



MONASH University

Accident Research Centre

‘SENIORS DRIVING LONGER, SMARTER, SAFER’: AN OLDER DRIVER TRAINING PROGRAM

PART B: FACILITATOR’S MANUAL AND PROGRAM MATERIALS

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The 'Seniors Driving Longer, Smarter, Safer' is an educational program designed to provide older drivers with knowledge of crash and injury risk; raise awareness of changing functional abilities and the impact on driving behaviour and performance; promote strategies to keep driving for as long as possible and to plan ahead for a successful transition from driver to non-driver.

Procedure and materials provided

The workshop should be run using the powerpoint slides provided, the manual providing road safety messages for each slide, and materials and props to run activities demonstrating the effects of ageing on driving ability. Some examples are provided in this manual, others are bound by Copyright and details on where to obtain materials are provided. A laptop and data projector are required for the workshop. The program is designed for approximately 25 to 30 participants. The program is designed to be conducted in four sessions over two days, with sessions starting around 10am and finishing around 3pm on each day. The four sessions include:

Session 1: Overall introduction and presentation of crash and injury risk

This first session sets the scene for the program and outlines methods of introducing facilitators and participants, discussing the aims of the program and providing a schedule of the workshops. Following this, a presentation of safety and mobility issues is given, focussing on the importance of mobility, future demographic changes, crash statistics, challenging driving situations and crash types.

Session 2: Awareness of functional abilities

The second session aims to raise the awareness of the impact of age-related changes in functional abilities on driving behaviour and performance. Facilitators are given clear instructions on how to conduct these activities, and, for each activity, participants are given written instructions to carry out the activities. Following the activities, facilitators should summarise the evidence of these changes as they relate to driving ability.

This session requires the use of a number of computer-based and pen and paper functional assessment tools and 'props' aimed to demonstrate changes in visual, perceptual and attentional, cognitive and memory, and physical abilities.

A selection of materials, props and commonly used assessments are listed here for use in Session 2 to demonstrate the effects of ageing.

Please note: The purpose for using these resources is to demonstrate the effects of age-related functional changes, rather than for individual test or assessment purposes. Other suitable functional measures could be used instead of the suggested examples. The main focus is to highlight particular limitations that might result from distraction, cognitive overload, visual declines, etc.

Some of these suggested assessments are bound by Copyright and permission should be sought for use in a commercial context. Some useful examples are listed below:

- Computer-based Useful Field of View (UFOV[©])¹
- Computer-based Hazard Perception videos (permission to use required by MUARC)²
- Motor-Free Visual Perception Test Version 3(MVPT-3[©])³
- Trail Making Test (Parts A & B)
- Props to simulate changes in vision, attention, memory and physical abilities, such as glasses and eye charts to simulate visual acuity and contrast sensitivity decline, ankle weights and wrist bands, attention distractors, etc.

Session 3: Alternative transport and mobility options

This session discusses the importance of maintaining mobility, through adoption of appropriate self-regulatory driving practices, reduction and cessation of driving. This session provides some strategies to plan ahead for driving cessation, particularly the use of alternative transport options.

Session 4: Other strategies to manage successful mobility and reduce risk

This session follows on from session 3, providing additional ways to maintain safe driving practices including driving patterns and practices, and ensuring comfort and safety in vehicles. This session discusses choice of vehicles and vehicle safety resources and provides details of vehicle safety features (crash protection). Ways to adapt vehicles to increase comfort and improve safety are covered in this session, and a refresher on key road rules is presented.

Presentation style and teaching methods

The program is designed to be run by two facilitators. It is anticipated that the presenters will have a sound knowledge of the health and psychology of ageing and road safety and experience in adult education program delivery. Presentation during each session should be shared between facilitators.

In addition to following instructions regarding format and procedure of the program, the application of basic principles of adult education and teaching strategies are key to ensure interaction of participants during the program and maximum benefit from attending the program. It is clear from the literature that adults have special needs and requirements as learners and they approach learning in a different way than children and adolescents, and this is mainly due to their life experience.

¹ UFOV can be ordered online: <http://www.positscience.com/science/detailed-information/program-design/ufov>

² Hazard perception videos can be obtained by contacting the report authors (MUARC)

³ MVPT-3 can be ordered online: <http://shop.acer.edu.au/acer-shop/group/QBZ/32;jsessionid=BB8E7D15BB02AA8A078112FBE7002E5D>

Facilitators should keep in mind throughout delivery of the program that:

- **Adults support themselves, are autonomous and therefore are generally self directed. Adult learners need to be free to direct themselves.**

Facilitators should therefore i) actively involve adult participants in the learning process and serve as facilitators for them, ii) seek participants' perspectives about each topic, iii) allow participants to assume responsibility for presentations and group leadership, and iv) guide participants to their own knowledge rather than supplying them with facts.

- **Adults seek out learning experiences to cope with life-changing events such as retiring from work and tend to expect that learning will be rewarding. Adults have accumulated a foundation of life experiences and knowledge that may include work-related activities, family responsibilities, and previous education. They need to connect learning to this knowledge/experience base.**

Facilitators should therefore i) recognise the value of experience in learning, and ii) draw out participants' experience and knowledge which is relevant to the topic, relate theories and concepts to the participants and recognize the value of experience in learning;

- **Adults are goal-oriented and tend to learn when they need to in order to solve a problem or fulfil a need. Therefore, adult participants usually know what goal they want to attain and appreciate an educational program that is organized and has clearly defined elements.**

Facilitators should therefore demonstrate to participants how the program will help them attain their goals.

- **Adults are relevancy-oriented and have their own ideas about what topics/concepts/skills are important to learn. It is therefore important that they see a reason for learning something. Learning should be applicable to their work, daily activities or other responsibilities to be of value to them.**

Facilitators should therefore i) identify objectives for adult participants before the course begins, ii) relate theories and concepts to participants' existing knowledge, and iii) create a familiar atmosphere and allow participants to use all of their senses to learn.

- **Adults are practical, generally concerned about effective use of time, and focus on the aspects of a program that are most useful to them in their daily life.**

Facilitators should therefore i) tell participants explicitly how the lesson will be useful to them to undertake their daily activities, ii) allow them opportunities to practice their new skills and apply their new knowledge, iii) allow them adequate time to make sense of and value new information, and iv) provide specific feedback on their progress.

- **Adults draw on their life experiences in order to relate new learning and are more likely than children to reject or explain away information that contradicts their experiences or beliefs.**

Facilitators should therefore i) show respect and acknowledge the wealth of experiences that adult participants bring to the classroom, ii) ensure participants are actively involved in the learning process, iii) treat participants as equals in experience and knowledge, and iv) allow them to voice their opinions freely in class.

In sum, successful delivery of the program requires substantial responsibility on the part of the facilitators and by adopting basic adult teaching strategies, a more rewarding and effective experience will result for participants and therefore enhance the effectiveness of this program.

Delivery of the program

The remainder of this manual provides a detailed guide to deliver each session of the program, with powerpoint slides, key messages and example text to be delivered for each slide, and clear instructions to conduct activities and group discussions.

Session 1: Overall introduction and presentation of crash and injury risk

Requirements: Session 1 powerpoint file (15 slides).

Session time: Approximately 45 minutes

The overall aim is to introduce the presenters, the program, and present crash and injury risk statistics. Slides 1-3 are introductory slides where presenters should introduce themselves and ask each participant to introduce themselves to the group. Slides 4-6 introduce general demographic changes. Slides 7-12 discuss the implications of demographic changes on older driver crash risk, and Slides 13 and 14 discuss difficult driving situations and crash types. Slide 15 summarises the session.

***Slides 1-3:** Here facilitators will provide an overview of the day. Facilitators will introduce the topic of the day, inform the participants of the aim of the workshop and how the day will progress.*

SLIDE 1: INTRODUCTION



Facilitators should welcome participants, introduce themselves, stating their background and ask participants to briefly introduce themselves, stating their name, and offer some background or main interests if they wish.

Facilitator 1: *Provide introductory remarks and welcomes.* For example: “Welcome and thank you for attending this program. We hope you’re going to enjoy talking about driving with us today and that you can get a lot out of this program. Before we get to know you, we’d like to briefly introduce ourselves and the team of researchers that have worked on developing this training program.” *Introduce Facilitator 2 here, describing their background and interests in road safety and mobility.*


Facilitator 2: *Introduce Facilitator 1 here, as above,* then begin an introduction of the program. For example: “These backgrounds give us a good understanding of the skills needed to drive safely, and we’ll briefly be looking at some of these tasks later in today’s session – this is aimed at showing you some of the many skills that are required for driving and how the natural ageing process can effect some of these skills.”

Facilitator 1: This program was developed by the Monash University Accident Research Centre, with the support and funding from the NRMA-ACT Road Safety Trust. The team at Monash University have undertaken research and developed initiatives regarding the safe mobility of senior drivers over the past 15-20 years. The team includes Dr Judith Charlton, Dr Jennie Oxley, Ms Michelle Whelan and Ms Anna Devlin, and together, they have written many national and international journal articles and reports, and have a strong involvement and commitment to improving the safety of older road users. Their research is underpinned by the notion that drivers should be able to drive for as long as it is safe to do so, and that any decisions about stopping driving should be made on the basis of ability and not age. So the main goal of this program is to teach you about how to keep driving safely for as long as possible.

Facilitator 2: Continuation of introductory remarks. For example: “I want to expand on that point about licensing to say that this program is not focussed on licensing issues. We know that in the ACT once a driver reaches the age of 75 years that they are required to sit vision and medical tests each year. And, in some case they may be required to complete an on-road driving test. However, best practice research indicates that age-based mandatory testing is not beneficial for a range of reasons.”

Facilitators should also inform participants that a workshop package, is provided which includes a copy of the presentations for the day for them to make notes, as well as a workshop evaluation form, and a safety handbook with detailed information on some of the topics covered in the training sessions. Facilitators should state that participants should feel free to ask questions at any point during the training program or make comments/observations.

SLIDE 2: AIM OF PROGRAM



Aim Of Program

Background aim:

- Discuss issues surrounding safe mobility

Specific aims and points of discussion:

- How does driving change as you age?
- How can you stay driving safer, for longer?
- When and how to change your driving?
- What other transport options are available

Facilitator 1: “As a result of some of the research that the Monash University Accident Research Centre has conducted, it was clear that there was a need for a training and awareness program.

This is what this program is aimed at – to consider issues surrounding safe mobility.

The overall aim of the training package and handbook is to raise awareness amongst older drivers of the issues surrounding older driver safe mobility, provide information on the effects of ageing on driving performance and crash risk, inform older drivers about ways that they can maintain safe driving (addressing issues specific to both male and female drivers), and, to provide information on reduction and cessation of driving and alternative transport options.”

Facilitator 2: So, the aims are to consider four important areas:

1. How driving may change as you age;
2. How drivers can continue to drive safer and smarter for longer;
3. How and when to reduce driving; and.
4. How to be mobile by using alternative transport options other than driving.

In this program we are not trying to single people out, for the most part we know from the research that the majority of older drivers are successful in keeping themselves safe; it’s only a subset of the overall group that experience some problems. Also it’s not that older drivers are ‘risky’ drivers, rather they are at risk.

