuromuscular conditions (peripheral neuropathy, muscular dystrophy, etc.)** A person is **not** fit to hold an **unconditional licence**: • if the person has peripheral neuropathy, muscular dystrophy or any other neuromuscular disorder that significantly impairs muscle power, sensation or coordination.	No change.

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A **conditional licence** may be considered by the driver licensing authority subject to at least **annual review**, taking into account: • the nature of the driving task • information provided by the **treating doctor** regarding the likely impact of the impairment on driving ability • the results of a practical driver assessment if required (refer to Part A Practical driver assessments) • the need for vehicle modification.		A **conditional licence** may be considered by the driver licensing authority subject to at least **annual review**, taking into account: • the nature of the driving task; • information provided by an **appropriate specialist** regarding the likely impact of the impairment on driving ability • the results of a practical driver assessment if required (refer to Part A Practical driver assessments) • the need for vehicle modification.	

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Parkinson's disease A person is **not** fit to hold an **unconditional licence**: • if the person has Parkinson's disease with significant impairment of movement or reaction time or the onset of dementia. A **conditional licence** may be considered by the driver licensing authority subject to at least **annual review**, taking into account: • the nature of the driving task • information provided by the **treating doctor** regarding the likely impact of the neurological impairment on driving ability and the response to treatment • the results of a practical driver assessment if required (refer to Part A section 4.9 Practical driver assessments).	No change.	**Parkinson's disease** A person is **not** fit to hold an **unconditional licence**: • if the person has Parkinson's disease. A **conditional licence** may be considered by the driver licensing authority subject to at least **annual review**, taking into account: • the nature of the driving task • information provided by an **appropriate specialist** regarding the likely impact of the neurological impairment on driving ability and the response to treatment; • the results of a practical driver assessment if required (refer to Part A section 4.9 Practical driver assessments).	No change.

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Multiple sclerosis A person is **not** fit to hold an **unconditional licence**: • if the person has multiple sclerosis and significant impairment of any of the following: visuospatial perception, insight, judgement, attention, comprehension, reaction time, memory, sensation, muscle power, coordination, vision (including visual fields). A **conditional licence** may be considered by the driver licensing authority subject to at least **annual review**, taking into account: • the nature of the driving task • information provided by the **treating doctor** regarding the likely impact of the neurological impairment on driving ability • the results of a practical driver assessment if required (refer to Part A section 4.9 Practical driver assessments); **and** • the need for vehicle modification.	No change.	**Multiple sclerosis** A person is **not** fit to hold an **unconditional licence**: • if the person has multiple sclerosis. A **conditional licence** may be considered by the driver licensing authority subject to at least **annual review**, taking into account: • the nature of the driving task • information provided by an **appropriate specialist** regarding the level of impairment of any of the following: visuospatial perception, insight, judgement, attention, comprehension, reaction time, memory, sensation, muscle power, coordination, vision (including visual fields) and the likely impact on driving ability • the results of a practical driver assessment if required (refer to Part A section 4.9 Practical driver assessments); **and** • the need for vehicle modification.	**No change**

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Space-occupying lesions (including brain tumours) A person is **not** fit to hold an **unconditional licence**: • if the person has had a space-occupying lesion that results in significant impairment of any of the following: visuospatial perception, insight, judgement, attention, comprehension, reaction time, memory, sensation, muscle power, coordination and vision (including visual fields). A **conditional licence** may be considered by the driver licensing authority subject to **periodic review**, taking into account: • the nature of the driving task • information provided by the **treating doctor** about the likely impact of the neurological impairment on driving ability • the results of a practical driver assessment if required (refer to Part A section 4.9 Practical driver assessments). If seizures occur, the standards for seizures and epilepsy apply (refer to section 6.2 Seizures and epilepsy). If surgically treated, the advice for intracranial surgery applies.		**Space-occupying lesions (including brain tumours)** A person is **not** fit to hold an **unconditional licence**: • if the person has had a space-occupying lesion. A **conditional licence** may be considered by the driver licensing authority subject to **annual review**, taking into account: • the nature of the driving task • information provided by **an appropriate specialist** about the level of impairment of any of the following: visuospatial perception, insight, judgement, attention, comprehension, reaction time, memory, sensation, muscle power, coordination and vision (including visual fields) and the likely impact on driving ability; **and** • the results of a practical driver assessment if required (refer to Part A section 4.9 Practical driver assessments). If seizures occur, the standards for seizures and epilepsy apply (refer to section 6.2 Seizures and epilepsy). If surgically treated, the advice for intracranial surgery applies.	

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Stroke **A person should not drive for at least four weeks following a stroke.** **Treatable causes of stroke should be identified and managed with reference to this standard.** The driver licensing authority may consider a return to driving on an **unconditional licence,** after at least **four weeks**, taking into account: • the nature of the driving task; • information provided by an **appropriate specialist** regarding the level of impairment of any of the following: visuospatial perception, insight, judgement, attention, comprehension, reaction time, memory, sensation, muscle power, coordination, vision (including visual fields). and the likely impact on driving ability; **and** • results of a practical driver assessment if required (refer to PART A, section 2.3.1 Practical driver assessments). The person does not require a conditional licence.	**Stroke** **A person should not drive for at least 4 weeks following a stroke.** **Treatable causes of stroke should be identified and managed with reference to this standard**. A person **may resume** driving **without licence restriction** or further review, **after at least 4 weeks,** if: • the person has no neurological deficit or only minor residual symptoms that **do not** cause functionally significant impairment relevant to the safe execution of driving of any of the following: – visuospatial perception, insight, judgement, attention, comprehension, reaction time, memory, sensation, muscle power, coordination or vision (including visual fields). The person **does not** require reassessment in relation to licensing if they meet the above criteria when discharged from specialist care **within 4 weeks** of the stroke. If the person requires post-stroke rehabilitation their functional deficits may indicate impacts on driving capacity.	**Stroke** **A person should not drive for at least three months following a stroke.** A person is **not** fit to hold an **unconditional licence**: • if the person has had a stroke. A **conditional licence** may be considered by the driver licensing authority after at least **three months** and subject to at least **annual review**, taking into account: • the nature of the driving task • information provided by an **appropriate specialist** regarding the level of impairment of any of the following: visuospatial perception, insight, judgement, attention, comprehension, reaction time, memory, sensation, muscle power, coordination or vision (including visual fields) and the likely impact on driving ability; **and** • the results of a practical driver assessment if required (refer to Part A section 2.3.1 Practical driver assessments).	No change.

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	Where a person has persistent functionally significant symptoms or deficits relevant to the safe execution of driving, the driver licensing authority may consider a return to driving on a **conditional licence**, taking into account: • the nature of the driving task: **and** • information provided by an **appropriate specialist** regarding the level of impairment of any of the following: – visuospatial perception, insight, judgement, attention, comprehension, reaction time, memory, sensation, muscle power, coordination or vision (including visual fields) and the likely impact on driving ability; **and** • the results of a practical driver assessment if required (refer to Part A, section **2.3.1 Practical driver assessments**). Periodic review is not usually required if the condition is static. Refer to the review requirements in sections 5. Musculoskeletal conditions, 6.2. Seizures and epilepsy, or 10. Vision and eye disorders if these standards apply.		

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2016	**Revised 2022**	**2016**	**Revised 2022**
Subarachnoid haemorrhage **A person should not drive for at least three months after a subarachnoid haemorrhage**. A person is **not** fit to hold an **unconditional licence**: • if the person has had a subarachnoid haemorrhage. A **conditional licence** may be considered by the driver licensing authority, after **three months** and subject to **periodic review**, taking into account: • the nature of the driving task; • information provided by the **treating doctor** about the level of impairment of any of the following: visuospatial perception, insight, judgement, attention, comprehension, reaction time, memory, sensation, muscle power, coordination and vision (including visual fields) and the likely impact on driving ability; **and** • the results of a practical driver assessment if required (refer to Part A section 4.9 Practical driver assessments).	**Subarachnoid haemorrhage** A person should not drive for **at least 3 months** after a subarachnoid haemorrhage*. A person is **not** fit to hold an **unconditional licence**: • if the person has had a subarachnoid haemorrhage*. A **conditional licence** may be considered by the driver licensing authority after **3 months** and subject to **periodic review**, taking into account: • the nature of the driving task; **and** • information provided by the **treating doctor** about the level of impairment of any of the following: visuospatial perception, insight, judgement, attention, comprehension, reaction time, memory, sensation, muscle power, coordination or vision (including visual fields) and the likely impact on driving ability; **and** • the results of a practical driver assessment if required (refer to Part A section **2.3.1. Practical driver assessments**). **This does not include a minor non-aneurysmal subarachnoid haemorrhage restricted to the cerebral convexity unless impairments are present - refer to Subarachnoid*	**Subarachnoid haemorrhage** **A person should not drive for at least six months after a subarachnoid haemorrhage**. A person is **not** fit to hold an **unconditional licence**: • if the person has had a subarachnoid haemorrhage. A **conditional licence** may be considered by the driver licensing authority, after **six months** and subject to **periodic review**, taking into account: • the nature of the driving task • information provided by an **appropriate specialist** about the level of impairment of any of the following: visuospatial perception, insight, judgement, attention, r comprehension; reaction time, memory, sensation, muscle power, coordination and vision (including visual fields) and the likely impact on driving ability; **and** • the results of a practical driver assessment if required (refer to Part A section 2.3.1 Practical driver assessments).	**Subarachnoid haemorrhage** A person should not drive for **at least 6 months** after a subarachnoid haemorrhage*. A person is **not** fit to hold an **unconditional licence**: if the person has had a subarachnoid haemorrhage*. A **conditional licence** may be considered by the driver licensing authority, after **6 months** and subject to **periodic review**, taking into account: • the nature of the driving task; **and** • information provided by an **appropriate specialist** about the level of impairment of any of the following: visuospatial perception, insight, judgement, attention, comprehension, reaction time, memory, sensation, muscle power, coordination or vision (including visual fields) and the likely impact on driving ability; **and** • the results of a practical driver assessment if required (refer to Part A section **2.3.1. Practical driver assessments**). **This does not include a minor non-aneurysmal subarachnoid haemorrhage restricted to the cerebral convexity unless impairments are present - refer to Subarachnoid haemorrhage on page **Error! Bookmark not defined.**

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	haemorrhage on page ***Error! Bookmark not defined.***		

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2016	**Revised 2022**	**2016**	**Revised 2022**
Transient ischaemic attacks **A person should not drive for at least two weeks following a TIA.** A conditional licence is not required.	No change.	**Transient ischaemic attacks** **A person should not drive for at least four weeks following a TIA.** A conditional licence is not required.	No change.
Other neurological conditions including intellectual and developmental disorders/disabilities A person is **not** fit to hold an **unconditional licence**: • if the person has a neurological disorder that significantly impairs any of the following: visuospatial perception, insight, judgement, attention, comprehension, reaction time, memory, sensation, muscle power, coordination and vision (including visual fields). A **conditional licence** may be considered by the driver licensing authority subject to **periodic review**, taking into account: • the nature of the driving task • information provided by the **treating doctor** about the likely impact of the neurological impairment on driving ability; **and** • the results of a practical driver assessment if required (refer to Part A section 2.3.1 Practical driver assessments). Periodic review may not be necessary if the condition is static.	**Other neurological conditions** including intellectual and developmental disorders/disabilities No change.	**Other neurological conditions** including intellectual and developmental disorders/disabilities A person is **not** fit to hold an **unconditional licence**: • if the person has a neurological disorder that significantly impair any of the following: visuospatial perception, insight, judgement, attention, comprehension, reaction time, memory, sensation, muscle power, coordination and vision (including visual fields). A **conditional licence** may be considered by the driver licensing authority subject to **periodic review**, taking into account: • the nature of the driving task • information provided by an **appropriate specialist** about the likely impact of the neurological impairment on driving ability; **and** • the results of a practical driver assessment if required (refer to Part A section 2.3.1 Practical driver assessments). Periodic review may not be necessary if the condition is static.	**Other neurological conditions** including intellectual and developmental disorders/disabilities No change.

3.8 Psychiatric conditions

3.8.1 Inputs and issues

A number of stakeholders provided submissions (refer to the list below).

The review of the psychiatric conditions chapter involved consultation with representatives from the Royal Australian and New Zealand College of Psychiatrists (RANZCP), and the Australian and New Zealand Association of Neurologists. RANZCP advised that the medical standards on psychiatric disorders are generally appropriate and are working reasonably well in practice. Findings from *Influence of chronic illness on crash involvement of motor vehicle drivers: 3rd edition* and other medical and fitness-to-drive studies informed the outcomes of the review.

Stakeholder submissions
Driver licensing authorities and transport regulators • Department of Transport (Vic) • Department of Transport and Main Roads (Qld) • Transport for NSW
Medical/health professional stakeholders • Australian and New Zealand Association of Neurologists • Australian and New Zealand Society of Occupational Medicine • Royal Australian College of General Practitioners • Royal Australasian College of Physicians • Royal Australian and New Zealand College of Psychiatrists

3.8.2 Issues and recommendations

Psychiatric conditions and driver assessment

In 2016, submissions were received requesting more detailed guidance on managing specific psychiatric conditions. However, no changes were made because the guidelines are oriented towards assessing the functional impact of disorders on a person's cognitive and behavioural status and particularly the person's insight, rather than specific disorders.

A number of submissions to this most recent review made similar requests for guidance and criteria for managing specific categories of psychiatric disorders including defined non-driving periods. A key finding from the MUARC report observed that no single category of disorder was associated with an increased MVC risk. Specialist advice reiterated the suitability of the current standards to manage and assess driving fitness for people with a psychiatric disorder. This is consistent with the findings from the 2016 review.

Stipulating non-driving periods was also considered to be inappropriate and is best determined through clinical judgement because treatment response is individualised and variable. Non-driving periods are to remain as determined on the physician's advice, but it was agreed that highlighting this advisory guidance would be appropriate.

Requests were made for information on the options for reporting individuals who are unwilling or unable to follow advice about restricting their driving. Edits were made to highlight this topic and to link it to the detailed reporting information in Part A which provides guidance and options for this issue.

In its initial submission, the RANZCP noted that only a significant new condition should require periodic review by a psychiatrist under the commercial standard. Stable, long-term conditions can be well managed by a general practitioner and do not require review by the consulting psychiatrist unless the general practitioner believes it is indicated. Similar requests have been made for other medical conditions, and there are circumstances in the treatment of diabetes where the treating doctor can undertake the review in place of the consultant physician. Provisions in *Assessing Fitness to Drive* also allow for a general practitioner assessment where access to the consulting physician is difficult, as long as the initial assessment was performed by the consultant. In consultation with RANZCP and based on information provided in driver licensing authority feedback, this provision has been extended to periodic review for commercial drivers.

Red flags

Submissions were received requesting that a description of 'red flags' be included that are contraindications for driving and may flag an advisory non-driving period until the condition has been evaluated and assessed. This content has been developed with specialist advice.

Psychogenic non-epileptic seizures (PNES)

Submissions were received requesting standards for assessing PNES (aka pseudoseizures). Recent PNES and driving guidelines published by the International League Against Epilepsy were recommended as a template for these purposes. There are few studies examining the road safety risk of PNES and a targeted literature search (Appendix C - PNES) did not find enough evidence to make a conclusion on the road safety risk of this condition. However, licensing criteria are appropriate for this condition because people experiencing this condition may otherwise be managed under the default epilepsy and seizure standards. Medical specialists provided advice on guidance for private and commercial medical standards. Development of these criteria included consideration of the ILAE report as well as guidance in international fitness to drive standards. Guidance and licensing criteria provide consideration for a non-driving and seizure free period, in addition to clinical features and severity of the condition.

Dissociative events

A targeted literature review could find no studies that have investigated the relationship between dissociative events and MVC risk, road safety, driving or on-road driving performance (Appendix C – Dissociative events). Medical specialists advised that a dissociative event is not considered a significant road safety issue in and of itself and is highly individualised – it can occur as a symptom of other psychiatric conditions and is appropriately managed under the current standards.

Attention deficit hyperactivity disorder (ADHD)

Submissions were received to provide further information or consider medical standards for people with ADHD. Specialist advice reaffirmed that the current psychiatric disorder standards are suitable to assess these individuals. Content has been included to highlight the potential impairments associated with ADHD that can be considered under the standard, which is a similar approach to the other listed psychiatric disorders.

3.8.3 Implications for stakeholders

Driver licensing authorities

There is now greater clarity regarding assessment requirements for ADHD, which will assist management and support consistency. This will better support authorities to consider when an ongoing review can be performed by a general practitioner.

Health professionals

This greater clarity regarding assessment requirements for ADHD will assist management and support consistency. It will better support health professionals to identify when ongoing review can be performed by a general practitioner. The addition of ‘red flags’ will support health professionals to manage their patients and provide clear guidance that may indicate substantial changes to a patient’s fitness to drive.

Drivers

New information about ADHD will support consistency and lessen uncertainty for drivers. It provides clear guidance on when management of ongoing review can be performed by a general practitioner, enhancing access and reducing the costs of ongoing reviews.

3.8.4 Medical standards for licensing – psychiatric disorders (revised 2022)

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A person is **not** fit to hold an **unconditional licence**: • if the person has a chronic psychiatric disorder of such severity that it is likely to impair insight, behaviour, cognitive ability or perception required for safe driving. A **conditional licence** may be considered by the driver licensing authority **subject to periodic review**, taking into account the nature of the driving task and information provided by the **treating doctor** as to whether the following criteria are met: • the condition is well controlled and the person is compliant with treatment over a substantial period; **and** • the person has insight into the potential effects of their condition on safe driving; **and** • there are no adverse medication effects that may impair their capacity for safe driving; **and** • the impact of comorbidities has been considered (e.g. substance abuse).	No change.	A person is **not** fit to hold an **unconditional licence:** • if the person has a chronic psychiatric disorder of such severity that is likely to impair behaviour, cognitive ability or perception required for safe driving. A **conditional licence** may be considered by the driver licensing authority **subject to periodic review**, taking into account the nature of the driving task and information provided by a **psychiatrist** as to whether the following criteria are met: • the condition is well controlled and the person is compliant with treatment over a substantial period; **and** • the person has insight into the potential effects of their condition on safe driving; **and** • there are no adverse medication effects that may impair their capacity for safe driving; **and** • the impact of comorbidities has been considered (e.g. substance abuse).	A person is **not** fit to hold an **unconditional licence**: • if the person has a chronic psychiatric condition of such severity that is likely to impair behaviour, cognitive ability or perception required for safe driving. A **conditional licence** may be considered by the driver licensing authority subject to **periodic review**, taking into account the nature of the driving task and information provided by a **psychiatrist*** as to whether the following criteria are met: • the condition is well controlled and the person complies with treatment over a substantial period; **and** • the person has insight into the potential effects of their condition on safe driving; **and** • there are no adverse medication effects that may impair their capacity for safe driving; **and** • the impact of comorbidities has been considered (e.g. substance abuse). ** Where the treating psychiatrist considers a driver's condition to be stable, well managed, and the driver has good insight, the driver licensing authority may agree to ongoing periodic review by the person's regular general practitioner on mutual agreement of all practitioners concerned. The initial*

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2016	**Revised 2022**	**2016**	**Revised 2022**
			allocation of a conditional licence must, however, be based on an assessment and information provided by the psychiatrist.
Psychogenic non-epileptic seizures None.	**Psychogenic non-epileptic seizures** A person is **not fit** to hold an **unconditional licence**: • if the person has experienced a psychogenic seizure. A **conditional licence** may be considered by the driver licensing authority subject to **periodic review**, taking into account information provided by the **treating doctor** as to whether the following criteria are met: • seizures are identified as psychogenic only with no epileptic seizures*; **and** • there have been no further psychogenic seizures for at **least 3 months** **or** • the situational context or the semiology has been stable for **at least 12 months** and the psychogenic seizures; – have not caused a loss of awareness or responsiveness; **and** – have not resulted in injury; **and** – would not disrupt the driving task. **or** • could not occur when a person is	**Psychogenic non-epileptic seizures** None.	**Psychogenic non-epileptic seizures** A person is **not fit** to hold an **unconditional licence**: • if the person has experienced a psychogenic seizure. A **conditional licence** may be considered by the driver licensing authority subject to at least **annual review**, taking into account information provided by the **treating neurologist or psychiatrist** as to whether the following criteria are met: • seizures are identified as psychogenic only with no epileptic seizures*; **and** • there have been no further psychogenic seizures for **at least 3 months** * The seizure and epilepsy standards also apply in cases where there is co-existent epilepsy (refer to section **6.2. Seizures and Epilepsy**). If psychogenic and epileptic seizures cannot be differentiated, the Blackouts of uncertain mechanism standards apply (refer to section **1.2.4. Blackouts of undetermined mechanism**). If more than one standard applies, the standard with the longer non-driving period prevails.

PRIVATE		COMMERCIAL	
2016	**Revised 2022**	**2016**	**Revised 2022**
	driving, **and** • only occur in response to triggers that will not be encountered whilst driving. * The seizure and epilepsy standards also apply in cases where there is co-existent epilepsy (refer to section **6.2. Seizures and Epilepsy**). If psychogenic and epileptic seizures cannot be differentiated, the Blackouts of uncertain mechanism standards apply (refer to section **1.2.4. Blackouts of undetermined mechanism**). If more than one standard applies, the standard with the longer non-driving period prevails.		

3.9 Sleep disorders

3.9.1 Inputs and review

A number of stakeholders provided submissions (refer to list). The review of the sleep disorders chapter involved consultation with Dr Mark Howard and Dr Shantha Rajaratnam, as representatives from the Australasian Sleep Association.

Stakeholder submissions
Driver licensing authorities and transport regulators • Department of Transport (Vic) • Transport for NSW
Medical/health professional stakeholders • Australian and New Zealand Society of Occupational Medicine • Royal Australasian College of Physicians
Industry stakeholders • Australian Trucking Association • NatRoad
Patient/carer/driver stakeholders • Royal Automobile Club of Victoria

3.9.2 Issues and recommendations

Sleep apnoea

In the 2016 review, submissions were received requesting information to help identify at-risk individuals and to support a diagnosis of sleep apnoea. Clinical and physical features for sleep apnoea were included. The continued use of the Epworth Sleepiness Scale (ESS) questionnaire was questioned in some submissions. The wording has been amended to emphasise the limitations of subjective assessments such as the ESS.

In the current review, submissions were received recommending changes to the licensing criteria for the commercial standards and requesting additional information to support sleep apnoea assessment. Consultation with medical specialists affirmed the existing licensing criteria under the private and commercial standards. This advice included a detailed description of the sleep apnoea clinical assessment process to emphasise that subjective measures of sleep are only one part of establishing a diagnosis of a sleep disorder. Novel objective measures of sleepiness are being developed but are not yet in clinical practice. An expanded list of clinical and physical features of sleep apnoea is now included to support the identification of at-risk individuals for further evaluation. This information covers questionnaires that can support identification of individuals at high risk of having sleep apnoea (STOP-BANG, OSA-50, and Berlin questionnaires) and information on the availability of home sleep testing kits.

Submissions were received recommending mandated sleep apnoea diagnostic screening assessments for commercial vehicle drivers and subsequent sleep studies for those found to be at high-risk of sleep apnoea. This includes requests to add the STOP-BANG questionnaire as part of the licensing criteria. AFTD's purpose is to support health professionals assess patients whose identified medical condition may affect their ability to drive safely, understand the implications of the condition, and meet self-report obligations for holding their licence. It does not include diagnostic screening to identify the presence of a medical condition as criteria for licensing. Requirements for specific medical examinations (e.g. Vision tests on licence application and renewal etc) are established through state and territory licensing policies and out of scope of the AFTD review. This is discussed further in section 5.