SLIDE 3: PROGRAM OUTLINE

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Program Outline	
DAY ONE: Welcome morning tea (10am) Session 1 (10.30am-12.00pm) Introduction to older drivers, their safety and mobility The crash types of drivers aged 65+ Lunch Session 2 (1.00pm – 3.30pm) Skills for driving that can decline with age Afternoon tea	DAY TWO: Welcome morning tea (10am) Session 3 (10.30am-12.00pm) Mobility options other than driving Strategies to maintain mobility Lunch Session 4 (1.00pm – 3.30pm) Skills for driving that can decline with age Afternoon tea

Facilitator 1: The training program will be conducted over two days. The first day will include an overview of the types of crashes that older drivers are commonly involved in, and will then move on to informing participants about how skills and functional abilities required for driving can deteriorate with age, explaining the theory behind this and illustrating with some practical activities. Overall, day 1 of the program is designed to inform participants about which types of crashes that older drivers are involved in, and the types of functional abilities that decline with age which are considered to be important for safe driving.

Facilitator 2: The second day of training builds on day 1 by providing information about ways to access transport safely, including alternatives to driving, and also provides strategies to decrease the risk of being involved in a crash. Overall, day 2 of the program is

concerned with the application of knowledge of the training sessions on crash types and functional abilities to maintain safe mobility for longer.

Activity: Introduction of participants: Here participants are invited to introduce themselves to other participants informally. The method will depend on the size of the group and available time (approx 15 mins maximum). Suggestions include each participant to introduce themselves to two other participants they don't know, and to tell them something interesting about their driving experiences. The facilitator could invite two or three participants to introduce their fellow participant to the whole group.

Slides 4-9: These slides address the important issues of mobility and demographic changes in the older population, providing background evidence as to why there is research focussed on older driver safe mobility.

SLIDE 4: IMPORTANCE OF MOBILITY

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The importance of mobility

- Mobility is critical for maintaining health, independence and quality of life
- Focus is NOT on licensing issues
- Driving is the preferred and safest travel mode



Facilitator 1:

Activity: Ask each participant to estimate how long they have been driving. As you go around the group, calculate the total years of driving – for a group of 15 participants, it should be approximately 750 years, for 20 participants, approximately 1000 years.

“If we take the combined total of all of your years’ driving experience we see an approximate number **** years of driving. So you have a lot of experience to draw on for our program.”

Facilitator 2: “By driving to get to places you have mobility. Mobility is very important for our well being. It allows us the freedom to get to places when we like, allows independence and a high quality of life. As we mentioned in our introduction our focus is not on de-licensing but on promoting safe driving and extending mobility.

In terms of safety, the research shows that driving in a car is the safest and preferred mode of travel. This last point demonstrates that driving is even safer than walking for those over the age of 65. However walking is included in every driving trip, so there is a trade-off between driver and pedestrian risks and this is something we’ll discuss in our next session.”

SLIDE 5: DEMOGRAPHICS

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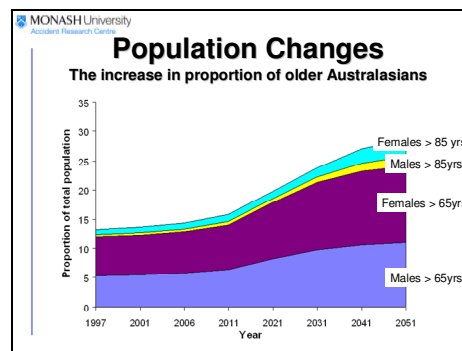
Future Demographic Changes

- Population growth - the 'greying' of society
- Changes in licensing rates
- Changes in driving and travel patterns

Facilitator 2: Our society is constantly changing, and there are three major demographic changes that are predicted in the future that will affect the crash and injury risk of older drivers over the coming years.

You have probably heard about the 'greying' of society, well we're also going to see a change in licensing rates, and changes in driving and travel patterns. We're going to talk about these three demographic changes in turn. It's a bit like looking into a crystal ball, but it will give you an idea as to where some societal changes are predicted to occur.

SLIDE 6: DEMOGRAPHICS



Facilitator 2: This graph shows the proportion of the total population above the age of 65 from 1997 to 2051.

Activity: Ask participants to indicate if they are between 65 and 85 year; and then those 85 years and above.

According to the graph, the proportion in the population of each of these age groups will increase substantially. In 40 years time the proportion of people aged 65 years and older will roughly double.

In 1997, 13 percent of the population was aged greater than 65, and this will increase to 27 percent in 2051.

Activity: Ask participants again to put up their hands if they are 85 years and older, then ask the males to put their hands down, leaving the females in this age group with their hands up.

The group who has their hands up now, females aged 85 years and older, is going to increase more dramatically than any of the other groups.

SLIDE 7: LICENSING AND DRIVING PATTERNS

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Licensing and driving patterns


- Seniors are becoming much more mobile and vehicle dependent.
- Increased licensing rates:
 - Predictions are a doubling in the rate of licenses held by men over 70 years and a tripling by women in this age group by 2020.
- Increased travelling distances:
 - Older drivers are driving longer distances than ever before

Facilitator 1: In addition to increases in the proportion of seniors in the population, the research also tells us that there are changes in mobility and vehicle dependence. This is because of increases in number of seniors keeping their licence and increased distances travelled. Also, seniors will be driving later into their lives due to an increased life expectancy.

SLIDE 8: IMPACT ON DRIVING

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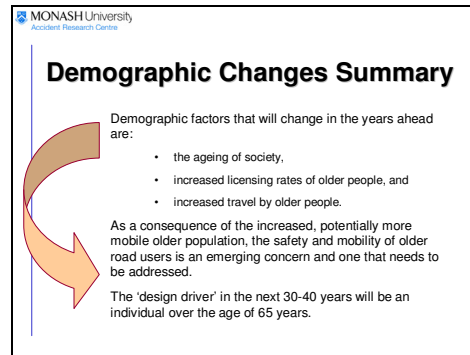
So what does this mean for driving?



Facilitator 1: There will be an increase in the number of senior drivers on the roads and the distances they will be travelling. This will result in an increase in exposure which will also mean an increase in crashes. Actually, research suggests that there could well be a three-fold increase in fatalities over the next 20-30 years for drivers aged 65+ unless effective strategies are put in place to address this.

Facilitator 2: Therefore, it is imperative that we develop appropriate countermeasures or initiatives to reduce the risks on the road to seniors. These countermeasures could address the areas of vehicle design, road infrastructure and driver education. Driver education may involve practical refresher training on the road or, like this program, may reinforce the activities that individuals can do in order to keep themselves driving safer for longer.

SLIDE 9: DEMOGRAPHICS SUMMARY



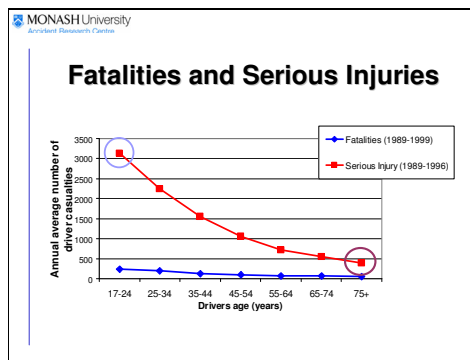
Facilitator 2: *Before summarizing, participants should be given the opportunity to ask any questions or provide comments about this shift in demographics.* Discussion to be led by Facilitator 2.

Facilitator 1: *Provide an overall summary of this section.* For example: “Let’s summarise and reflect on these demographics. (Read through each dot point on the slide). You can see here that our governments and research organisations will need to (if they haven’t already) shift their thinking towards this group of drivers.

Although these demographic changes are just starting to occur (as the first of the ‘baby-boomers’ turn 65 years or age), we need to gain as much of an understanding of your experiences as a driver in order to develop training programs to educate as many drivers of the age of 65 as possible.”

Slides 10-12: *These slides provide the background statistics on older driver crash and injury risk and explain their meaning and impact on how we manage older driver safe mobility.*

SLIDE 10: STATISTICS



Facilitator 1: *Here some statistics will be presented.* For example: “Now we are going to look at some crash statistics. First, this graph shows the average yearly number of casualties (fatalities and serious injuries) by age group”. *Point along both the x and y axes to explain age groupings (x axis), and number of fatalities and serious injuries (y axis).*

“The fatalities are represented by the blue line, while the serious injuries are displayed by this red line. The average number of fatalities is higher for younger drivers compared with older drivers (difficult to see on this scale, but the figures are approximately 50 vs 250). However, this effect is much more prominent for serious injuries: serious injuries are substantially higher for the youngest drivers.”

Press keyboard or mouse to advance to two circles displayed on the graph, and explain. For example: “On average 3,000 younger drivers are seriously injured in crashes compared to less than 500 older drivers.”

Facilitator 2: *Continue the discussion.* For example: “However, it is important to note that this graph does not show us the whole picture. It shows the average numbers of crashes per age group, and there are some other factors that we need to take into account.”

SLIDE 11: STATISTICS

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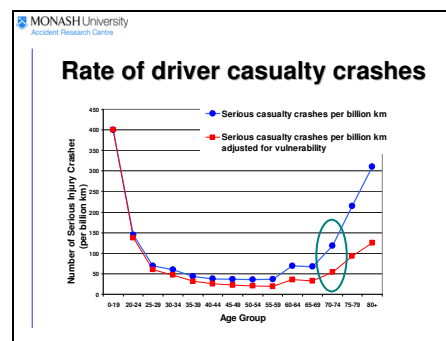
Fatalities and Serious Injuries

- Older drivers have fewer serious injury crashes than younger drivers, HOWEVER:
 - there are fewer older drivers,
 - their total distance traveled tends to be less, and
 - they are more frail
- When these factors are accounted for, older drivers are overrepresented in serious injury and fatal crashes compared with middle-aged drivers

Facilitator 2: “While these statistics tell us that older drivers have fewer fatal and serious injury crashes compared to younger drivers, the previous graph does not take in to account three important facts. One, there are fewer older drivers compared with drivers of younger ages. Two, their total distance travelled is generally less. Three, older adults are more frail than younger adults.”

Provide an example to demonstrate here. For example: “If two drivers aged 28 years and 88 years had a similar crash, the 88 year old driver would be more likely to suffer more serious injuries than the younger driver because of their greater frailty – that is, reduced bone density and strength. Therefore, once these factors (listed on the screen) are taken in to account we start to see a different story.....There is a lot of information to take in here, so we will just give you a moment to have a think and, please, ask any questions.” *Invite participants to ask questions or provide comment or explain the graph to another participant in their own words.*

SLIDE 12: STATISTICS



Facilitator 1: This graph specifically illustrates the point we were just making. When we take any of these factors into account, whether it is population numbers, number of licensed drivers, or distance travelled, we see that the *rate* of crashes is still high for younger drivers, but it is also high for drivers 65 and above (compared with middle-aged drivers) – therefore the safety of older drivers is clearly of concern.