One submission queried whether a diagnosis of obstructive sleep apnoea under the commercial standards should result in a conditional licence with at least an annual review in all circumstances. Medical specialist advice recommended only sleep apnoea with associated sleepiness requires an annual review for commercial licensing because many drivers have mild sleep apnoea without sleepiness that does not require regular review.

Treatment and non-driving periods

In the 2016 review, information and examples of self-imposed driving limitations for people whose sleep disorder is being investigated was provided. In the current review we received submissions requesting further information on the typical timeframes to determine treatment outcomes and adherence, and whether these should be mandatory non-driving periods. Medical specialist advice indicated that a non-driving or restricted driving period could be considered to assess response to treatment but should be determined on a case-by-case basis. This information is advisory and determined by specialists based on an assessment of sleepiness and related driving risk. Content has been updated in section 8.2.3 Sleep apnoea.

Chronic fatigue syndrome

In 2016 a submission proposed the inclusion of a standard for chronic fatigue. Specialist input noted that the functional impact of chronic fatigue and similar conditions was variable and best addressed through consideration of the general assessment principles.

A submission was received in the current review for including a standard on chronic fatigue. A targeted literature search found insufficient evidence of a road safety or MVC risk for chronic fatigue (Appendix C – Chronic fatigue). No change has been made.

Narcolepsy

The Australasian Sleep Association's Clinical Standards committee provided minor corrections to the information for diagnosis of narcolepsy and other disorders of hypersomnolence.

3.9.3 Implications for stakeholders

Driver licensing authorities

The criteria remain largely unchanged. However, guidance has been given for criteria regarding sleep apnoea and treatment outcomes. We have provided greater clarity regarding assessment requirements, licensing requirements and periodic review, which will assist management and support consistency.

Health professionals

The criteria remain largely unchanged. However, guidance has been given for criteria regarding sleep apnoea and treatment outcomes, providing greater clarity regarding assessment treatment outcomes for conditional licensing.

Drivers

The criteria remain largely unchanged. However, guidance has been given for criteria regarding sleep apnoea and treatment outcomes.

3.9.4 Medical standards for licensing – sleep disorders (revised 2022)

PRIVATE		COMMERCIAL	
2016	**Revised 2022**	**2016**	**Revised 2022**
Sleep apnoea A person is **not** fit to hold an **unconditional licence**: • if the person has established sleep apnoea syndrome (sleep apnoea on a diagnostic sleep study and moderate to severe excessive daytime sleepiness*); **or** • if the person has frequent self-reported* episodes of sleepiness or drowsiness while driving; **or** • if the person has had motor vehicle crash/es caused by inattention or sleepiness; **or** • if the person, in opinion of the **treating doctor**, represents a significant driving risk as a result of a sleep disorder. A **conditional licence** may be considered by the driver licensing authority subject to **periodic review**; taking into account the nature of the driving task and information provided by the **treating doctor** as to whether the following criteria are met: • the person is compliant with treatment; **and** • the response to treatment is satisfactory. * The treating doctor should not rely solely on subjective measures of sleepiness such as the ESS to rule out sleep apnoea. Refer to section 8.2.3.	No change.	**Sleep apnoea** A person is **not** fit to hold an **unconditional licence**: • if the person has established sleep apnoea syndrome (sleep apnoea on a diagnostic sleep study and moderate to severe excessive daytime sleepiness*); **or** • if the person has frequent self-reported* episodes of sleepiness or drowsiness while driving; **or** • if the person has had motor vehicle crash/es caused by inattention or sleepiness; **or** • if the person, in opinion of the **treating doctor**, represents a significant driving risk as a result of a sleep disorder. A **conditional licence** may be considered by the driver licensing authority subject to **periodic review**, taking into account the nature of the driving task and information provided by a **specialist in sleep disorders** as to whether the following criteria are met: • the person is compliant with treatment; **and** • the response to treatment is satisfactory. * The treating doctor should not rely solely on subjective measures of sleepiness such as the ESS to rule out sleep apnoea. Refer to section 8.2.3.	No change.

PRIVATE		COMMERCIAL	
2016	**Revised 2022**	**2016**	**Revised 2022**
Narcolepsy A person is **not** fit to hold an **unconditional licence**: • if narcolepsy is confirmed. A **conditional licence** may be considered by the driver licensing authority subject to **periodic review**, taking into account the nature of the driving task and information provided by a **specialist in sleep disorders** on the response to treatment.	No change.	**Narcolepsy** A person is **not** fit to hold an **unconditional licence:** • if narcolepsy is confirmed. A **conditional licence** may be considered by the driver licensing authority subject to at least **annual review**, taking into account the nature of the driving task and information provided by a **specialist in sleep disorders** as to whether the following criteria are met: • cataplexy has not been a feature in the past; **and** • medication is taken regularly; **and** • there has been an absence of symptoms for **six months**; **and** • normal sleep latency present on MWT (on or off medication).	No change.

3.10 Substance misuse

3.10.1 Inputs and review

A number of stakeholders provided submissions (refer to list). The review of the substance misuse chapter involved consultation with Prof. Edward Ogden.

Stakeholder submissions
Driver licensing authorities and transport regulators • Department for Infrastructure and Transport (SA) • Department of Transport (Vic) • Department of Transport (WA) • Transport for NSW
Medical/health professional stakeholders • Australian and New Zealand College of Anaesthetists • Australian and New Zealand Society of Occupational Medicine • Royal Australasian College of General Practitioners • Royal Australasian College of Physicians

3.10.2 Issues and recommendations

Information on objective assessment of remission

We received submissions requesting supporting information on objective assessment of remission. Medical specialists advised that taking a clinical history from the subject to establish patterns of drug use is not sufficient for this purpose. A meta-analysis of self-reported drug use when toxicology is available for validation found that, at best, only 42 per cent of subjects correctly reported drug use (Magura & Kang 1996). Objective evidence of abstinence or reduced intake can include biological testing and can be taken into consideration by the medical professional when determining remission and assessing fitness to drive. Information has been added to highlight issues of self-report and the suitability of objective testing.

Substance use disorders and unconditional commercial licensing

We received submissions requesting clarification on whether the commercial standards allow a person with an alcohol use or substance use disorder to hold an unconditional licence. Medical specialist advice noted that substance addiction is a chronic relapsing disorder characterised by compulsion to take a substance and loss of self-control in limiting intake. People with a substance misuse disorder using an impairing substance (including alcohol) can be considered unfit to drive until there is evidence to the contrary. Changes have been made to the standards to clarify the criteria for alcohol use disorders.

Access to addiction specialists

We received a submission highlighting that access to an addiction specialist can be extremely difficult and creates an unrealistic requirement, preventing the licensing condition for periodic review from being fulfilled. On medical specialist and driver licensing authority advice, it is considered appropriate to apply the existing provision for areas where accessing a specialist is difficult (refer to Part A, section 4.4.6 What about conditional licences for commercial vehicle drivers?). Reference to this option has been included in the medical standards table. Submissions during the public consultation round recommended that it be made clear that this arrangement for follow-up review can only be entered into on agreement of all parties involved. This stipulation has been added to the provision.

Non-driving periods

A person with a substance misuse disorder is unfit to drive until the criteria for a conditional licence is met. This includes a period of time for the person to be in treatment and for remission to be assessed, at least one and three months for the private and commercial standards respectively. Specialist advice affirmed the suitability of such non-driving periods. They have been highlighted in the medical standards table.

3.10.3 Implications for stakeholders

Driver licensing authorities

This chapter provides greater clarity regarding assessment requirements, licensing requirements and periodic review, which will assist in management and support consistency. The changes will support driver licensing authorities to identify when ongoing review can be performed by a general practitioner.

Health professionals

This chapter provides greater clarity regarding assessment requirements, licensing requirements and periodic review, which will assist in management and support consistency. The changes will support health professionals to identify when ongoing review can be performed by a general practitioner.

Drivers

This chapter provides clear guidance on when management of ongoing review can be performed by the general practitioner, enhancing access and reducing the costs of ongoing review.

3.10.4 Medical standards for licensing – substance misuse (revised 2022)

PRIVATE		COMMERCIAL	
2016	**Revised 2022**	**2016**	**Revised 2022**
A person is **not** fit to hold an **unconditional licence**: • if there is an alcohol or other substance use disorder, such as substance dependence or heavy frequent alcohol or other substance use that is likely to impair safe driving. A **conditional licence** may be considered by the driver licensing authority **subject to periodic review**, taking into account the nature of the driving task and information provided by the **treating doctor** as to whether the following criteria are met: • the person is involved in a treatment program and has been in remission* for at least **one month**; **and** • there is an absence of cognitive impairments relevant to driving; **and** • there is absence of end-organ effects that impact on driving (as described elsewhere in this publication). ***** Remission is attained when there is abstinence from use of impairing substance/s or where substance use has reduced in frequency to the point where it is unlikely to cause impairment. Remission may be confirmed by biological monitoring for presence of drugs.	A person is **not** fit to hold an **unconditional licence**: • if there is an alcohol use disorder, such as alcohol dependence or heavy frequent alcohol use; or • if there is a substance use disorder, such as substance dependence or other substance use that is likely to impair safe driving. A **conditional licence** may be considered by the driver licensing authority subject to **periodic review**, taking into account the nature of the driving task and information provided by the **treating doctor** as to whether the following criteria are met: • the person is involved in a treatment program and has been in remission* for at least **1 month**; **and** • there is an absence of cognitive impairments relevant to driving; **and** • there is absence of end-organ effects that impact on driving (as described elsewhere in this publication). The person is **not** fit to drive until they meet the criteria for a conditional licence. ** Remission is attained when there is abstinence from use of impairing substance(s) or where substance use has reduced in frequency to the point where it is unlikely to cause impairment.*	A person is **not** fit to hold an **unconditional licence**: • if there is an alcohol or other substance use disorder, such as substance dependence or heavy frequent alcohol use or other substance use that is likely to impair safe driving. A **conditional licence** may be considered by the driver licensing authority subject to **periodic review**, taking into account the nature of the driving task and information provided by an **appropriate specialist (such as an addiction medicine specialist or addiction psychiatrist)** as to whether the following criteria are met: • the person is involved in a treatment program and has been in remission* for at least **three months**; **and** • there is an absence of cognitive impairments relevant to driving; **and** • there is absence of end-organ effects that impact on driving (as described elsewhere in this publication). ***** Remission is attained when there is abstinence from use of impairing substance/s or where substance use has reduced in frequency to the point where it is unlikely to cause impairment. Remission may be confirmed by biological monitoring for presence of drugs.	A person is **not** fit to hold an **unconditional licence**: • if there is an alcohol use disorder, such as alcohol dependence or heavy frequent alcohol use; or • if there is a substance use disorder, such as substance dependence or other substance use that is likely to impair safe driving. A **conditional licence** may be considered by the driver licensing authority subject to **periodic review**, taking into account the nature of the driving task and information provided by an **appropriate specialist (such as an addiction medicine specialist or addiction psychiatrist)*** as to whether the following criteria are met: • the person is involved in a treatment program and has been in remission** for at least **3 months**; **and** • there is an absence of cognitive impairments relevant to driving; **and** • there is absence of end-organ effects that impact on driving (as described elsewhere in this publication). The person is **not** fit to drive until they meet the criteria for a conditional licence. ** Where the treating specialist considers a driver's condition is stable, well*

PRIVATE		COMMERCIAL	
2016	**Revised 2022**	**2016**	**Revised 2022**
	Remission may be confirmed by biological monitoring for the presence of drugs. *An alcohol interlock may form part of the approach to managing driving for alcohol-dependent people (refer to section 9.2.2 Alcohol dependence and Appendix 5).*		*managed, and the driver has good insight, the driver licensing authority may agree to ongoing periodic review by the person's regular general practitioner with cooperation on mutual agreement of all practitioners concerned. The initial granting of a conditional licence must, however, be based on information provided by the addiction medicine specialist or addiction psychiatrist.* *** Remission is attained when there is abstinence from use of impairing substance/s or where substance use has reduced in frequency to the point where it is unlikely to cause impairment. Remission may be confirmed by biological monitoring for presence of drugs.*

3.11 Vision and eye disorders

3.11.1 Inputs and review

A number of stakeholders provided submissions (refer to the list below).

The review of the vision and eye disorders chapter involved consultation with representatives from the Royal Australian and New Zealand College of Ophthalmologists, Optometry Australia and Orthoptics Australia. Advice on practical driver assessment was also provided by Occupational Therapy Australia and its national driving committee. Findings from *Influence of chronic illness on crash involvement of motor vehicle drivers: 3rd edition* and other medical and fitness-to-drive studies informed the outcomes of the review.

Stakeholder submissions
Driver licensing authorities and transport regulators • Department for Infrastructure and Transport (SA) • Department of Transport and Main Roads (Qld) • Transport for New South Wales • Department of Transport (Vic)
Medical/health professional stakeholders • Australian Medical Association (SA) • Australian and New Zealand Society of Occupational Medicine • Occupational Therapy Australia • Optometry Australia • Orthoptics Australia • Royal Australasian College of Physicians
Patient/carer/driver stakeholders • Bioptic Drivers Australia • Glaucoma Australia

3.11.2 Issues and recommendations

Visual acuity

Visual acuity assessment was clarified in the 2016 review with the addition of a flow chart and other minor changes. This appears to have been well received and only minor wording changes and updated references were submitted for the current review. Findings from *Influence of chronic illness on crash involvement of motor vehicle drivers: 3rd edition* reiterated the challenges in defining minimum vision standards for road safety. The report found that the available evidence doesn't indicate that current standards should change, noting that the finding is limited because few drivers with a visual acuity less than 6/12 are included in the examined studies, preventing the evaluation of an alternate cut-off point.

Visual fields

In the 2016 review, guidance was provided to clarify the standard regarding visual fields, including:

- further advice on defining unacceptable central field loss
- information to assist in clinical assessment of visual field loss.

The risk of crash in drivers with hemianopia or quadrantanopia was confirmed to be increased, justifying the restriction.

Similar submissions were received in the current review to confirm whether the standards for visual field loss remain appropriate for people with hemianopia and quadrantanopia. Specialist advice reconfirmed that the current visual field standards remain appropriate in this regard. MUARC's report identified a negative impact of moderate to severe binocular visual field loss on driving ability and safety. Although the availability of high-quality studies for hemianopia and quadrantanopia and road safety is limited, available research has reported increased MVC risk and poorer on-road driving performance for this group. No changes to the standards have been made in this regard.

We received submissions requesting information to support deliberations on exceptional cases to the visual field defects standards. Medical specialist advice noted that there was no significant evidence that could be drawn upon to define a lower risk threshold. Individual assessment by an optometrist or ophthalmologist was emphasised, which already includes consideration of the duration of and evidence for visual adaptation, driving history (if applicable) and the nature of the driving task. It was noted that visual defects that occur in an area that would otherwise be blocked by the passenger car door (inferior field on the left side) may be able to be considered as exceptional cases so long as there was no central field defect. These factors have been included in section 10.2.2 Visual fields to provide contextual information for exceptional cases.

Monocular vision and commercial licensing

A more detailed checklist of factors that need to be considered in licensing monocular drivers and a provision for exceptional cases were added in the 2016 review. A request was received in the current review to include a minimum visual field standard for commercial monocular driving in addition to the existing factors that should be considered in specialist review for a conditional licence.

Medical and driver licensing agency advice noted that visual criteria can be the same as binocular visual standards. The visual acuity in the remaining eye is 6/9 or better, with or without correction. The horizontal extent of the visual field should be greater than 140 degrees, with no significant field loss, such as a central scotoma, that would be likely to impede driving performance. For recent onset, a period of time will be required for adaptation to their new visual circumstances and to re-establish depth perception. This has been updated in the guidance text and licensing criteria table.

Standards for assessing contrast sensitivity

A submission questioned whether it was appropriate to specify standards for contrast sensitivity. Medical specialist advice noted that there is no accepted standard test or cut-offs for contrast sensitivity and that evidence linking reduced contrast sensitivity to driving ability is situational and limited. The available evidence suggests contrast sensitivity would be an ineffective pre-screening tool to identify drivers who pose a road safety risk. Including a contrast sensitivity standard as part of routine vision testing was not supported. It was noted that contrast sensitivity testing may provide further information for borderline cases and when considering conditional licences, which is already provided for in the current guidance. No changes have been made.

Orthokeratology therapy

A submission requested guidance on the use of orthokeratology lenses to correct visual acuity. Specialist advice on the use and licensing conditions for this therapy was provided. Orthokeratology lenses are considered safe to use when driving as long as treatment allows a person to meet the relevant visual acuity standard. Corrective lenses must be worn as per the existing standards if uncorrected visual acuity cannot be achieved through this treatment. This information is included in section 10.2.7 Orthokeratology therapy.

Diplopia and commercial licensing

A submission requested clarification on the description of diplopia occurring within central fixation. Specialist advice confirmed that a person is not fit for a commercial licence, either unconditional or conditional, if they have double vision when looking up to 20 degrees from fixation. If they have double vision when looking beyond 20 degrees of fixation they are still fit for a conditional licence. Diplopia within the central 20 degrees refers to 20 degrees from central fixation and not 20 degrees across fixation. Minor text changes have been made to clarify this point.

A submission was received requesting guidance on physiological diplopia. Specialist advice reiterated that this is a natural phenomenon has no implications for driving fitness.

Telescopic lenses (Bioptics)

A number of submissions requested vision standards and licensing criteria for the use of bioptic devices, along with guidance for medical professionals to assist in training for using these devices. Medical expert advice did not support the proposed standards or criteria for conditional licensing using bioptics. A consensus position supporting the use of bioptic devices could not be reached among the expert advice provided, which included recommendations to prohibit the use of bioptics to meet the visual acuity standards. This stemmed largely from differing interpretations of the available road safety and performance studies on bioptics and driving. It was noted that there is inconsistent approval across international fitness-to-drive standards for using these devices when driving and/or to meet visual acuity criteria. Areas of consensus among medical and health professional stakeholders will be required before making further changes to the guidance for these devices. The NTC would welcome further research in this area, including appropriately powered and controlled road safety and/or naturalistic driving studies examining crash risk and on road performance.

The Advisory Group considered the existing guidance provided for bioptic driving. The group noted that AFTD2022 would maintain the current position that driver licensing authorities may consider licensing conditions for these devices on a case-by-case basis with reference to the existing vision standards. The Advisory Group recommended that the guidance direct drivers to contact the driver licensing authority to understand their licensing policy for these devices. The section has been updated accordingly.

We received submissions in the public consultation round recommending that the devices should not be considered for commercial drivers until standards are formed. The submissions highlighted the general increased road safety risk and demands on the driver associated with commercial vehicle driving which cannot be effectively or consistently managed through a case-by-case assessment without supporting standards. This section was updated with the guidance that bioptic devices should not be accepted to meet the commercial vehicle visual acuity standards.

Role of practical driver assessment

During the 2012 and 2016 reviews, submissions were received regarding the need to allow for practical driving assessments for people with low vision or who failed meeting the standards but would potentially be able to safely drive with a conditional licence. During those reviews, the advising experts considered on-road assessments to be inappropriate because they are unsafe and not effective in assessing ability to see emergency situations. It was not considered appropriate to grant a conditional licence based on evidence of a person's driving record (no accidents). The advisory committees at the time determined that the proper application of the standards was sufficient and that practical tests would not be recognised.

A number of submissions to the current review requested that this matter be reviewed again to permit practical driving assessments for people with low vision or who are borderline for meeting the standards. A consensus position among medical experts could not be established. There were questions about the suitability of a practical driver test to identify driver safety of someone with visual impairment in a range of road conditions or situations.

Some medical experts noted that results from longitudinal studies evaluating driver performance and safety outcomes for low-vision and vision impaired drivers will be important when considering this matter in the future. Recent research from naturalistic driving studies suggest that fitness to drive recommendations based on ratings of on-road driving performance are valid from a safety standpoint[1].

Areas of consensus among medical and health professional stakeholders will be required before changes can be considered. No changes have been made to this section and this issue will be reviewed in the next AFTD update.

Information on conditions that reduce visual fields and acuity

A number of submissions requested information on various medical conditions that can cause a reduction in visual acuity or visual fields and whether non-driving periods were appropriate after diagnosis or on the commencement of treatment. The medical standards and criteria in *Assessing Fitness to Drive* are designed to manage the functional impairment of a medical condition on the driving task rather than standards for a diagnosis.

Specialist advice did not support these requests, highlighting that it is the impact of the visual impairment that should be assessed, and the evidence for a road safety risk is stronger based on impairment rather than specific diagnosis. This approach is consistent with *Influence of chronic illness on crash involvement of motor vehicle drivers: 3rd edition* conclusions and recommendations for fitness-to-drive assessment based on functional impairment.

Specialist advice also noted that accredited health professionals who assess vision are well aware of the medical conditions that produce visual deficits and that this does not need to be reproduced in *Assessing Fitness to Drive*. This advice also stressed that while non-driving periods may be appropriate, they should not be stipulated but be applied on a case-by-case basis as part of the medical report.

[1] Swain TA, et al,. Driving specialist's ratings of on-road performance and naturalistic driving crashes and near-crashes. (2021). *J Am Geriatr Soc*. DOI: 10.1111/jgs.17359

3.11.3 Implications for stakeholders

Driver licensing authorities

Guidance and criteria for orthokeratology therapy will support management and licensing decisions regarding the use of this therapy. Guidance has been provided to assist the evaluation of exceptional cases.

Health professionals

This chapter provides greater clarity regarding assessment requirements, licensing requirements and periodic review for orthokeratology therapy, visual fields and exceptional cases. This will assist in patient management and support consistency for fitness-to-drive assessments.

Drivers

Information provided for exceptional cases should lessen uncertainty. The description of orthokeratology therapy will ensure that drivers can use this therapy.

3.11.4 Other issues

Specialists made additional recommendations during the course of the medical review. These would cause significant impact for assessment or application of the standards and require extensive consultation to consider whether it is suitable to implement them.

3.11.5 Medical standards for licensing – vision and eye disorders (revised 2022)

PRIVATE		COMMERCIAL	
2016	**Revised 2022**	**2016**	**Revised 2022**
Visual acuity A person is **not** fit to hold an **unconditional licence**: • if the person's uncorrected visual acuity in the better eye or with both eyes together is worse than 6/12. A **conditional licence** may be considered by the driver licensing authority subject to **periodic review** if the standard is met with corrective lenses. Some discretion is allowed in application of the standard by an optometrist/ophthalmologist. However, a driver licence will not be issued when visual acuity in the better eye is worse than 6/24.	**Visual acuity** A person is **not** fit to hold an **unconditional licence**: • if the person's uncorrected visual acuity in the better eye or with both eyes together is worse than 6/12. A **conditional licence** may be considered by the driver licensing authority subject to **periodic review** if the standard is met with corrective lenses*. Some discretion is allowed in application of the standard by the treating optometrist, or ophthalmologist. However, a driver licence will not be issued when visual acuity in the better eye is worse than 6/24. * Refer to section 10.2.7. Orthokeratology therapy for information on meeting the standard using orthokeratology therapy	**Visual acuity** A person is **not** fit to hold an **unconditional licence**: • if the person's uncorrected visual acuity is worse than 6/9 in the better eye, **or** • if the person's uncorrected visual acuity is worse than 6/18 in either eye. A **conditional licence** may be considered by the driver licensing authority **subject to periodic review** if the standard is met with corrective lenses. If the person's vision is worse than 6/18 in the worse eye, a **conditional licence** may be considered by the driver licensing authority subject to **periodic review**, provided the visual acuity in the better eye is 6/9 (with or without corrective lenses) according to the **treating optometrist/ophthalmologist**. The driver licensing authority take into account: • the nature of the driving task • the nature of any underlying disorder; **and** • any other restriction advised by the optometrist or ophthalmologist.	**Visual acuity** A person is **not** fit to hold an **unconditional licence**: • if the person's uncorrected visual acuity is worse than 6/9 in the better eye; **or** • if the person's uncorrected visual acuity is worse than 6/18 in either eye. A **conditional licence** may be considered by the driver licensing authority subject to **periodic review** if the standard is met with corrective lenses*. If the person's vision is worse than 6/18 in the worse eye, a **conditional licence** may be considered by the driver licensing authority subject to **periodic review**, provided the visual acuity in the better eye is 6/9 (with or without corrective lenses or orthokeratology therapy) according to the **treating optometrist, or ophthalmologist**. The driver licensing authority will take into account: • the nature of the driving task; **and** • the nature of any underlying disorder; **and** • any other restriction advised by the optometrist or ophthalmologist. * Refer to section 10.2.7. Orthokeratology therapy for information on meeting the standard using orthokeratology therapy