This graph shows the rate of serious injuries by one of these factors, distance travelled (i.e., the number of serious injury crashes per billion kilometres travelled by driver age group. It is clear that young drivers are at increased risk of having a crash and this is largely due to their lack of experience. But you can also see that, for older drivers, the rate of serious injury crashes begins to rise sharply at ages 70 years and above. *Press keyboard or mouse to advance to circle displayed on the graph.*

Facilitator 2: *Here, the issues of frailty should be re-emphasised.* For example: “I would also like to talk a little more about frailty here again. You can see that we are showing both a red and blue line, that is showing the rates with and without adjustment for differences in physical vulnerability (in other words, frailty). The blue line shows the rate unadjusted, while the red line shows the rate adjusted for vulnerability.” *Point to both the blue and red lines.*

“Even after controlling for differences in frailty/vulnerability across the lifespan (older people are more easily injured by a given physical insult than younger people) we still see an increase in older driver crashes. This is particularly so for drivers aged 70 years and older – this group has higher serious injury crash risk than younger drivers with the exception of the youngest driver age group (under 25 years).

This means that, while frailty plays a large role in fatal and serious injury crash involvement, it is not the only contributor. So, you may be wondering what other factors contribute to older driver crashes.” *Introduce the next set of slides to present other factors.*

Slides 13-15: *These slides follow on by explaining some of these statistics, particularly focussing on the factors that may increase crash and injury risk for older drivers, particularly age-related frailty, functional changes that may result in difficulty in driving in some situations, and the resulting typical crash types that we see amongst older drivers compared with younger drivers.*

SLIDE 12: STATISTICS

Why the high fatal and serious injury crash involvement?

- Frailty, vulnerability to injury
- Driving fewer kilometres
- Change in functional abilities
 - Attentional/Cognitive
 - Sensory/Perceptual...vision
 - Physical
- Chronic illness/ medical conditions

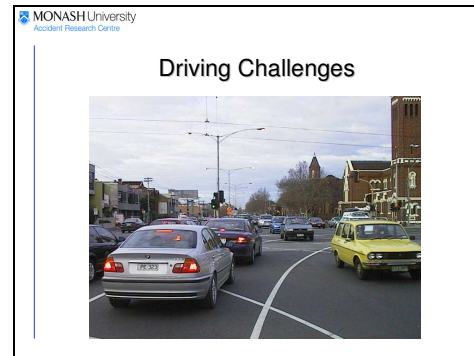
Prevalent in older population

Facilitator 1: “In addition to frailty, there are some other factors to consider. The research tells us that, for most drivers aged over 65 years, frailty explains some of the risk, for some low mileage explains the risk, and for fewer it’s due to reduced fitness to drive.

Here, Facilitator 1 should explain the ‘low mileage’ issue. For example: “We need to consider overall driving distance and exposure in more detail because we know that there are some who drive more frequently and longer distances than other drivers, and that those who drive longer distances (at any age) are less likely to be involved in crashes, compared with those driving shorter distances.

For older drivers who drive shorter distances, the research shows that they are at greater risk of crash involvement. This may be due to a number of associated factors. For example, it may be that some are driving fewer kilometres because of reduced fitness to drive, perhaps they have medical conditions or impairments that restrict their driving, or they lack confidence. Or it could be the type of roads they tend to drive on – often those driving short distances are driving on urban roads that we know have more traffic, more complicated traffic conditions, more intersections and therefore more risk of a crash.

SLIDE 13: DRIVING DIFFICULTIES



Facilitator 2: Here difficult driving situations are presented and discussed. For example: “We would now like to now look at some of the driving situations that many seniors find difficult, and which some seniors specifically avoid altogether. Note that avoiding certain driving situations altogether can be quite a safe way of acknowledging your own limits.” *An example from the facilitator’s own experience is suggested here. For example, you could relate the experience of moving from a rural town to a large city and describe the challenges that you experienced, such as negotiating a complex intersection.*


Following this, the facilitator should invite the participants to discuss some situations that they find difficult, particularly asking participants to relate experiences, situations they avoid, and explaining what they did to deal with the situation.

Summarise the discussion. For example: “Thank you for your ideas. This session was designed to understand your thoughts about challenging driving situations. The idea of avoiding a certain driving situation because you find it difficult, is often termed self-regulation by researchers, meaning you regulate your own driving depending on your abilities and comfort zone.”


Introduce the research addressing crash types. For example: “We are now going to take a look at what the research says about crashes that involve drivers of the age of 65. These crash types are based on research. It will be interesting to see if the driving situations that you have just mentioned overlap with crash types from the research.

Invite participants to identify some of the crashes that they think are common amongst older drivers. Points to consider during the discussion follow.

SLIDE 14: CRASH TYPES



Crash types



- during daylight hours,
- low blood alcohol levels
- at low speeds
- at intersections – often making right turns
- multi-vehicles - often failing to give way with a severe injury outcome

The types of crashes older drivers are involved in are different than those involving younger drivers and may reflect their different driving behaviour and declining functional performance

Facilitator 1: *This slide is designed to be shown at the end of the discussion on the types of crashes that older drivers are commonly involved. The first bullet point should be shown, and the second bullet point should only show the text before the crash types - do not show the crash types. Rather, promote a discussion/ brainstorm session between participants for them to come up with the crash types.*

Please note that this list is based on scientific literature and as such is not modifiable, so ensure that you, as Facilitator, and participants keep to this list as much as possible. If participants suggest crash types that are not on this list (for example, rear-end crashes) reply with a positive suggestion such as “whilst rear-end crashes is a good suggestion, it’s not really one of the most important serious injury crash types that older drivers are involved in.” Then, continue your focus on this participant but also prompt the group also as to an area they haven’t really been thinking about. For example “What about thinking about the most common time that older drivers are more likely to drive, and at what speeds?”

If participants are close to identifying a crash type, for example they suggest built-up areas, suggest that “yes that’s true, but can you tell me something in particular about the built-up areas, will it be when they are driving through a busy shopping strip or could it be more when they’re at an intersection”. Continue this until participants understand that it’s not only at intersections but particularly when making right-hand turns at non-signalised traffic lights. Some participants may find this task difficult, if this is the case, break the ice by showing the first few crash types (i.e. driving during daylight hours, at intersections often when making right-hand turns). After 5- 10-minutes of discussion whereby the participants are suggesting the common crash types, offer to put the complete list up and summarise.


An example to lead the discussion is: “Research shows us that older drivers have different types of crashes to other age groups of drivers. Young drivers often are involved in single vehicle crashes, at high speed and involving alcohol. In contrast, older drivers tend to have more crashes during daylight hours. Older drivers also are less likely to be involved in alcohol-related and high speed crashes. These patterns are consistent with what we know about driving patterns and behaviour of older drivers. For instance, many older drivers avoid driving at night, and they don’t speed, so we would expect that crashes would occur during the day at low speed.

Also, typically more of their crashes are at intersections, multi-vehicle crashes, and the injury outcomes are often severe. We know that intersections can be complicated, drivers need to make judgements about gaps in traffic, make quick decisions, etc. and we often hear from Police reports that in some older driver crashes, the drivers ‘looked but didn’t

see'. This may reflect a decline in functional abilities such as memory, vision, and physical abilities.

The fact that injury outcomes are more likely to be severe for older drivers, can be explained by their frailty with a severe injury outcome (due to frailty which we just discussed).”

SLIDE 15: SUMMARY



Summary

- Driving is important for mobility
- An ageing population
- Crash rates
- Crash types
- Changing functional abilities

This is the summary slide for the session. Facilitators should reinforce the five key points addressed in this session.

Session 2: Awareness of functional abilities

Requirements: Session 2 powerpoint file (20 slides).

Suggested materials to run activities (refer p.59 to obtain resources):

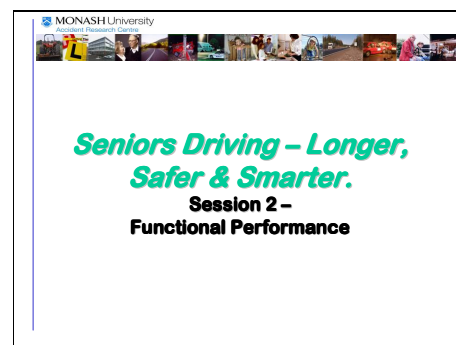
- Computer-based Useful Field of View (UFOV[®])
- Computer-based Hazard Perception videos (permission to use required by MUARC)
- Trail Making Test (Parts A & B)
- Motor-Free Visual Perception Test Version 3(MVPT-3[®])
- Props to simulate functional changes, such as glasses to simulate visual acuity decline, ankle weights and wrist bands, attention distractors, etc

Session time: Approximately 2 hours

The overall aim of this session is to raise the awareness of age-related changes in functional performance and how these may impact on driving ability. The presentation and activities are designed to demonstrate, using a number of activities, that changes in vision, attention, cognition and physical attributes can affect performance on a number of activities related to good driving performance.

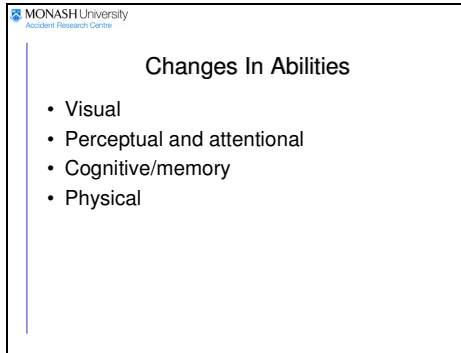
Facilitators are required to familiarise themselves with these activities and procedures prior to running the program. Suggestions for activities are provided below. Throughout this session, you will be moving from large group activities to small group activities. This approach should ensure maximum interaction and participation from all participants.

SLIDE 1: INTRODUCTION



Facilitator 2: *This is the introductory slide – here the facilitator shall explain briefly the aim of the session and types of activities and the format of the session. For example: “In this session we are going to look at some of the skills involved in driving and how they change with age. We’ll also break in to groups and do some activities in this session which will include both computerised tasks and pen and paper tasks.”*

SLIDE 2: INTRODUCTION



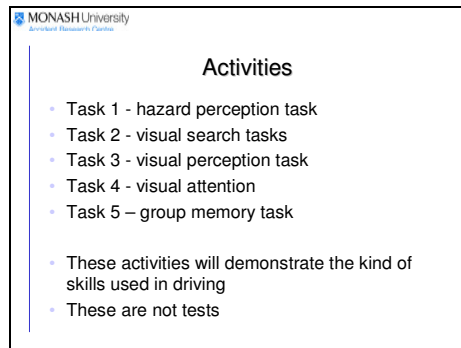
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Changes In Abilities

- Visual
- Perceptual and attentional
- Cognitive/memory
- Physical

Facilitator 1: *Introduce the areas where most age-related changes occur that can affect driving performance and crash risk.* For example: “There are a number of changes that can occur due to the natural ageing process. These functional changes occur across a wide range of areas including vision, perception and attention, cognition and memory and physical capacities. However everyone ages differently, it’s just a part of life. We are not suggesting that everyone over 65 will necessarily experience a change in all these areas but some may in some area. Because the research tells us these abilities are important for safe driving, it is important for us to look at some of the things that may happen in the ageing process and how these might impact on safe driving ability.”

SLIDE 3: ACTIVITIES



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Activities

- Task 1 - hazard perception task
- Task 2 - visual search tasks
- Task 3 - visual perception task
- Task 4 - visual attention
- Task 5 – group memory task
- These activities will demonstrate the kind of skills used in driving
- These are not tests

Facilitator 2: Tasks and activities should be introduced here. Facilitators are required to select tools and resources to demonstrate each area of functional performance. There are five activities planned for this section.