PRIVATE		COMMERCIAL	
2016	**Revised 2022**	**2016**	**Revised 2022**
Diplopia A person is **not** fit to hold an **unconditional licence**: • if the person experiences any diplopia (other than physiological diplopia) when fixating objects within the central 20 degrees of the primary direction of gaze. A **conditional licence** may be considered by the driver licensing authority subject to **annual review**, taking into account the nature of the driving task and information provided by the **treating optometrist or ophthalmologist** as to whether the following criteria are met: • the condition is managed satisfactorily with corrective lenses or an occluder; **and** • the person meets other criteria as per this section, including visual fields. The following licence condition may apply if corrective lenses or an occluder prevents the occurrence of diplopia. **Corrective lenses or an occluder must be worn while driving.**	**Diplopia** A person is **not** fit to hold an **unconditional licence**: • if the person experiences any diplopia (other than physiological diplopia within 20 degrees from central fixation. A **conditional licence** may be considered by the driver licensing authority subject to **annual review**, taking into account the nature of the driving task and information provided by the **treating optometrist, or ophthalmologist** as to whether the following criteria are met: • the condition is managed satisfactorily with corrective lenses or an occluder; **and** • the person meets other criteria as per this section, including visual fields. The following licence condition may apply if corrective lenses or an occluder prevents the occurrence of diplopia. Corrective lenses or an occluder must be worn while driving. A 3-month non-driving period applies for use of occluders, in order to re-establish depth perception.	**Diplopia** A person is **not** fit to hold an **unconditional licence** or a **conditional licence**: • if the person experiences any diplopia (other than physiological diplopia) when fixating objects within the central 20 degrees of the primary direction of gaze.	**Diplopia** A person is not fit to hold an **unconditional licence** or a **conditional licence**: • if the person experiences any diplopia (other than physiological diplopia) within 20 degrees from central fixation.
Visual fields A person is **not** fit to hold an **unconditional licence**: • if the binocular visual field does not have a horizontal extent of at least 110 degrees within 10 degrees	**Visual fields** No change. **Monocular vision** No change.	**Visual fields** A person is **not** fit to hold an **unconditional licence**: • if the person has any visual field defect.	**Visual fields** No change. **Monocular vision** A person is **not** fit to hold an **unconditional licence**:

PRIVATE		COMMERCIAL	
2016	**Revised 2022**	**2016**	**Revised 2022**
above and below the horizontal midline; **or** • if there is any significant visual field loss (scotoma) within a central radius of 20 degrees of the foveal fixation or other scotoma likely to impede driving performance; **or** • if there is any significant visual field loss (scotoma) with more than four contiguous spots within a 20-degree radius from fixation. A **conditional licence** may be considered by the driver licensing authority subject to **annual review**, taking into account the nature of the driving task and information provided by the **treating optometrist, or ophthalmologist**. **Monocular vision** A person is not fit to hold an **unconditional licence**: • if the person is monocular. A **conditional licence** may be considered by the driver licensing authority **subject to two-yearly review**, taking into account the nature of the driving task and information provided by the **treating optometrist or ophthalmologist** as to whether the following criteria are met: • the visual acuity in the remaining eye is 6/12 or better, with or without correction; **and** • the visual field in the remaining eye has a horizontal extent of at least 110 degrees within 10 degrees above and below the horizontal midline.		A **conditional licence** may be considered by the driver licensing authority subject to **annual review**, taking into account the nature of the driving task and information provided by the **treating optometrist, orthoptist, or ophthalmologist** as to whether the following criteria are met: • the binocular visual field has an extent of at least 140 degrees within 10 degrees above and below the horizontal midline • the person has no significant visual field loss (scotoma, hemianopia, quadrantanopia) that is likely to impede driving performance • the visual field loss is static and unlikely to progress rapidly. **Monocular vision** A person is not fit to hold an unconditional licence: • if the person is monocular. A **conditional licence** may be considered by the driver licensing authority subject to **annual review**, taking into account the nature of the driving task and information provided by the **treating ophthalmologist or optometrist**, and the comments made in 10.2.2 Visual fields under the sub-heading *Monocular vision (one- eyed driver).*	• if the person is monocular. A **conditional licence** may be considered by the driver licensing authority subject to **2-yearly review**, taking into account the nature of the driving task and information provided by the **treating optometrist or ophthalmologist**, as to whether the following criteria are met: • the visual acuity in the remaining eye is 6/9 or better, with or without correction; **and** • the visual field in the remaining eye has a horizontal extent of at least 140 degrees within 10 degrees above and below the horizontal midline; **and** • there is no other significant visual field loss that is likely to impede driving performance.

3.12 Other conditions

3.12.1 Inputs and review

The NTC received submissions requesting consideration of conditions not related to the existing medical chapters (refer to the list below). The recommendation was reviewed in consultation with representatives from the Australian and New Zealand Society of Nephrology. Findings from a targeted literature search supported this review (Appendix C – Haemodialysis).

Stakeholder submissions
Driver licensing authorities and transport regulators • Department of Transport (Vic)
Medical/health professional stakeholders • Department of Nephrology, Austin Health

3.12.2 Issues and recommendations

Haemodialysis

Submissions were received requesting guidance and licensing criteria for individuals with end-stage kidney disease who undergo haemodialysis treatment. The NTC consulted with medical specialists and performed a targeted literature review to identify whether there is a clear driver impairment and road safety risk due to haemodialysis and whether this is sufficient to merit guidance or licensing standards in AFTD.

Medical specialist advice indicated that there is no systematic data collection on these events and the studies on the potential for driver impairment post treatment are extremely limited. It was noted that AFTD does not attempt to define all clinical situations that may influence safe driving ability, and the guidelines appropriately emphasises the degree of professional judgement required in assessing fitness to drive more generally. Based on the evidence limitations and the resulting lack of clinical consensus on the matter, the general guidance in Part A Section 2.2 of the AFTD is sufficient to manage this treatment. The advice was supported by a targeted literature review (Appendix C – Haemodialysis) which found no studies investigating on-road driving performance nor sufficient evidence to determine a MVC risk. No changes are made.

3.12.3 Implications for stakeholders

Driver licensing authorities

None.

Health professionals

None.

Drivers

None.

4 Part C (Appendices)

As part of the review the NTC sought feedback on any corrections needed to information in the appendices of *Assessing Fitness to Drive*.

Driver licensing authorities provided some of the necessary information in submissions.

5 Out-of-scope issues

5.1 Introduction to out-of-scope issues

The focus of the current review is well- defined, however, , stakeholders also commented on a range of matters outside the project scope that are still relevant to *Assessing Fitness to Drive* and its use. Those issues are discussed in this section.

5.2 General issues

5.2.1 Mandatory reporting

An issue routinely raised during reviews of *Assessing Fitness to Drive* is the consideration of mandatory requirements for doctors to report patients (currently in South Australia and the Northern Territory only) to a driver licensing authority if they believe they are unfit to hold a driver licence. Doctors have concerns that their patients may elect not to disclose symptoms related to an illness for fear of being placed on a conditional licence or losing their licence completely. Medical practitioners understand they also have a duty to the broader community, in terms of advising their patients when they are not fit to drive a motor vehicle, but also to take appropriate action with the authorities if required.

Legal requirements for mandatory reporting fall under state and territory legislation, and the relevant governments will decide if they are to review any requirements for mandatory reporting.

5.2.2 Implementation of Assessing Fitness to Drive

It is the NTC's goal to create national consistency of medical standards for driver licensing across Australia. Various editorial changes were made to the standard to support consistency.

Various suggestions were offered for implementation of *Assessing Fitness to Drive* and facilitate useability and application of the standards. These included:

- undertaking wider promotion
- ensuring the publication is more accessible, including via prescribing software
- development of validated toolkits, checklists and fact sheets to assist health professionals to determine and report on the fitness to drive of patients
- developing programs to train medical professionals on treatments and aids available to support people learn or return to drive
- establishing accreditation programs that must be undertaken by medical professionals before they perform a fitness to drive assessment
- consumer knowledge and engagement content to assist patients to manage their health and driving
- consumer knowledge and engagement content for reporting drivers of concern
- development of materials for medical practitioner continual professional development requirements.

The Assessing Fitness to Drive review examines the medical standards and general information in the guidelines to ensure currency, accuracy and clarity. The revision only intends to address (and correct where necessary) the medical criteria and assessment information. Education, resources and consumer information are provided through a range of other avenues and publications (e.g. driver licensing authorities, educator groups, medical associations and public health groups). Driver licensing authorities are encouraged to develop appropriate communication and education as part of their local implementation and responsibilities for driver licensing decision making.

As for previous editions, some communication and promotion is facilitated through Austroads at the time of publication. Austroads is examining further options to support some of the above suggestions through an extended implementation program run in conjunction with the release of the new edition of *Assessing Fitness to Drive*. Austroads will publish the online and physical version of *Assessing Fitness to Drive* once ministers approve the new edition.

5.2.3 Definition of health practitioners to who can provide medical assessment reports

We received submissions requested the expansion of definitions of health practitioners who can perform fitness-to-drive assessments and complete the medical reports for the driver licensing agencies. The definitions of the health professional who can perform the fitness-to-drive assessments are defined in state and territory legislation which is outside the scope of the AFTD review. This does not preclude a suitably accredited health professional from performing tests that contribute to the assessment. The relevant governments must decide if they are to review and broaden the definitions in existing legislation.

5.2.4 Fitness for duty and diagnostic screening

As has been noted during previous reviews, *Assessing Fitness to Drive* is a standard for licensing purposes. The standards do not attempt to address fitness-for-duty issues, which requires a task risk assessment that identifies the range of needs for the job or industry it is to be used in. These issues may be more appropriately managed under industry specific standards or accreditation schemes. For instance, commercial vehicle drivers accredited under NHVR Basic Fatigue Management (BFM) and Advanced Fatigue Management (AFM) have additional medical assessment requirements and must assess sleep disorders.

In the current review stakeholders suggested that the commercial medical standards in *Assessing Fitness to Drive* be split into two categories, similar to the National Standard for Health Assessment of Rail Safety Workers, or to mandate diagnostic screening for certain conditions. The requested commercial licensing standards would include more stringent sleep apnoea screening, diabetes screening and cardiovascular risk screening for drivers where it is clinically relevant. The intent of this would be to enact a health standard for road transport to be used as a risk management approach for commercial vehicle drivers.

Under existing licensing regulations, drivers must make a medical self-declaration in relation to their fitness to drive at licence application, renewal, or once they become aware of a long-term condition that may impact their driving. This does not include a proactive duty for the driver to identify all conditions they may have or be at risk of which may impact their driving. These obligations are established through state and territory legislation and local driver licensing authority policy. The AFTD is designed to help drivers meet these self-report licensing obligations and support DLAs to understand the potential impact of these identified conditions when making licensing decisions. In accordance with this role, AFTD does not stipulate diagnostic screening to identify conditions as licensing criteria in the medical standards.

On 28 May 2021, ministers approved a two-year *HVNL Safety and Productivity Program* to implement reform outcomes from the HVNL review (https://www.ntc.gov.au/transport-reform/ntc-projects/hvnl-safety-productivity-program). The program, comprising six reform areas, aims to deliver productivity and safety benefits, including a heavy vehicle driver health management standard. The NTC has commenced this work which will be included in the final *HVNL Safety and Productivity Program* submitted for approval by transport ministers.