It is proposed that the large group be divided into four smaller groups and each assigned to one of the tasks, rotating around the five tasks as time permits. Task five can be conducted as a whole group activity. Facilitators may choose to introduce the four small group tasks first, or provide self-guided instructions for groups to conduct activities. For more complicated tasks, facilitators may choose to demonstrate what is required.

The resources and tools chosen for these activities will affect the way each are presented, however, we have provided some guidance to administer the resources and tools we have suggested (see p.59), as follows.

Task 1: Hazard perception task

The purpose of this task is to demonstrate age-related changes in visual perception skills. This can be done using the Hazard Perception Videos or similar resources.

Required Materials: Computer, distracter paragraph, videos (videos and supporting material can be provided by MUARC)

The facilitator will explain to participants that they are about to see a series of videos of a car driving through a traffic scenario. The aim of the task is to point out the potential hazards in each of the videos. The materials, available from MUARC, include correct responses (identification of hazards). The instructor may use the first video as a demonstration and point out the potential hazards.

The activity can continue with participants taking turns to view the videos and identify potential hazards.

A second set of videos can be presented, this time combined with a distracter task. As participants view videos, another participant reads the distracter script. The purpose of the distracter paragraph is to provide an understanding of how the task difficulty increases when there is a distraction such as a talking front seat passenger.

A sample distracter script is provided:

“So when we get to Woden Plaza I would like to go to Maller’s to get a present for Jane. It would be great if we could also stop and have a coffee at the new café near Zero’s. I have heard from Margaret that they make really good coffee’s and have a great selection of cakes. I also need to use a CD voucher that I was given for Christmas so if it’s OK with you I’d like to go to Sanity. I would also like to get a new dog collar for Fido, however I am not sure if there is a pet shop at The Centre. We will have to ask the people at the information desk.

I was speaking to John the other day at Bingo and he said that you can now get new dog collars that glow in the dark. This would be brilliant for Fido because I it would make it much easier for me to see him when he hides amongst the boxes in the back shed. Hopefully the glow in the dark collar will stand out against his jet black coat.

I would also like to go to Merrit’s to try and locate a recipe book I heard about on the radio the other day. I can’t remember the name of the book at the moment. I don’t know whether you heard the radio interview at all? The author was speaking about some fantastic healthy recipes for quick lunches and basic dinners. I seem to remember that there is a storewide sale on at Merrit’s at the moment where everything is 25% off.

It can be very difficult to find a place to park that is close to the shopping centre. It may be best if we go to the bottom level of the multistory car park and park near the elevators. I have parked down there a few times and have managed to find a parking space most of the time. Do you think that is a good idea?

(NOTE: If the participant is still completing the task, start reading the distracter paragraph again from the top).

Task 2: Visual search activity

The purpose of this task is to demonstrate age-related changes in visual search. Here, the facilitators may choose to use the ‘Trails A & B’ tasks

Required materials: Trails A and B response sheets (examples provided in Appendix A), stop watch, glasses, pen

This task is best conducted in participant groups of three (with onlookers) as follows:

Nominate one person to be the “**Instructor**”, one person to be the “**Timer**” and one person to be the “**Participant**.” The participant will complete Trails A, Trails B and then Trails B with distorted glasses.

Please start with the sheet labeled TRAILS A and make sure it is face down initially so the participant can not see it until after the instructor has read the instructions.

The **Instructor** will read out the following instructions to the participant:

“You will see a sheet of paper of randomly circled numbers (from 1-25). Please connect the numbers starting from 1 and finishing with 25. You will need to work as quickly as possible, and try not to lift the pencil from the paper. If you make a mistake, you can correct your mistake and start again from where the mistake was made”.

The **Timer** will record the time it takes the participant to connect the numbers from 1 to 25. Turn over TRAILS A and start the task.

Next, take the sheet labeled TRAILS B and place it face down. The **Instructor** will read out the following instructions to the participant:

“You will see a sheet of paper with some numbers and letters in circles on it. Please connect the numbers and the letters alternating between the two. So you would start with 1-A-2-B-3-C and so on. You will need to work as quickly as possible, and try not to lift the pencil from the paper. If you make a mistake, you can correct your mistake and start again from where the mistake was made”.

The **Timer** will record the time it takes the participant to connect the letters and numbers from 1 to L. Turn over Trails B and start the task.

Next, the participant will wear distorted glasses and repeat TRAILS B. The Timer will also record the time it takes the participant to complete the task.

NOTE: If there is any extra time, the activities can be repeated by alternating roles, or with other group onlookers.

Tip: Response sheets can be laminated and participants can use a non-permanent marker in order that the materials can be re-used.

Task 3: Visual perception task

This task is designed to measure visual perceptual abilities. An important part of driving performance is the ability to construct a complete image from only partial information in order to recognize obstructed signs or objects.

An example task that requires visual perception skills is the MVPT-3. A description of the MVPT-3 is provided below. Note: if this is to be used, facilitators should acquire the resource as noted above.

Participants are presented with a target item and four incomplete drawings and are asked to select the drawing that when completed would match the target item.

An example is shown below. Show the practice figure and point to the four alternative figures and say ***“If we finished drawing these figures, which one would look just like this one? Please point to the correct one.”***

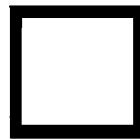
If the MVPT-3 is selected to use for this activity, some instructions for its use are provided below:

- 1) Place the MVPT booklet in front of the participant and give the score sheet to the scorer. Half way through the task the participant will wear the distorted glasses and complete the task wearing the glasses. The scorer will record the participant’s answers on the score sheet.
- 2) Once the participant has completed the task provide them with the answer sheet.

NOTE:

- The participant is not allowed to trace any figures.
- The assessor should encourage the participant to look at all four alternatives before making a decision.
- The MVPT is not a timed test, and the participant should be given a reasonable amount of time (15 seconds) before responding.

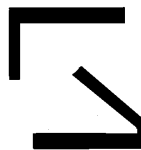
EXAMPLE



The participant indicates to the scorer which one of the following four figures would look like the top figure if you were to extend the lines?



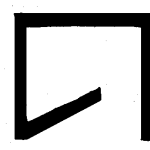
A



B



C



D

(Correct answer: A)

Task 4: Visual attention task

This task is designed to demonstrate age-related changes in visual attention skills, including the ability to selectively attend to important information and to divide attention between multiple sources of information.

A useful task to demonstrate these skills is the UFOV[®] which can be obtained from the developers (as noted above). “UFOV, or Useful Field of View, is the area over which a person can extract information in a single glance without moving his or her head or eyes. UFOV that falls within the normal range allows a driver to keep his or her eyes on the road and still notice hazards that may come at the car from the side, such as a child running into the street after a ball.

Studies have shown that UFOV plays a key role in a person’s ability to drive, walk, and safely perform other tasks related to mobility. Individuals who experience reductions in UFOV are more likely to fall and more likely to be involved in traffic accidents. In fact, individuals with very poor UFOV are six times more likely to be involved in a car crash than those with normal UFOV.

Many older adults experience reductions in UFOV that can limit their ability to drive safely and live independently. The UFOV training technology was created to exercise the areas of the brain involved in UFOV, allowing older adults and other individuals with impairments to improve their UFOV and assess their risk of being involved in a crash, fall, or other mobility-related accident”

There are several components to the UFOV, and we suggest that facilitators use one or all of these as time permits.

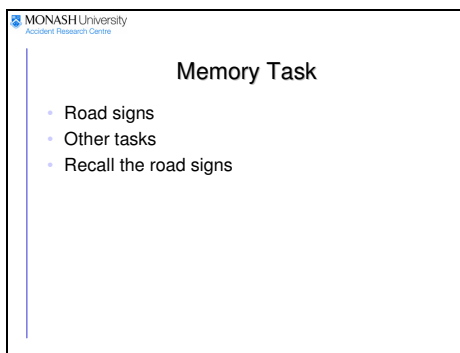
Task 5: Memory task

This task is designed to demonstrate age-related changes in memory function. This can be undertaken with the whole group after other small group tasks have been completed. Here, the powerpoint presentation slides should be used to present traffic-related road signs.

Slides should be shown for a short time, then disappear and participants are asked to recall the wording on the road signs.

The task gets progressively more difficult, as participants are asked to perform secondary tasks prior to recall.

SLIDE 4: MEMORY TASK



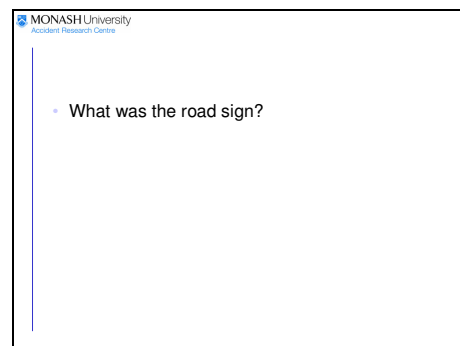
Facilitator 1: *This is the introductory slide for the memory task to be explained to participants.* For example: “We will be showing some road signs and asking you to recall what the signs said. Some will be easy, but in some cases we will ask you to do something else as a distraction in between and see how well you remember the road sign.”

SLIDE 5: MEMORY TASK



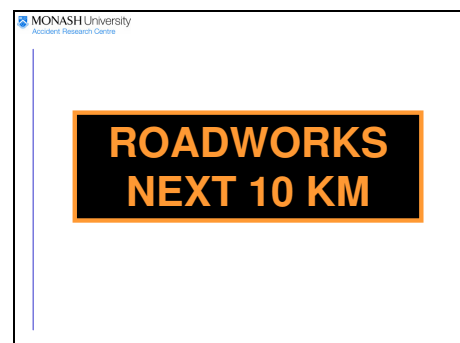
Facilitator 2: *Show this slide for 10 seconds only, instructing participants to remember the sign.*

SLIDE 6: MEMORY TASK



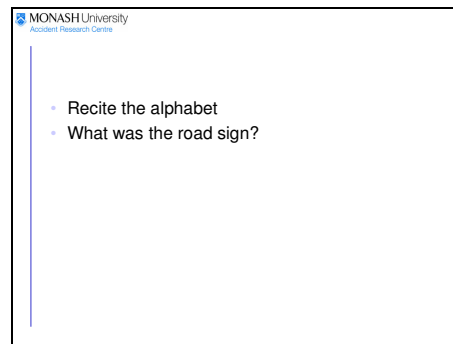
Facilitator 2: Show this slide and ask participants to recall the sign. (Most should recall correctly).

SLIDE 7: MEMORY TASK



Facilitator 2: Repeat the exercise. Show this slide for 10 seconds, instructing participants to remember the sign.

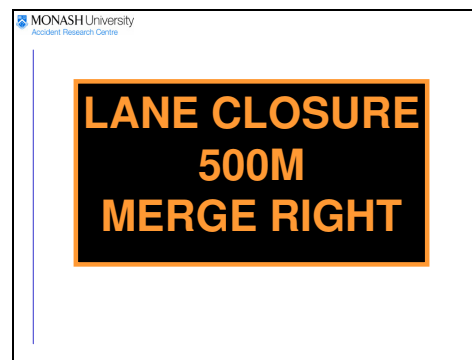
SLIDE 8: MEMORY TASK



Facilitator 2: Immediately after instructing participants to remember the sign, instruct them to recite the alphabet out loud. Allow all participants to complete reciting.