5.2.5 Programs and services to support medical assessment and drivers

Issues routinely raised during reviews of *Assessing Fitness to Drive* relate to developing and funding assessment and patient support services. In the current review, stakeholders highlighted the need for additional programs, funding and services to support the medical review process, people with a disability, learning to drive with significant medical conditions, and for drivers who have their driving privileges restricted. This included greater investment in cognitive assessment services, occupational therapist driver assessments and supporting disadvantaged community groups, particularly those living in rural and remote areas.

This is an ongoing issue that needs to be addressed by individual state and territory departments and professional bodies where relevant.

5.2.6 Forms

Inconsistencies with content and application of forms are ongoing issues, which have also been noted in previous reviews of *Assessing Fitness to Drive*. Concerns were expressed about the practicality of forms for medical practitioners and their patients.

State and territory driver licensing authorities prepare and manage forms associated with driver licensing. Input from medical professionals could assist in developing the forms so they are more useful from an assessment perspective, including patient declarations that they have been truthful in answering questions or providing a clinical history. Electronic assessment and reporting forms have previously been requested. Since the last review, electronic reporting forms and integration with practice management software has been implemented in some jurisdictions. The NTC recognises the use of electronic forms as an important advancement in managing fitness-to-drive assessments.

Stakeholders requested that the forms developed to support the conduct of health assessments for fitness for duty of commercial vehicle drivers be updated as part of this review process, including the addition of a question asking the health professional to specify how long they have treated the patient for. The intention of those forms, which are separate from *Assessing Fitness to Drive*, are to facilitate assessments required for schemes such as TruckSafe and National Heavy Vehicle Accreditation Scheme Fatigue Management Accreditation, as distinct from driver licensing.

The forms are currently available on the Austroads website and can be reproduced or modified as required. On the website it is stated that these forms are **not** to be used for driver licensing assessments. Given that these forms are separate from *Assessing Fitness to Drive* and are not to be used for driver licensing purposes, they are out of scope for this review. However, the forms will be reviewed and updated as part of Austroads' role in managing the support materials to ensure accuracy and incorporate stakeholder feedback.

5.2.7 Medical panels

The role of medical panels in supporting licensing decision making was raised during previous reviews and was again raised in this review as a means of supporting fairness and consistency, particularly for difficult or borderline cases. Stakeholders have requested that all driver licensing agencies establish such panels.

The use of medical panels is described in *Assessing Fitness to Drive* Part A, section 3.3.7 Role of independent experts/panels and is at the discretion of the driver licensing agencies.

5.2.8 Medical exams for licensing and renewal

Stakeholders requested changes to the types (e.g. vision tests), frequency, and age-based triggers for medical examinations that driver licensing agencies set as a requirements for licensing. Each state and territory sets their requirements for medical examinations (including vision tests) and road testing, depending on the driver's age or the type of vehicle being driven through local licensing policy decisions. The relevant agencies are responsible for reviewing and making changes to the requirements for these examinations.

5.3 Medical issues

5.3.1 Cardiovascular conditions

Cardiac risk screening for commercial vehicle drivers

In this and previous reviews, stakeholders have requested that a cardiovascular risk assessment be included in the licensing criteria for commercial vehicle drivers. Such assessments quantify a person's risk of developing a cardiovascular disease over the following years. Drivers found to be at high risk would be referred for further tests and management as required, including a conditional licence and more frequent review if cardiovascular disease is identified.

Clinical guidance regarding the risk management or diagnosis of medical conditions or patient health in general is outside the scope and purpose of *Assessing Fitness to Drive*. It is designed principally to support assessments of identified medical conditions by health professionals and allow drivers to meet their self-report obligations regarding fitness to drive for licensing purposes. Where they are relevant to the medical licensing standards and publicly available, reference is made to existing clinical guidelines produced by the medical associations.

As outlined above (5.2.4 Fitness for duty and diagnostic screening), approaches that support management of heavy vehicle driver health are being progressed as part of the Heavy Vehicle National Law review.

5.3.2 Diabetes

Diabetes risk assessment and testing for commercial vehicle drivers

In this and previous reviews, stakeholders have requested to introduce diabetes screening (such as HbA1C blood tests or AUSDRISK) as a requirement for commercial licensing. Clinical guidance regarding the risk management or diagnosis of diabetes or patient health in general is outside the scope and purpose of *Assessing Fitness to Drive*. AFTD is designed principally to guide and support assessments of identified conditions made by health professionals regarding fitness to drive for licensing purposes (refer also to section 3.4.2 Issues and recommended changes). Reference is made to the National Health and Medical Research Council and to Royal Australian College of General Practitioners clinical guidelines as a resource for general diabetes management.

As outlined above (5.2.4 Fitness for duty and diagnostic screening), approaches that support management of heavy vehicle driver health are being progressed as part of the Heavy Vehicle National Law review.

5.3.3 Musculoskeletal disorders

One submission raised an issue that drivers with a physical disability are required to undergo cognitive testing as a matter of course in the practical driving assessment. AFTD does not specify the methods of assessment to be used during practical driver assessments; these are established through professional standards of practice. A medical association noted that:

"The task of driving a motor vehicle requires biomechanical, sensory-motor, cognitive, intra and interpersonal components as well as the environmental factors. Occupational Therapist Driver Assessors view driving holistically, and therefore complete comprehensive off-road and on-road assessments which include screening of visual function, communication, hearing, sensory-motor function, cognitive-behavioural and perceptual function, and road law knowledge are always conducted. This is a requirement in the Australian Competency Standard for Occupational Therapy Driver Assessors (2018)."

The NTC encourages the publication of such standards and guidelines by which practical driver assessments for people with disabilities are performed. Consultation and engagement with the driving community on these methods can promote understanding of the practical driving assessment, the evidence that underpins practice, and create an avenue for feedback for patient concerns.

5.3.4 Sleep disorders

Diagnostic screening for commercial vehicle drivers

As with the proposal for risk screening for commercial vehicle drivers for cardiovascular conditions and diabetes, stakeholder requests also extended to include objective screening tests for sleep apnoea in commercial vehicle drivers.

As outlined above, *Assessing Fitness to Drive* does not provide clinical guidance about management or diagnosis of medical conditions or patient health. It is designed principally to support assessments of medical conditions by health professionals and allow drivers to meet their self-report obligations regarding fitness to drive for licensing purposes. Refer also to section 3.9.2 Issues and recommendations.

As outlined above (5.2.4 Fitness for duty and diagnostic screening), approaches that support management of heavy vehicle driver health are being progressed as part of the Heavy Vehicle National Law review.

5.3.5 Substance misuse

Treatment programs

We received a submission requesting information on the types of treatment programs that are suitable for substance misuse disorders. Specialist advice noted that there are many clinical guidelines available and various treatments that are used in Australia. Including descriptions of these is beyond the scope of *Assessing Fitness to Drive*.

5.3.6 Vision

Removal of requirements for vision tests

A stakeholder requested the removal of eyesight testing for new licence and periodic licence renewal, questioning the evidence to support this approach.

Each state and territory has specific requirements for medical examinations (including vision tests) for road testing, depending on the driver's age or the type of vehicle being driven. The relevant agencies must decide if they wish to review any changes to requirements for these examinations.

6 Coronial findings summary

6.1 Introduction

Coronial inquests and other investigations are a valuable source of information about the impact of medical conditions on driving. To identify coronial cases relevant to the Assessing Fitness to Drive review, the NTC requested data from the National Coroner's Information Service (NCIS). The NCIS conducted a search of its database for deaths reported to a coroner in Australia and New Zealand, where the death was attributed to a medical condition that unintentionally affected fitness to drive, and where the death occurred between 1 January 2009 and 21 December 2017. The NTC also wrote to each State Coroner requesting information regarding findings in cases where the death was attributed to a medical condition affecting fitness to drive.

A total of 27 cases of were identified in the NCIS report that matched the search criteria. A summary of the medical conditions related to these cases is presented in Table 2.

Table 2. Summary of medical conditions from the NCIS report

Medical condition	Number
Epilepsy/seizure	7
Cardiac	4
Multiple medical conditions	4
Age-related decline	4
Sleep	3
Diabetes	3
Dementia	1
Unknown	1
Total	**27**

6.2 Summary of cases

6.2.1 Epilepsy/seizures

Epilepsy refers to the tendency to experience recurrent seizures. Seizures vary considerably and are associated with loss of awareness, even if brief or subtle, or loss of motor control, and have the potential to impair the ability to control a motor vehicle. Drivers with epilepsy are twice as likely to be involved in an MVC compared with the general driving population.

The epilepsy/seizure cases highlighted the challenges of both drivers and health professionals with managing the condition, including the importance of seizures being discussed with health professionals and reported to the driver licensing authority when appropriate. A key theme within the recommendations was to introduce mandatory reporting of medical conditions for health professionals.

The coronial cases also highlighted the unpredictable nature of the condition. For example, in one case a person was assessed as fit to drive in accordance with the *Assessing Fitness to Drive* guidelines but experienced a seizure in the future. In another case there was no history of seizures/epilepsy prior to the crash, further reflecting the complexities of this condition and its impact on driving.

6.2.2 Cardiac

Cardiovascular conditions may affect the ability to drive safely due to sudden incapacity such as from a heart attack or arrhythmia. These conditions can also affect concentration and the ability to control a vehicle – that is, during the onset of symptoms. In most coronial cases where the driver had a cardiac-related condition, the condition was diagnosed and the patient had been informed not to drive. However, often the driver licensing authority had not been notified of the condition or the driver was not aware of the medical review process/outcome. One case involved a sudden cardiac arrythmia episode that could not have reasonably been previously detected by a health professional.

6.2.3 Multiple medical conditions

Where a driver has multiple medical conditions, there may be a compounding detrimental effect on driving abilities, and clinical judgement is needed to appropriately assess the driver. There were a number of cases involving multiple medical conditions including: alcoholism and brain injury; a history of chronic pain and recent falls; several medical conditions (unspecified) that resulted in the driver being tired and fatigued; and type 2 diabetes and a heart condition.

These cases highlighted the importance of drivers discussing medical history and conditions with the relevant health professional in the context of driving, so an appropriate assessment can be undertaken. It also highlights the importance of drivers following medical advice when informed they are unfit to drive. The issue of mandatory reporting requirements for health professionals was also raised, as was the issue of patients ‘doctor shopping’ when assessed as unfit to drive.

6.2.4 Diabetes

Diabetes may affect a person’s ability to drive, either through a ‘severe hypoglycaemic event’ or from end-organ effects on relevant functions, including effects on vision, the heart and the peripheral nerves and vasculature of the extremities, particularly the feet. The potential effects of hypoglycaemia are of most concern to road safety, particularly for those with a history of severe hypoglycaemia.

Hypoglycaemic events appeared to significantly contribute to the cases identified that involved diabetes. This highlighted the issue of drivers not reporting the condition or discussing previous hypoglycaemic events with their doctor. There were also recommendations for mandatory reporting requirements for health professionals in cases where the condition was known but not reported to the driver licensing authority.

6.2.5 Sleep

Sleep disorders are associated with an increased road safety risk and can impair driving abilities such as hand–eye coordination, reaction time, vision awareness of surroundings, decision making, judgement and inhibition.

These cases mainly related to sleep apnoea and a disruption of circadian rhythm and sleep deprivation, which highlighted the general difficulties in identifying and managing sleep disorders, particularly when there is no history of the condition. The issue of mandatory reporting requirements for health professionals was also recommended where the condition was known by the health professional but not reported to the driver licensing authority.

6.2.6 Age-related decline

There are a variety of normal physical and mental changes that occur with ageing, along with certain medical conditions, that can affect a person's ability to drive safety. The impact of cognitive or physical decline on driving was a theme within some cases. This raised the challenges faced by health professionals with assessing an older person's fitness to drive. It also highlighted the importance of medical professionals being aware of the medical review process, and drivers being aware of their responsibilities as licence holders. Coroner recommendations also focused on providing a more streamlined reporting process at the jurisdictional level and mandatory reporting requirements for health professionals.