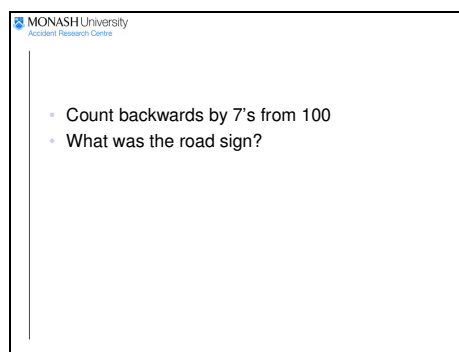
After this, ask participants to recall the road sign. (This should be somewhat more difficult than the first trial).

SLIDE 9: MEMORY TASK



Facilitator 2: Repeat the exercise. Show this slide for 10 seconds, instructing participants to remember the sign.

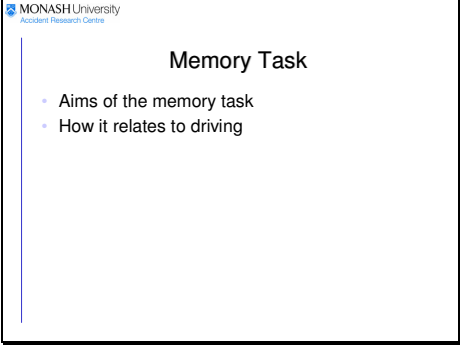
SLIDE 10: MEMORY TASK



Facilitator 2: Immediately after instructing participants to remember the sign, instruct them to count backwards by 7's from 100 out loud. Allow all participants to complete reciting.

After this, ask participants to recall the road sign. (This may be quite difficult for some participants).

SLIDE 11: MEMORY TASK



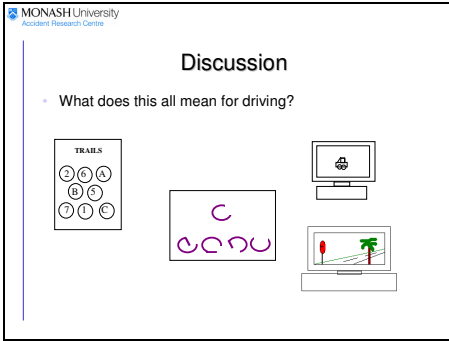
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Memory Task

- Aims of the memory task
- How it relates to driving

Facilitator 1: *Here, Facilitator 1 should discuss the memory task and implications of reduced memory on driving performance, inviting feedback from participants. For example: “Why do you think we did the memory task, what might that have to do with driving? What was the purpose of counting backwards and reciting the alphabet? There’s a difference between remembering a road sign without any other tasks going on, but when we have to remember a road sign and do other tasks like recite the alphabet this gets quite difficult. When we’re driving we’re doing a range of tasks at the same time and need to make sure we can attend to important information, remember it, and not be distracted by other (perhaps irrelevant) activities.”*

SLIDE 12: DISCUSSION



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Discussion

- What does this all mean for driving?

TRAFFIC

2 6 4
8 5
7 1 3

C

Computer monitor showing a driving simulation with a red car and a green car.

Facilitator 2: *The remaining slides in this session are designed to discuss the importance of functional performance and how changes in important skills can affect driving performance and crash risk. First, discussion of the tasks should take place, allowing participants to think about how the activities and tasks relate to driving (10 mins discussion, with prompts and guidance).*

For example: “How did you go with those activities? What we want to do now is talk about how these tasks relate to driving. Our aim was to show you a range of skills that are required for driving with different levels of complexity – for example with glasses and without. Everyone finds these tasks difficult, particularly when they are asked to wear the glasses because their vision is limited. Our intention in those tasks was to demonstrate how difficult the task becomes for someone with a visual problem.”

Facilitator 1: *Here, the purpose of the tasks should be explained and discussed. Examples of discussion points follow:*

Purpose of Visual Perception task: “[Name] – you did the MVPT with the glasses and without the glasses. How did you find that? Can you tell the rest of the group what you did and how you found that experience and especially how you found things changed when you put the glasses on?”

This task involves perceiving an object correctly in order to complete a picture. It is similar to observing road signs while you are driving. Sometimes road signs can be occluded by a tree or other object and you have to fill in the missing information to decipher what the sign says.

Purpose of the Visual Search task: The pen and paper visual search tasks require you to hold information in your short term memory, so you can keep track of the sequence of numbers and letters you are required to follow. This task also requires information processing and visual search skills in order to find the correct number of letters as quickly as possible. The ability to quickly and effectively scan the driving environment is a critical part of driving. Motor skills are also required in order to guide the pen across the page.


Purpose of the Visual Attention task: The computer task required you to attend to two pieces of information simultaneously before making a response. This requires dividing your attention between two objects. Driving often involves the presentation of two or more features in the driving environment, such as attending to traffic lights turning orange while glimpsing at your speedometer in order to monitor your speed.

Purpose of the Hazard Perception task: The hazard perception task looked at two things: firstly we looked at what sorts of hazards that you were focussing on when you viewed the videos. So researchers call this hazard perception – your ability to accurately see hazards in a driving environment.

We made this task a little more complicated by asking you to complete the task and listen to your co-driver talk at the same time. This is very much like driving when we have a passenger. What we have illustrated here is that sometimes it’s hard to divide your attention between two tasks - listening and talking to passengers and driving. This may lead to distraction and driving errors.

The remaining slides (numbers 13-20) provide evidence-based information on the associations between changes in functional performance and driving skill and crash risk.

SLIDE 13: VISUAL DECLINES





Visual declines

Visual declines are perhaps the most recognised and researched age-related declines associated with driving safety of the elderly

Difficulty seeing and discriminating details of road features, other road users, potential hazards, and seeing traffic signals and reading signs, particularly when they have low contrast

Difficulty recovering from glare source



Facilitator 2: *Discussion of visual declines and driving.* For example: “In the tasks we just completed, those of you who had the opportunity to wear the glasses will have gained an insight in to the difficulties that drivers with vision problems face. Changes in visual

functioning as a result of either a vision condition (e.g., cataract, glaucoma, macular degeneration), or normal ageing of the eye (e.g., reduced acuity, low contrast sensitivity) can affect driving, and there has been much research examining these associations.”


“Poor eyesight can mean that a driver will have difficulty seeing and discriminating features of the road, other road users, potential hazards, reading signs, etc.” This slide shows some photos of a traffic scene. On the left it shows the scene looking through ‘normal’ eyes. On the right, is the same scene looking through eyes with low acuity and contrast sensitivity. As you can see the one on the left is much clearer. A person with cataracts may have a similar view of the tram as the image on the right. The means they would find it difficult to attend to fine details such as whether a pedestrian is exiting the tram or whether the tram has a red signal to say it is about to stop.”

SLIDE 14: COGNITIVE SKILLS

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Cognitive Skills

- Information processing
- Limited capacity
- Overload



Facilitator 2: *Discussion of cognitive declines.* For example: “How we take in information and how we deal with this information is what researchers call information processing. It comes under a broad banner called ‘cognition’.

“At any age all of us are limited in terms of how much information our brains can deal with and how quickly we can respond. For any of us, varying levels of complexity in traffic when we’re driving means that our information processing skills can be overloaded.

“Our ability to first, attend to and process information, and then adequately (in time) and appropriately respond is critical for driving. Our ability to attend and react to a number of cues in the traffic environment without becoming distracted can decline with age. However, people of all ages find it difficult and challenging to drive in complicated traffic situations which require processing information from multiple sources at the one time.

SLIDE 15: COGNITIVE SKILLS

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Cognitive Changes and Driving

This can mean problems in:

- monitoring changing traffic conditions
- processing information and making decisions accurately and quickly
- scanning the environment for hazards

Facilitator 2: *Discussion of cognitive changes and driving.* For example: “The cognitive changes we just mentioned, such as slower information processing, and a decrease in our

ability to deal with overloaded traffic environments can seriously impact upon our ability to monitor traffic conditions. These changes can also limit our ability to make decisions quickly and accurately in order to respond appropriately to a traffic hazard. It also means that some people have difficulty scanning the traffic environment to detect potential hazards.”

SLIDE 16: DRIVING DIFFICULTIES

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Examples of challenging situations

- High traffic volumes
- High speed
- Multiple lane, bi-directional traffic
- Restricted sight distance
- Turning across traffic at busy intersections
- Merging
- Lane-changing


Facilitator 2: *Discussion of difficult traffic situations.* For example: “This slide shows some examples of challenging driving situations that someone with limited info processing skills and deficits in cognition may find difficult. “<name of participant>, would you care to read these out aloud for us?” Do these things sound familiar to you? Would anyone care to describe how these kinds of experiences have affected them and how you might have overcome them?”

SLIDE 17: PHYSICAL DIFFICULTIES

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Physical declines

- More time is required to complete actions
- Restricted range of motion, particularly moving head and neck, can impede the ability to scan the traffic and read signs properly
- Impediments in hip and leg joints can affect pedal control
- Lack of grip strength can make steering and control movements difficult



Facilitator 2: *Discussion of physical declines and driving.* For example: “The final skill that can be associated with driving difficulties is physical decline. Once again, people of all ages differ in their physical ability, however some people experience poorer physical functioning compared to others for a number of reasons including medical conditions, previous injury, and normal age-related changes. It is important that we are aware of the fact that this can affect our driving because as a consequence of a physical decline “...read slide..”

“We need to allow ourselves more time in order to account for these limitations. One such example is reversing the car when we have restricted head or neck movement. Another is turning the steering wheel when we have reduced strength in our arms and hands.”

SLIDE 18: MEDICATIONS



Medication Use


- Use of prescribed drugs is prevalent among the elderly.
- Many older people require continuing medication for health and quality of life.
- Polypharmacy.



Facilitator 2: *Discussion of medications and driving.* For example: “In addition to the effects of medical conditions and functional skills, it is also important to understand the effects of some medications on driving. First, we would like to point out that many people use prescribed medications for medical conditions and the benefits of most medications outweigh non-use of medications. We also know that as we age we are more likely to be taking some form of medication.”


“However, the impact of medications on activities of daily living is often much more complex than we realise. Some medication can affect our reaction time, alertness, muscle strength, eyesight, etc. So when two or more medications are taken simultaneously, known as polypharmacy, there is an even greater need to be fully aware of how these medications and their combination can affect your driving. However, in many cases the impact of polypharmacy can be unknown. Thus it’s important to have regular check ups with your doctor and ask your pharmacist about any potential effects of your prescription medications on your driving.”

SLIDE 19: MEDICATIONS



Medications and Driving

- Many prescription medications have the potential to adversely affect driving skills
 - Sedation - slows reaction time and diminishes awareness of hazards
- Medication can impair postural stability and balance
- Older people are more susceptible to the effects of medications than younger people

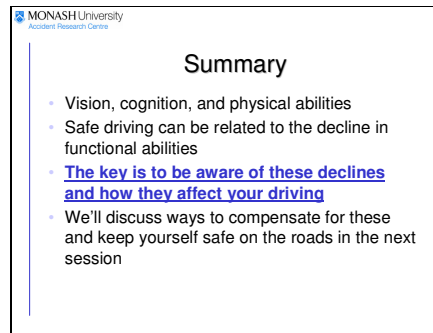


Facilitator 2: *Discussion of medications and driving.* For example: “As mentioned in the previous slide, some medications can have a sedative effect and affect reaction time and diminishes awareness of hazards. In addition medication can affect us physically, and impair postural stability and balance. We also know that generally older people can be more susceptible to the effects of medications compared with younger adults. All of these skills are needed for good driving performance. If reaction time is slowed, awareness of the environment is affected, if our balance is poor (including dizziness), driving can be compromised.”

“Some prescription medications have a warning label on them warning that taking them may result in drowsiness, but some don’t have such warnings. You do need to be aware of

how some medications affect you, and discuss the possibility of side effects with your doctor or pharmacist.”

SLIDE 20: SUMMARY

A presentation slide titled 'Summary' from Monash University's Accident Research Centre. The slide contains a bulleted list of four points. The third point is underlined and highlighted in blue.

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Summary

- Vision, cognition, and physical abilities
- Safe driving can be related to the decline in functional abilities
- The key is to be aware of these declines and how they affect your driving
- We'll discuss ways to compensate for these and keep yourself safe on the roads in the next session

Facilitator 1: *Summary of the session and feedback/discussion by participants.* Here, an overall summary should be provided, along with an opportunity for participants to make some final comments and suggestions. For example: “To conclude this afternoon’s session, let briefly go over what we’ve shared and learnt today. We have talked about a number of changes in skills as a result of ageing and the onset of medical conditions, and discussed the effects that these changes and declines may have on driving skills and performance, and crash risk.

“The key skills identified by researchers that can play a major role in crash risk for older drivers are changes in vision, attention, cognition, and physical abilities. In addition, we have discussed the possible effects on driving ability of the use of prescription medications, particularly the use of multiple medications.”

“The key message we want to send is for you to be aware of these changes and how they can affect your driving. That is why we included in this session a range of activities designed to demonstrate these effects. We showed how poor vision can affect our ability to see and attend to hazards. We showed how distractions can affect our reaction times and our abilities to even detect other road users or potential hazards.” In the time available today, we have highlighted just some of the ways in which functional abilities change with age and how these affect driving. We hope you take these messages away and think about how these might apply to you and how you can adapt the way you drive to adjust to your changing abilities.”

“We’d like to hear any comments, additions or suggestions from you about this session and what you may have gained from this, as it is important that we share these experiences with the group. In the next session, we take the knowledge we have just gained and discuss some of the ways that we can understand and compensate for changes, and adopt safe driving practices so that you can keep driving safely for as long as possible.”

Session 3: Strategies to keep driving safely

Requirements: Session 3 powerpoint file (13 slides).

Session time: Approximately 1½ hour

This session is designed to address the issues of mobility, particularly the benefits of prolonged mobility. It introduces concepts of self-regulation and successful retirement from driving and discusses opportunities for continued mobility through alternative transport option.

Here, participants are encouraged to engage in discussions about strategies they currently employ to keep themselves safe as drivers and pedestrians, as well as strategies for a successful transition from driving to other modes of transport. Evidence-based tips and strategies are identified and discussed.

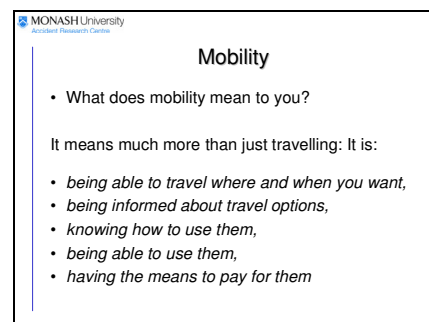
Slides 1-4: These are introductory slides and establish the concept of mobility, its importance, and driving as a major form of providing mobility for seniors

SLIDE 1: INTRODUCTION



Facilitator 1: *This is the introductory slide to this session – here it is suggested that the facilitator reviews the previous sessions as a lead in to this session. Next the facilitator shall explain briefly the aims of the session as outlined above and format of the session.*

SLIDE 2: CONCEPT OF MOBILITY



Facilitator 2: *Following on from the introductory slide, a discussion of the concept of mobility should be undertaken, particularly to prompt participants to think about what mobility means to them, individually. For example: Begin with asking participants to identify what mobility means for them – anticipate responses such as generally being able to get to where they need, to shops, to medical services, to visit family and friends, etc.*


Facilitators should then explain further what the evidence tells us, that mobility is more than just travelling, and experts consider mobility to consist of various elements. It is defined as being “able to travel, the psychological concept of knowing that out-of-home travel and activities is possible, understanding the various ways that mobility can be achieved, and having the means to pay for travel options.

SLIDE 3: COMPONENTS OF MOBILITY

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Components of Mobility

- Psychological and physical benefits of movement
- Travel to achieve access to destination
- Involvement in the local community
- Having the access to travel



Driving is the most important part of maintaining mobility

Facilitator 1: *A more in-depth discussion of mobility should be achieved here. Participants should be prompted to think about WHY they need to travel. Facilitators should invite an open discussion amongst participants.* For example, a discussion of the psychological and social needs to travel should be undertaken. For overall well-being and psychological health, the ability to remain mobile is crucial, or at least the knowledge that out-of-home activities are possible and there is some access to travel. Mobility is also important to maintain involvement in the community – again, having some community or social involvement is essential for overall psychological well-being.


Facilitators should end this discussion by emphasising the point that most of us consider driving to be one of the most important ways of maintaining mobility.

SLIDE 4: THE IMPORTANCE OF DRIVING

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Driving in Australia

- Driving is important to all of us. It is:
 - the preferred mode of travel, and
 - the safest travel mode
- There may come a time when changing or reducing or stopping driving is the safest decision for all



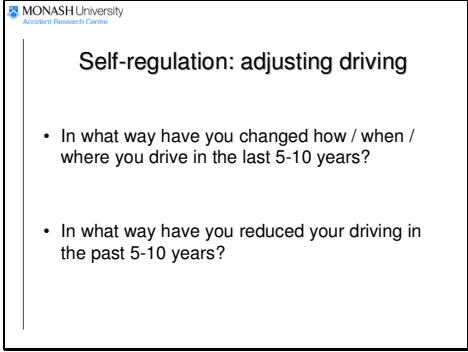
Facilitator 1: *Continuing the discussion, facilitators should discuss the importance of driving, emphasising that it is an important mode for all age, but especially for older adults.* For example, it should be noted that the evidence shows us that, for older adults, driving is the preferred mode of travel. This is mainly due to the ease of travel compared with other transport modes, particularly for those who may have physical limitations that can make walking and use of public transport more difficult.

In addition, the concept of driving is also the safest mode of transport for older adults should be discussed here. For example, “because vehicles offer physical protection in the event of a collision, we are safer as drivers and car passengers, compared with other transport modes such as pedestrians, cyclists and motorcyclists (where there is no protection offered in the event of a collision).”

Last, facilitators should begin a discussion about making decisions about reducing or stopping driving. For example, “While there are examples of drivers driving safely well into their later years, for most, there is a time when decisions should be made to change driving patterns and behaviours, particularly reducing or stopping driving, and this may be the safest decision for all. This can be a trying time, and a difficult decision, but there are ways that this decision can be made so that the transition from frequent driver to non-frequent, or non-driver can be made successfully.”

Slides 5-6: *These slides are designed to facilitate a discussion on the process of self-regulation. Self-regulation is a term used to describe the process of changing driving patterns and behaviour with increasing age. This may be a conscious decision due to difficulties experienced in driving situations, or it may be simply a reduced need to drive as frequently and better choices to drive at preferred times and in preferred places.*

SLIDE 5: SELF-REGULATION



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Self-regulation: adjusting driving

- In what way have you changed how / when / where you drive in the last 5-10 years?
- In what way have you reduced your driving in the past 5-10 years?

Facilitator 2: *This slide is designed to generate discussion about how individuals in the group may have self-regulated their driving. To start this discussion, facilitators could refer back to the discussion in the first session identifying some of the difficulties participants have experienced while driving, for example while negotiating complex intersections, or driving at night. Involve participants in this discussion and ask them to recall some of the difficulties they identified.*

Continue the discussion and ask participants to describe some of the ways they have changed their driving over the last five to ten years. *Exercise: ask participants to choose a partner sitting next to them and have each describe i) one way that they have changed their driving recently, and ii) one way that they have reduced their driving recently.* If prompting is required, suggest that participants think about particular driving situations they have found difficult (e.g., intersections, busy traffic, driving at night, driving in the rain, etc).

Following individual discussions, invite individuals to share their experiences and stories with the larger group. Facilitators could list the ways participants have changed their driving on a whiteboard (if available).

Last, facilitators should begin a discussion on the research on the processes of self-regulation and the benefits for older driver safety. For example: “Researchers in Australia and elsewhere have looked at the ways that seniors change their driving patterns and behaviour and have shown that this process, which is now termed ‘self-regulation’, actually has a beneficial effect on crash and injury risk. They show that many senior drivers change their driving habits and practices, some in a response to changing attributes such as slower responses, poorer memory, declining eyesight, and some in a response to


increased difficulty in some driving situations such as driving at night, in the rain, driving in peak hour traffic, etc.).

SLIDE 6: SELF-REGULATION

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Self-regulation: reducing driving

- Do you know anybody who has reduced their driving?
- How many have reduced their driving:
 - How?
 - Why?
- How has this affected you?



Facilitator 1: Here, the process of reducing driving as one of the ways older drivers self-regulate is introduced and discussed. For example: “We have discussed ways in which people change their driving habits. A second way people can ‘self-regulate’ is to reduce driving.

Facilitators should invite open discussion amongst participants on this issue, asking if they know anybody who has reduced their driving, then ask if they have reduced their driving, and explain how and the reasons why. If prompting is required, ask participants to describe how many days a week or how many kilometres they drive a week and compare that with 5 years prior, or driving situations that they may have reduced their driving in (e.g., at night, in the rain, in heavy traffic). Some reasons why participants may have reduced driving may include reduced need to drive, feeling uncomfortable in some driving situations, lack of confidence, etc.

In addition, it is important to discuss how reducing driving has affected participants. Invite participants in an open discussion on this point, describing their individual experiences. If prompting is required, some consequences of reduced driving may include reduced mobility, feelings of isolation, lack of social outings, reduced ability to reach services, etc.

Facilitators should summarise this discussion. For example: “Reduction of driving, particularly in hazardous driving situations or situations where drivers feel uncomfortable is common amongst seniors and is part of the self-regulation process. There are many varied reasons why seniors reduce or limit their driving, and men and women tend to report different reasons. It is a good strategy to reduce driving in situations that are risky or when drivers feel uncomfortable, however, it is important for many to maintain up-to-date driving experience, driving in situations where you feel comfortable, and recognising the signs when it is time to reduce more or consider stopping driving altogether.”


Slides 7-8: These slides address the issues of stopping driving, making the transition from driver to non-driver. The research suggests that this is seen as a difficult and life-changing decision, and one that many seniors often do not face. The discussion should address the issues of retiring from driving, allow participants to describe their experiences and ways they address the issue, and follow up with evidence-based strategies on how to approach this difficult decision and retire from driving successfully.