6.2.7 Dementia

Although a diagnosis of dementia on its own does not always mean that a person must give up driving straightaway, it is likely that the person will have to cease driving at some point due to a gradual decline in cognitive and physical ability. The nature and unpredictability of the condition can make it difficult for doctors to determine whether a patient should be driving or not, and drivers may lack some insight into their driving abilities. The dementia-related case highlights the importance of the medical review outcome being communicated to the driver in an efficient manner by the driver licensing authority.

6.3 Conclusion

The NCIS report provided insight into the impact of medical conditions on driving, and these cases reflect the complexities of managing medical conditions and licensure. A limitation to this analysis was the capacity to clearly identify cases where a person's fitness to drive was compromised by a medical condition. While cases are categorised by cause of death (e.g. motor vehicle accident), there is no categorisation for accidents caused by medical conditions, necessitating keyword searches of each case summary. There was also a lack of standardised terminology used in the reports for fitness to drive and inconsistency in reporting of an individual's fitness status, complicating case identification. Several cases were identified where there was uncertainty whether the medical condition impaired a person's fitness to drive.

The key themes relate to the issue of mandatory reporting for health professionals; the impact of certain medical conditions on driving (i.e. cardiac, epilepsy/seizures and sleep-related disorders); and the importance of drivers and health professionals understanding their responsibilities within the medical review system. While addressing many of the issues raised in the coroner cases are outside of scope of the current project, the NTC has reviewed and updated the *Assessing Fitness to Drive* guidelines, in consultation with medical experts and key stakeholders, to ensure the most relevant and evidence-based guidance is provided.

Appendix A Advisory group members

Name	Organisation
Derise Cubin	Access Canberra
Rebecca Wilson	Access Canberra
Andrew McIntosh	Access Canberra
Bill McKinley	Australian Trucking Association
Louise Bilato	Australian Trucking Association
Dr Ramu Nachiappan	Australian College of Rural and Remote Medicine
Elaena Gardner	Austroads
Leonie Pattinson	Austroads
Fiona Landgren	Austroads/Project Health
Adam Cameron	Department for Infrastructure and Transport
Scott Swain	Department for Infrastructure and Transport
Karen Webb	Department of State Growth
Yessenia Pineda-De Leon	Department of Transport and Main Roads
A/Prof. Sjaan Koppel	Monash University Accident Research Centre
Andreas Blahous	National Heavy Vehicle Regulator
Jonathan Davey	National Transport Commission
Mandi Mees	National Transport Commission
Ron Grasso	National Transport Commission
Mohit Patiyal	National Transport Commission
Tim Davern	National Transport Commission
Emily Hicks	Office of Road Safety
Parik Lumb	Road Safety Commission
Prof. Nigel Stocks	Royal Australian College of General Practitioners
Irene Siu	Transport for NSW
Mary Drewett	Transport for NSW
Lee Chetham	Transport for NSW
Fiona Morris	VicRoads
Marilyn DiStefano	VicRoads
Dr Sanjeev Gaya	Victorian Institute of Forensic Medicine

Appendix B Consultation submissions: organisations

Medical professional organisations
Audiology Australia
Australasian College of Legal Medicine
Australasian Sleep Association
Australian and New Zealand Association of Neurologists
Australian and New Zealand College of Anaesthetists
Australian and New Zealand Society of Nephrology
Australian and New Zealand Society of Occupational Medicine
Australian College of Audiology
Australian College of Nurse Practitioners
Australian Diabetes Educators Society
Australian Diabetes Society
Australian Medical Association
Australian Medical Association (SA)
Cardiac Society of Australia and New Zealand
Epilepsy Society of Australia
Medical Insurance Group Australia
Movement Disorder Society of Australia and New Zealand
Occupational Therapy Australia
Optometry Australia
Orthoptics Australia
Royal Australasian College of Physicians
Royal Australian and New Zealand College of Ophthalmologists
Royal Australian and New Zealand College of Psychiatrists
Royal Australian College of General Practitioners
Royal College of Pathologists of Australasia
Rural Doctors Association of Australia
Stroke Society of Australasia

Public health and patient groups
Amputees NSW
Bicycle NSW
Bioptic Driver Australia
Dementia Australia
Diabetes Australia
Drive Change
Epilepsy Action Australia
Glaucoma Australia
Medical Cannabis Users Association of Australia
MS Australia
National Inclusive Transport Advocacy Network (on behalf of AFDO)

Stroke Foundation

Government agencies
Department for Infrastructure and Transport
Department of Transport and Main Roads
Department of Transport (WA)
Department of Transport (Vic)
Transport for New South Wales

Industry associations
Australian Trucking Association
Bus Industry Confederation
Livestock, Bulk and Rural Carriers Association
Gas Energy Australia
NatRoad
Royal Automobile Association of South Australia (RAA)
Royal Automobile Club of Queensland
Royal Automobile Club of Tasmania
Royal Automobile Club of Victoria

Research/academic institutions
Monash University Accident Research Centre
Victorian Institute of Forensic Medicine

Appendix C Condition-specific road safety literature analysis

Autism spectrum disorders and motor vehicle crash risk

No systematic reviews were identified that have investigated the relationship between ASD and motor vehicle crash (MVC) risk.

Two studies were identified that have investigated the relationship between ASD and self-reported MVC risk.

a) Daly et al. (2014) administered a survey to licensed ASD adult drivers (n = 78) and non-ASD drivers (n = 94) to investigate their driving history and driving behaviours (using the Driver Behaviour Questionnaire [DBQ]).

   Authors noted that drivers with ASD (compared with their non-ASD counterparts) self-reported a significantly higher number of intentional violations ($F[1, 162] = 6.15$, $p < 0.05$), mistakes ($F[1, 162] = 10.15$, $p < 0.01$) and slips/lapses ($F[1, 162] = 11.33$, $p < 0.01$); however, there was no significant difference across the two groups in terms of the number of self-reported MVCs ($X^2[1, n = 172] = 3.10$, $p = 0.08$).

   Nonetheless, it should be noted that these findings are based on self-report – although the authors did note that individuals with ASD may be more honest / less prone to social desirability bias than the control group. The authors were also unable to confirm ASD diagnoses.

b) Huang et al. (2012) administered a survey to parents of driving (n = 73) and non-driving (n = 175) teenagers with high-functioning ASD.

   The authors reported that 12 per cent of independent driving teenagers (defined as drivers with restricted or unrestricted licences) had been involved in at least one at-fault MVC and noted that this rate is lower than in the general teen driving population (12 per cent vs 22 per cent, respectively).

   However, it should be noted that these findings are based on the parents' self-report, are based on teenage drivers – who are also an at-risk driving population – and did not include any statistical comparisons with a control group.

Two reviews were identified that have investigated the relationship between ASD and driving performance (including on-road and driving simulator).

a) Lindsay (2017) systematically reviewed the literature related to the factors that affect driving and transportation experiences of people with ASD.

   The review identified 22 studies. Thirteen focused on factors affecting driving, including challenges in obtaining a licence, driving confidence, driving behaviours and strategies to improve driving skills. Nine explored rates of transportation use, access, cost and safety. Only one study reported on MVCs (Daly et al., 2014 – see description above).

   The review concluded that people with ASD encounter challenges in obtaining a driver licence as well as struggling with driving confidence and performance compared with people without ASD.

b) Wilson et al. (2018) conducted a scoping review on the peer-reviewed literature that has investigated the driving characteristics of drivers with ASD, as well as the driver training available for this cohort.

   The review identified 28 studies. Seven focused on on-road driving behaviours and transport statistics reports; nine focused on performance in driving simulators; nine focused on performance in virtual reality driving; and three focused on barriers to obtaining a licence and training of drivers on the spectrum.

Based on the on-road studies (e.g. Chee et al., 2017; Cox et al., 2012):

- Drivers with ASD had more difficulty performing complex driving functions that required multitasking skills (e.g. merging and using roundabouts).
- Drivers with ASD also had more difficulty driving in heavy traffic, night driving, maintaining the correct speed, lane maintenance, judging distance and undertaking long journeys.
- Drivers with ASD had decreased manoeuvring ability (particularly in left and right-hand turns) and increased response time to traffic hazards, particularly in circumstances that required interaction with other road users (e.g. being hesitant to merge into another lane when another driver had already gestured and reduced speed to allow the manoeuvre to happen) and found slight deviations from traffic rules of other drivers – a challenge and anxiety provoking.
- However, drivers with ASD performed better than neurotypical drivers in rule following aspects of driving, such as using the indicator and checking for traffic when approaching an intersection.

Based on the driving simulator studies (e.g. Bishop et al., 2017; Brooks et al. 2016; Classen, et al., 2013; Cox et al., 2016):

- There were no between group differences across drivers with ASD and control drivers in terms of: reaction time to hazard perception and motor response time during pre-driving assessments; errors of maintenance of lane position and speed; adjustment to distractions and poorer right-sided visual acuity; response time in braking; and overall driving ability.
- However, Reimer et al. (2013) reported that drivers with ASD showed different eye-gaze patterns. When responding to added cognitive demands, they positioned their vertical gaze higher and towards distant objects with more visual diversion. This can reduce the detection of hazards on the peripheral visual field of the individuals.

Despite the differences in findings across the on-road studies and driving simulator studies, the authors concluded that drivers with ASD drive differently from their neurotypical counterparts. Specifically, they noted the shortcomings in tactical skills of drivers with ASD but noted that the extent to which this affects their own safety or the safety of other road users is unclear.

Conclusion

There is not enough evidence to determine the MVC risk associated with ASD.

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Chronic fatigue syndrome and motor vehicle crash risk

While there is a large body of evidence that has explored the relationship between sleep disorders and motor vehicle crash (MVC) risk (see the latest MUARC compendium for the systematic review), as well as daytime sleepiness and fatigue in general, there is relatively little evidence that has explored the relationship between chronic fatigue syndrome and MVC risk.

No systematic reviews were identified that have investigated the relationship between chronic fatigue syndrome and MVC risk.

One review article was identified that has investigated the relationship between several prevalent medical conditions and the risk for drowsy-driving road MVCs.

- Smolensky et al. (2011) reviewed the potential contribution of allergic rhinitis, asthma, chronic obstructive pulmonary disease, rheumatoid arthritis/osteoarthritis, chronic fatigue syndrome and clinical sleep disorders (insomnia, obstructive sleep apnoea, narcolepsy, periodic limb movement of sleep and restless legs syndrome) – to the risk for drowsy-driving road MVCs.
- The authors concluded that, given the increasing attention given to chronic fatigue syndrome, it is unacceptable that there is an absence of literature pertaining to the relationship between chronic fatigue syndrome and drowsy-driving MVCs.

Several studies were identified that reported that they investigated the relationship between chronic fatigue and MVC risk (Bener et al., 2017; Liu et al., 2003; Sánchez-García et al., 2019); however, they did not specifically investigate chronic fatigue syndrome. For example:

- Sánchez-García et al. (2019) investigated the relationship between self-reported fatigue (including chronic fatigue) and self-reported the attentional errors while driving.
- The sample included 112 female participants (67 attending to infant children, 45 not attending to infant children) completing a questionnaire assessing both acute and chronic fatigue (using the Fatigue Assessment Scale [FAS]) and attention-related driving errors.
- The authors reported that participants attending to infant children (new mothers) had significantly higher levels of chronic fatigue than participants not attending to infants (n = 9.45 vs n = 6.1, $p < 0.01$).
- The authors concluded that chronic fatigue, but not acute fatigue, acted as a mediator variable for predicting attentional errors while driving.
- However, it should be noted that the information was provided via questionnaire and therefore may be subject to recall bias. Analyses did not control for driving exposure and the study did not specifically investigate chronic fatigue syndrome. The authors highlight that chronic fatigue in general is associated with attentional errors while driving.

No studies were identified that have investigated the relationship between chronic fatigue syndrome and driving simulator performance.