SLIDE 7: TRANSITION TO NON-DRIVER

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The transition to non-driver

- Making the decision to stop driving affects all of us
 - A difficult decision
 - Can be difficult if not managed well
- Do you know anybody who has stopped altogether?
 - What were their reasons?
 - How did they make the decision?
 - Did they stop at the right time?
 - How has it affected them?



Facilitator 2: Here, an introduction to the issues surrounding the transition from driver to non-driver should be addressed. It should be pointed out, as an overall introduction, for example, that the main aim of the course is to keep older drivers driving safely for as long as possible, however, a major component of remaining a safe driver is to know when it is the right time to stop driving. Moreover, it is important for maintenance of ongoing mobility, overall health and well-being to appropriately manage the decisions about and processes associated with making the transition from driver to non-driver.

The research shows that making the decision to stop driving is a difficult one for older drivers and their families, it is often perceived as a life-changing event, and one that is often avoided. Facilitators should encourage discussion about participants' thoughts on this process, particularly asking if participants know anyone who has stopped driving recently. An open discussion should be promoted to allow participants to express their attitudes and sentiments towards this issue. Issues to be addressed include reasons for stopping driving, processes undertaken to make the decision, perceptions on whether it was the right time or not, and the benefits/consequences of making that decision.

SLIDE 8: ISSUES AROUND RETIRING FROM DRIVING

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Retiring From Driving Considerations

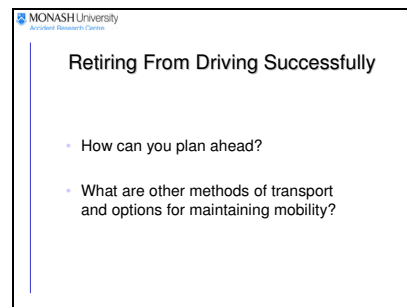
- Recognise the signs of decline in your ability
- Plan ahead to limit adverse consequences of driving cessation:
 - Decrease dependence on others
 - Increase quality of life and life satisfaction
 - Maintain out-of-home activities
 - Minimise feeling down/depressed
 - Minimise loss of personal identity

Facilitator 2: Continue the discussion of research on retiring from driving, addressing two important points here i) it is important to recognise the signs of declines in ability to drive safely, and ii) avoiding some of the adverse consequences of driving cessation with adequate planning.

In terms of recognising the signs of decline in abilities to drive, facilitators should refer to the previous session that addressed age-related functional performance and awareness of how these may impact on driving ability. For example, facilitators could ask participants to think back to the tasks they undertook and reflect on their performance, and how it related to their ability to drive safely. Participants could also be asked to assess someone else's abilities and discuss the signs of decline in performance.

In terms of the consequences of driving cessation, facilitators should discuss the research. For example, “The research tells us that there are some adverse consequences of stopping driving at the wrong time, either too early or too late, and that if this process is not managed properly, there may be some adverse consequences. The research also tells us that those who recognise the signs at the right time, plan ahead and make the decision to stop driving themselves, they will avoid the adverse consequences. With adequate planning and management, those who retire from driving successfully will i) decrease their feelings of dependence on others for transport, ii) increase quality of life and life satisfaction, iii) maintain a good amount of out-of-home activities, iv) minimise or avoid feelings depression and loneliness, v) and minimise or avoid feelings that independence and personal identity is reduced.”

SLIDE 9: SUCCESSFUL RETIREMENT FROM DRIVING



Facilitator 1: Here, facilitators should encourage participant to identify ways that they may retire from driving successfully. Exercise: Ask the main group to break into smaller groups of 4-5 participants each to discuss these issues and each group to identify at least 4 ways they might achieve this. After about 10 minutes discussion, bring the group together again and ask each sub-group to report back. Write the responses on the whiteboard. Some of the identified ways should include:

- Become familiar with public transport options in the local area
- Live close to public transport, family, social networks and medical services – this makes it easier to get around without a car
- Get some advice from professionals (doctors, occupational therapists and pharmacists) about tips on driving
- Look into community transport services – they offer a safe, accessible and convenient alternative to public transport
- Think ahead about sharing the driving with partners
- Change driving patterns as soon as possible
- Rethink holiday travel – long distance travel may not be an option, but there are alternatives
- Plan ahead to ensure that you don’t have to drive when taking medication
- Discuss driving ability with family and friends
- Take a gradual approach, easing into a life without the car.

Following this discussion, ask participants to think about alternative methods of transport and options for maintaining mobility that would suit their lifestyle and social requirements. Discuss these with the overall group and list on the whiteboard.

SLIDE 10: LIVING WITHOUT A CAR: ALTERNATIVE TRANSPORT OPTIONS

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Other Ways To Get Around Without A Car

- There are ways to still enjoy activities and get around safely and conveniently without a car:
 - Public transport
 - Lifts from others
 - Taxi
 - Community transport options
 - Scooters
 - Walking/cycling



Facilitator 2: *Following on from the discussion identifying alternative methods of transport, a list of ways is provided here.* Facilitators should emphasise that there are many ways to maintain good mobility, enjoy life and get around safely and conveniently without a car. Facilitators should match up what was identified by the group with the list provided on this slide and describe each transport mode briefly.


In addition, a discussion of participants' attitudes towards and ease of use of these alternative modes of transport should be encouraged. Facilitators could summarise the discussion by indicating that not all transport modes will suit each individual and it is important to think of the best way to get around, that is suitable for each.

SLIDE 11: WALKING

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Benefits of walking

- Car use is a dominant mode of transport for older people
- While people are walking less overall, walking forms part of most trips
- Walking is beneficial to individuals and the broad community
- Obvious benefits for health and well-being
 - Physical health (fitness, exercise Vitamin D, longevity, decreases risk of chronic diseases)
 - Psychological health (sense of freedom, relaxation)
 - Decrease in social isolation and increase in independence
- Community benefits
 - Decreases societal costs associated with ageing
 - Environmentally-friendly
 - Reduces pollution and traffic congestion



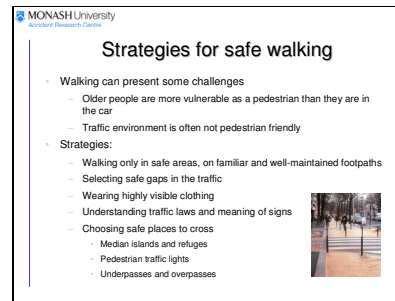
Facilitator 1: A discussion of the overall benefits of walking should be provided here. Prior to listing the benefits of walking, some introductory comments should be made, including acknowledgement that the car is the dominant and preferred mode of transport for older people, however, walking forms part of every trip. If amount of walking is increased, we can expect some benefits.

For example, “the research tells us that there are many health and lifestyle benefits of walking including associated increases in physical health, reduction in onset of chronic diseases and medical conditions, longer life expectancy, increases in psychological health including a good psychological outlook, increased feelings of well-being, sense of freedom, independence and relaxation, and a decrease in feelings of social isolation.”

“In addition to personal benefits, walking can benefit the community as a whole in a number of ways, including an overall reduction in the costs associated with ageing, and major environmental impacts. Walking is environmentally-friendly, and the more people walking, the less pollution is generated and there is less traffic congestion on the roads.”

To summarise these points, facilitators should also emphasise that while there are overall benefits, it is important for individuals to be aware of their own abilities to walk safely in traffic, as pedestrians are considered vulnerable road users.

SLIDE 12: STRATEGIES FOR SAFE WALKING



Strategies for safe walking

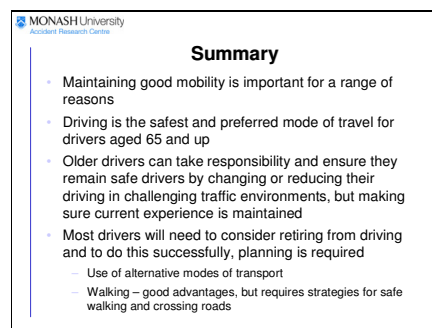
- Walking can present some challenges
 - Older people are more vulnerable as a pedestrian than they are in the car
 - Traffic environment is often not pedestrian friendly
- Strategies:
 - Walking only in safe areas, on familiar and well-maintained footpaths
 - Selecting safe gaps in the traffic
 - Wearing highly visible clothing
 - Understanding traffic laws and meaning of signs
 - Choosing safe places to cross
 - Median islands and refuges
 - Pedestrian traffic lights
 - Underpasses and overpasses

Facilitator 2: Continuing the discussion of pedestrian safety, facilitators should highlight that generally, pedestrians are at higher risk than car passengers, due to their vulnerability, and that while it is beneficial to walk as much as possible, it is also important to be aware of some of the challenges of walking.

Walking safely and crossing busy roads can be challenging for some older adults, due to physical and cognitive limitations. Furthermore, there are many traffic conditions and environments that are not pedestrian friendly. *Exercise: Ask the group to identify some hazardous pedestrian environments. Responses may include: busy traffic, high speed, two way traffic, badly maintained footpaths and overhanging trees, lack of formal pedestrian crossings, etc.*

Following this, facilitators should discuss some of the ways in which participants can improve their safety as pedestrians by adopting safe walking practices. A list of the key ways pedestrians can reduce their risk of collision include: walking in safe areas, and on well-maintained footpaths, taking care when crossing the road and making good judgements about the traffic, being more visible to drivers by wearing highly visible clothing and/or reflectors, understanding the laws and meaning of signs, and choosing safe places to cross.

SLIDE 13: SUMMARY



Summary

- Maintaining good mobility is important for a range of reasons
- Driving is the safest and preferred mode of travel for drivers aged 65 and up
- Older drivers can take responsibility and ensure they remain safe drivers by changing or reducing their driving in challenging traffic environments, but making sure current experience is maintained
- Most drivers will need to consider retiring from driving and to do this successfully, planning is required
 - Use of alternative modes of transport
 - Walking – good advantages, but requires strategies for safe walking and crossing roads

Facilitator 1: Summary of the session – the main points to be made include the following:

Maintenance of good mobility is an important consideration and the research shows that, in general, car use is the safest and most preferred mode of travel, for seniors. While we need to maintain good mobility as much as possible, it is also of utmost importance that safety is also considered.

While there are a number of ways safe mobility can be maintained (through improved roads, vehicles and road users), there is evidence to suggest that adoption of safe driving practices is an essential aspect in the overall safety of seniors. Many older drivers are safe and cautious drivers. If we can ensure that most older drivers remain safely mobile by effectively managing the adoption of safe driving practices, reduction and cessation of driving at the right time, then this will have a protective effect on crash risk and avoid the adverse mobility consequences of poorly managed driving retirement.

This can be achieved through raising awareness of the issues surrounding older driver safety (particularly the effects of ageing on driving performance and crash risk), informing drivers on strategies to adopt safe driving practices, and provide information on successful reduction and cessation of driving and alternative transport options, particularly walking safely.

Session 4: Vehicle safety and comfort

Requirements: Session 4 powerpoint file (19 slides).

Safety Rating brochures. Brochures that provide ratings of new and used cars should be used for participants to understand how safe their car is. There are a number of brochures around, for instance, the New Car Safety Ratings, and Used Car Safety Ratings. These can be obtained from the website: www.howsafeisyourcar.com.au

Session time: Approximately 1 ½ hours

This session is designed to introduce participants to understand the benefits of safe vehicles and occupant protection and crash avoidance technologies. Supplementary resources that may be useful include:

Videos demonstrating new technologies may also be used and can be found on the web. Advice on suitable safety-related technologies can be provided by MUARC.