No studies were identified that have investigated the relationship between chronic fatigue syndrome and on-road driving performance.

Conclusion

There is not enough evidence to determine the MVC risk associated with chronic fatigue syndrome.

References

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Chronic pain and motor vehicle crash risk

No systematic reviews were identified that have investigated the relationship between chronic pain and motor vehicle crash (MVC) risk.

One study was identified that investigated the relationship between chronic pain and self-reported MVC risk.

- Seward et al. (2018) investigated self-reported MVCs and driving behaviour for people with chronic lower back pain (n = 315, mean age = 35.16 years, SD = 10.52).
- The authors administered a questionnaire about self-reported pain, MVCs, driving behaviour, mood and cognition over the previous 12-month period.
- The authors noted that, while people reported being more distracted, irritable and impatient with increasing pain intensity, there was no relationship between pain and MVCs.
- However, the study was limited by a small sample size. The information was provided via survey and therefore may be subject to recall bias.

One study was identified that has investigated the relationship between chronic pain and on-road driving performance.

- Veldhuijzen et al. (2006) investigated the on-road driving performance of individuals with chronic non-malignant pain, as well as measuring their driving-related skills (i.e. tracking, divided attention and memory), which were examined in a laboratory.
- The sample included 14 people with chronic non-malignant pain and 14 healthy controls, matched on age, educational level and driving experience. Participants performed a standardised on-road driving assessment during normal traffic, where the primary outcome measure was the Standard Deviation of Lateral Position (SDLP). Subjective assessments on pain intensity and driving quality were also rated. During the study, participants did not use psychotropic medication. Use of paracetamol and/or nonsteroidal anti-inflammatory drugs (NSAIDs) was discouraged but allowed.
- The authors reported a significant difference across the two groups for SDLP ($p < 0.01$). The mean SDLP was higher (indicating worse highway driving performance) for people with chronic pain compared with healthy controls (M = 25.2 cm, SD = 4.6, vs M = 20.7 cm, SD = 3.4, respectively). The difference in SDLP scores between groups was 4.5 cm; this difference corresponds to that observed in healthy volunteers who had a BAC equivalent to 0.08 per cent (Louwerens et al. 1987).
- However, no significant group differences on mean speed, SD of speed, mean lateral position and land excursions out of lane were observed in the adjacent lane in either group.
- Individuals with chronic non-malignant pain rated their driving quality to be normal, although their ratings were significantly lower than those of the healthy controls. No significant differences were observed across the two groups in terms of the driving-related skills examined in the laboratory.

The authors concluded that a subset of individuals with chronic nonmalignant pain had SDLPs that were higher than healthy controls, which resulted in an overall statistically significant difference.

The authors recommended that future studies focus on identifying the complex interaction between treatment efficiency and adverse drug effects given that chronic pain is often treated with psychotropic medicinal drugs, which are likely to affect driving ability.

The study was limited by a small sample size.

Conclusion

There is not enough evidence to determine the MVC risk associated with chronic pain.

References

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Dissociative events/episodes and motor vehicle crash risk

No systematic reviews were identified that have investigated the relationship between dissociative episodes/events and motor vehicle crash (MVC) risk.

No studies were identified that have investigated the relationship between dissociative episodes/events and:

- MVC risk
- road safety
- driving
- on-road driving performance.

Conclusion

There is not enough evidence to determine the MVC risk associated with dissociative episodes/events.

References

None identified.

Haemodialysis for kidney disease and motor vehicle crash risk

No systematic reviews were identified that have investigated the relationship between haemodialysis for kidney disease and motor vehicle crash (MVC) risk, nor kidney or renal disease/disorders and MVC risk.

One meta-analysis was identified that has investigated the relationship between renal disorders and MVC risk:

- Vaa (2003) conducted a meta-analysis that explored the relationships between health impairments and diseases and their relative risks of MVC involvement.
- Vaa noted that renal disorders (including both kidney disease and renal disease) were the only main category of health impairment that were not associated with an increased risk of MVC involvement (RR = 0.87, 95 per cent CI 0.54–1.34).
- However, Vaa cautioned this finding based on a limited number of studies (*n* = 3).

One review article was identified that has investigated the relationship between chronic kidney disease and driving fitness (Kepecs et al., 2018). The authors identified and reviewed five studies but noted that these studies include minimal data available at the early stages of the disease and that only two studies were published at a time when modern end-stage renal disease therapies were routinely provided.

Vats and Duffy (2010) administered a survey to 186 participants currently undergoing dialysis (haemodialysis: *n* = 161; peritoneal: *n* = 20; home haemodialysis: *n* = 5) related to their medical history and medication use, as well as high-risk driving behaviours and risk factors for impaired driving.

The authors 'arbitrarily' divided participants into two groups based on characteristics from their driving and medical history:

- Participants (*n* = 15) defined at 'absolute' risk for unsafe driving demonstrated a history of fainting during driving or falling asleep at the wheel.
- Participants (*n* = 136) defined at 'relative' risk for unsafe driving demonstrated a history of sleep apnoea or loud snoring, weakness prior to dialysis, or a self-reported history of episodes of hypoglycaemia.
- Responses provided by the remaining participants (*n* = 35) did not classify them into one of the risk categories.

The authors compared participants from the 'absolute' risk and 'relative' risk groups in terms of their self-reported comfort while driving, as well as the number of MVCs since initiation of dialysis:

- Of the 15 participants at 'absolute risk', 10 (66.7 per cent) were still driving to and from dialysis; only eight (53.3 per cent) reported that they were comfortable driving; and seven (46.7 per cent) reported being involved in an MVC.
- Of the participants at 'relative' risk, 60 (44.1 per cent) were still driving to and from dialysis; 64 (47.1 per cent) reported they were comfortable driving; and 30 (22.1 per cent) reported being involved in an MVC.

However, the authors did not compare the MVC rate across the two groups statisically; information was provided via survey and therefore may be subject to recall bias. There was no control group (i.e. participants **not** undergoing dialysis) to determine the MVC rate associated with dialysis.

Varela et al. (2015) recruited 106 participants undergoing dialysis (average age 53.4 years) and examined the utility of the American Medical Association's (AMA) 'Am I A Safe Driver' survey:

- 15 per cent of dialysis patients reported being involved in an MVC in the preceding three years, which is higher than the annual MVC rate for age-matched drivers in the general American driving population (3–4 per cent).
- The authors concluded that the AMA survey was sensitive but not specific for identifying drivers with 'absolute' or 'relative' risk factors for unsafe driving, as defined in by Vats & Duffy (2010).

However, the authors did not compare the MVC rate across the two groups statisically; information was provided via survey and therefore may be subject to recall bias.

Kepecs et al. (2018) concluded that the relationship between chronic kidney disease and MVC risk and/or driving safety remains poorly understood and that their review is limited by the lack of randomised control studies.

No studies were identified that have investigated the relationship between haemodialysis for kidney disease and on-road driving performance.

Conclusion

There is not enough evidence to determine the MVC risk associated with haemodialysis for kidney disease.

References

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Psychogenic non-epileptic seizures (PNES) and motor vehicle crash risk

While there is a large body of evidence that has explored the relationship between epilepsy and motor vehicle crash (MVC) risk (see the latest MUARC compendium for the systematic review), there is relatively little evidence that has explored the relationship between PNES and MVC risk (Kang & Mintzer, 2016).

No systematic reviews were identified that have investigated the relationship between PNES and MVC risk.

Only one study was identified that investigated the relationship between PNES and MVC risk:

- Benbadis et al. (2000) studied 20 people with PNES (diagnosed by prolonged EEG-video monitoring).
- The authors obtained the participants' driving records over a five-year period from the Wisconsin Department of Transportation and used the 1991 Wisconsin MVC data as the reference year.
- The authors noted that no individual with PNES had any licence/driving restrictions.
- The authors noted individuals with PNES did not have a significantly higher number of MVCs (n = 8, no fatal MVCs) compared with the general driving population – even if they assumed that all MVCs were the result of the individuals experiencing a PNES at the time of the MVC ('worst-case-scenario' assumption).
- The authors noted several limitations, including the small sample size and the fact that they did not account for driving exposure, acknowledging that the results should be interpreted with caution.

No studies were identified that have investigated the relationship between PNES and on-road driving performance.

Asadi-Pooya and Homayoun (2020) recently investigated the rate of driving for 221 people with PNES:

- The authors noted that 21.7 per cent regularly drove a vehicle, and that being male (OR = 13.2; 95 per cent CI 4.98–35.45; $p < 0.001$) and employed (OR = 8.08; 95 per cent CI 3.16–20.69; $p < 0.001$) was significantly associated with driving.
- Although the authors made no conclusions about the MVC risk or road safety issues associated with PNES, they noted the lack of research in this area and recommended that fitness-to-drive guidelines be developed for drivers with PNES.

A report published by the International League Against Epilepsy summarised the views of international experts regarding PNES-related driving regulations (Asadi-Pooya et al., 2020):

- While most health professional thought the restrictions were appropriate, the authors recommended that fitness-to-drive decisions should be made at an individual level.
- Asadi-Pooya et al. concluded that until the evidence regarding MVC risk for drivers with PNES is established, their proposed algorithm could guide decisions about driving advice.

Conclusion

There is not enough evidence to determine the MVC risk associated with PNES/pseudoseizures.

References

Asadi-Pooya, A. A., & Homayoun, M. (2020). Driving in patients with psychogenic nonepileptic seizures. Epilepsy & Behavior, 105, 106991.

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Vestibular disorders and motor vehicle crash risk

No systematic reviews were identified that have investigated the relationship between vestibular disorders and motor vehicle crash (MVC) risk.

One study was identified that investigated the relationship between vestibular disorders and MVC risk:

- Cohen et al. (2003) administered the Driving Habits Questionnaire (DHQ) to people who had been diagnosed with impairments of the peripheral vestibular system and all experienced vertigo (benign paroxysmal position vertigo [BPPV]: *n* = 34; chronic vestibulopathy: *n* = 27; Ménière's disease: *n* = 48; postoperative: *n* = 9; acoustic neuroma: *n* = 7; nerve section: *n* = 2), as well as to healthy controls (*n* = 51), to explore self-reported driving impairment and MVCs resulting from dizziness.
- The authors noted that there were no differences across the two groups in terms of self-reported MVCs; however, they did not report the MVC crash rates nor the statistical comparison.
- The study was limited by its small sample size and the sample heterogeneity of vestibular disorders; information was provided via survey and therefore may be subject to recall bias.

One study was identified that investigated the relationship between vestibular disorders and on-road driving performance:

- MacDougall et al. (2009) conducted an on-road study to compare the driving performance of individuals with bilateral vestibular loss (BVL, *n* = 3) and aged-matched controls (*n* = 3).
- The authors assessed point-of-regard (i.e. what the driver was looking at and attending to) and head movement during difficult manoeuvres (e.g. parking, changing lanes etc.).
- Subjective assessments by a driver-trained occupational therapist and an orthoptist, as well as objective measures, identified few differences in behaviour or performance across individuals with BVL and age-matched controls.
- The authors concluded that driving was unlikely to be affected adversely due to little or no peripheral vestibular function.
- However, the results were based on the assessment of only three individuals with BVL (all of whom were aged 50 years or older) and their age-matched controls.
- Further, the participants with BVL were potentially exhibiting differing symptoms and limitations in everyday activities compared with those with unilateral paroxysmal vestibular dysfunction or Ménière's disease, which the authors admit, may be more likely to adversely affect driving ability, particularly during 'sudden vestibular challenges' (Cohen et al., 2003; MacDougall et al., 2009).

It should be noted that this search broadly investigated the relationship between vestibular disorders and MVC risk. However, due to time constraints, it was not possible to conduct separate searches for benign paroxysmal position vertigo (BPPV), chronic peripheral vestibulopathy, Ménière's disease, post-vestibular nerve section or acoustic neuroma – all of which have the potential to affect MVC risk or driving performance (Cohen et al., 2004).

Conclusion

There is not enough evidence to determine the MVC risk associated with vestibular disorders.

References

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