The CarFit program – this is an educational program that offers older adults the opportunity to check how well their personal vehicles fit them. The program has been operating in the US for a number of years and details can be obtained from the website: www.car-fit.org. At time of writing, the CarFit program is being introduced into Australia. More information on the status of CarFit and where to find event co-ordinators should be obtained through the AAA Foundation: www.aaa.asn.au.

In addition, there are a number of other resources to assist consumers in purchasing vehicles, providing safety ratings for a range of cars. Motoring organisations such as the AAA, RAC, NRMA all have information on vehicle purchase. Other websites providing details are also available. See, for example:

- www.howsafeisyourcar.com.au,
- www.mynrma.com.au/cps/rde/xchg/mynrma/hs.xsl/ucsr_about.htm,
- www.infrastructure.gov.au/roads/safety/publications/2009/ucsr_09.aspx
- www.racv.com.au/wps/wcm/connect/racv/Internet/Primary/road+safety/vehicle+safety

Road Rules can be obtained from each jurisdictional office website: eg. Territory and Municipal Services – ACT Road Rules Handbook (www.tams.act.gov.au).

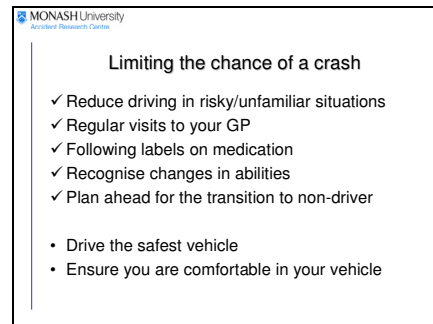
It is recommended that facilitators seek additional information from these important sources. In addition, it may be worthwhile liaising with local jurisdictions and Occupational Therapists who undertake re-licence review driving tests or occupational therapy driver assessment. These professionals may be consulted to provide information on re-licensing tests, assessment of fitness to drive and ways to improve comfort and safety through vehicle choice and vehicle technologies to supplement the information provided in this session.

SLIDE 1: INTRODUCTION



Facilitator 2: As an introduction, facilitators should explain the purpose of this session, that is, to discuss the protection vehicles offer us, understand safety features of vehicles and ways to increase the comfort of driving, and assist seniors make suitable vehicle purchase and modification choices.

SLIDE 2: OVERVIEW



Facilitator 1: Here, facilitators should summarise the main issues covered in the previous sessions, focussing on what actions seniors can take themselves to limit the chance of crashing.

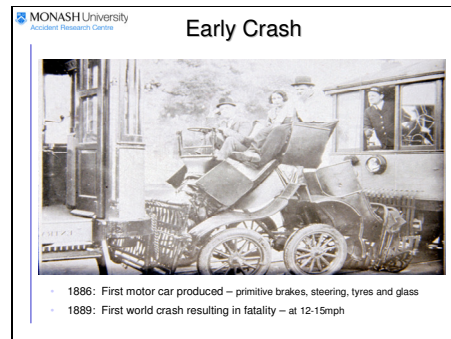
In order to keep driving safely for as long as possible and thus maintaining mobility, it is suggested that seniors could:

- i) be more aware of changing abilities and performance and adjust driving accordingly (i.e., self-regulate their driving),
- ii) Adjust driving behaviour by reducing driving in traffic situations that are risky, unfamiliar, uncomfortable and ones that they find difficult,
- iii) Check on overall fitness to drive by regular visits to the GP and discuss driving ability,
- iv) Understand the possible effects of medication on driving ability and follow labels on medication (check with your GP if taking multiple medications and unsure),
- v) Plan ahead for the transition from driver to non-driver to ensure you stop driving at the right time, but maintain mobility without the car.

In addition to these steps seniors can take to increase their safe mobility, seniors should also think about the car they drive and if it offers the protection they need in the event of a crash. This session will i) describe vehicle safety, ii) ways that vehicles can protect us in

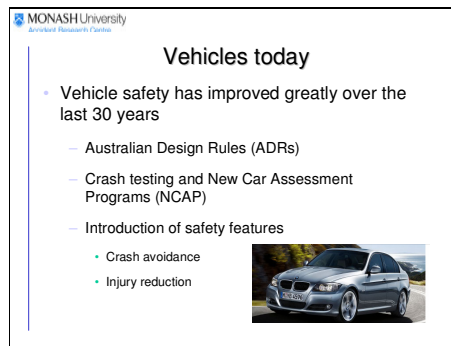
terms of avoiding a crash, or in the event of a crash, minimise the impact (and therefore injury risk), iii) choices drivers can make in choosing the safest car, and iv) ways to ensure drivers are comfortable in their vehicle through awareness of vehicle modifications.

SLIDE 3: HISTORY OF VEHICLE SAFETY



Facilitator 2: *We start with a brief introduction of the history of crashes and vehicle safety with this slide.* For example, “This depicts a crash early last century, and notes that the first automobile was manufactured in 1886, however, was a very different vehicle than those produced today. They had primitive braking systems, steering capabilities and no glass, they also travelled at much lower speeds than vehicles do today. It wasn’t long before we experienced the first crash in the world where someone was killed – that was in 1889 and at a slow speed of only 12-15 miles per hour. This was because the vehicle offered very little protection for its passengers.”

SLIDE 4: VEHICLES TODAY



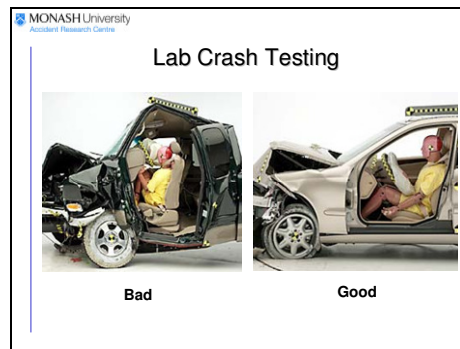
Facilitator 2: *Discuss the improvements to new vehicles.* For example, “Vehicle technology and occupant protection, fortunately, has improved greatly, especially over the last 20 or so years. This is due to a number of developments including establishment of National regulations (Australian Design Rules) and new car assessment programs aimed at ensuring minimum safety standards for all new cars. In addition, there are many new safety features that are designed to i) avoid a crash from occurring, and ii) reduce the injury consequences in the event of a collision.”

SLIDE 5: CRASH TESTS



Facilitator 2: Show video of crash test. This slide will require insertion of a suitable video clip (see www.ancap.com.au). Crash tests have been important factors in improving overall vehicle safety as they show us how well vehicles and safety features perform in different crash scenarios. This video shows, for example, how a vehicle frontal structure crumples when involved in a crash even just at 60km/h, and the occupant capsule doesn't. This is known as the 'crumple zone' which absorbs the impact of the crash, not the occupants. Put another way, if the frontal structure of the car doesn't crumple, the driver and occupants do.

SLIDE 6: CRASH TESTS



Facilitator 2: Demonstration of well-designed and badly designed crash protection. For example, these photos show a large difference between a car that doesn't have a crumple zone and one that does. You can see clearly that the car on the right has crumpled frontal structures, but the occupant capsule remains intact and will protect the occupant. This design feature has been introduced in the last 10-20 years or so. Newer cars have this crumple zone and can protect you more than an older car. Some people believe that a strong stiff car will save them in a crash, but it is not the case. It's the crumple zone in newer cars that allows occupants to be better protected in the event of a crash.

SLIDE 7: VEHICLES TODAY


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Vehicles today

- Despite improvements to vehicle safety, there are some limitations in their protective capabilities in high speed impacts

Maximum tolerable speeds:

- Head-on crashes = 65 to 70 km/h
- Side-impact crashes = 30 to 50 km/h
- Run-off-road crashes = 30 to 50 km/h
- Pedestrian crashes = 30 km/h




Facilitator 1: *It is also important to acknowledge that vehicles cannot always protect us. For example: “Even though we have had great improvements in vehicle occupant protection capabilities, vehicles are still limited in how much they can protect us from injury, especially in high speed impacts. This is purely because of physical energy generated in a crash.*

The research show us that, in any head-on crash above 65-70 km/h, our vehicle cannot protect us, for side-impact and run-off-road crashes, this maximum tolerable impact is 30-50 km/h, for pedestrian crashes, this is only 30km/h.”

SLIDE 8: CRASH AVOIDANCE SYSTEMS

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Crash Avoidance Safety Features



- Driver state sensing**
 - Alcohol interlocks
 - Fatigue detection
- Improved information**
 - Day-time running lights
 - Night/enhanced vision systems
- Incident avoidance**
 - Lane departure warning
 - Following distance warning
 - Intelligent Speed Assist (ISA)
- Post-incident crash avoidance**
 - Crash preparation
 - Anti-lock brakes (ABS)
 - Brake Assist
 - Electronic Stability Control

Facilitator 1: *The next few slides show some of the new safety features that can assist in avoiding a crash. These range from systems that can detect at a very early stage if someone shouldn't be driving, for example drivers who have been drinking or who are too tired to drive. These include alcohol interlocks and fatigue detectors – alcohol interlocks are designed so that drivers over the limit cannot even start the car and fatigue detection systems detect certain behaviours that indicate fatigue and either slow or shut the car down.*

Other systems act at a later stage in the process leading up to a potential collision and improve the information we can get from the environment, while others are designed to avoid the crash and these include lane departure and following distance warning systems, as well as intelligent speed assist/adaptation systems.

Last, there are systems that can act in the final stages before a potential collision and include preparing occupants for a crash (moving seats to the optimal position, seat belt pretensioners that tighten and keep occupants better-positioned in their seats, anti-lock brakes and electronic stability control (ESC).

The following slides look in a little more detail at some of these systems.

SLIDE 9: IMPROVED INFORMATION SYSTEMS



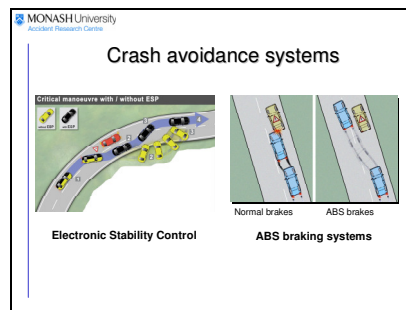
Facilitator 1: These are some examples of systems that improve the information we can get while driving. First, is the use of day-time running lights – this means driving with your lights on to increase your visibility. Research has shown up to 25% effectiveness in crash avoidance. Second, is the use of enhanced night time vision systems – these are designed to help drivers detect information and objects ahead on the road such as pedestrians, cyclists, and large animals in poor visibility conditions in time to take appropriate actions.

SLIDE 10: IMPROVED INFORMATION SYSTEMS



Facilitator 1: Another information system is the route guidance system, or GPS. These devices are relatively new on the market, and many of you may already be using these. They are designed to assist drivers find their way to unfamiliar places, selecting their route based on certain criteria such as safest route, route with less traffic, route with fewer intersections, etc. Because they are so new, there are no specific findings on their effect on crash risk, but intuitively it makes sense that such a system could reduce the risk of a crash for drivers aged above 65, particularly those who have difficulty remembering the way, and especially for those who need to drive in unfamiliar areas.

SLIDE 11: INTRODUCTION

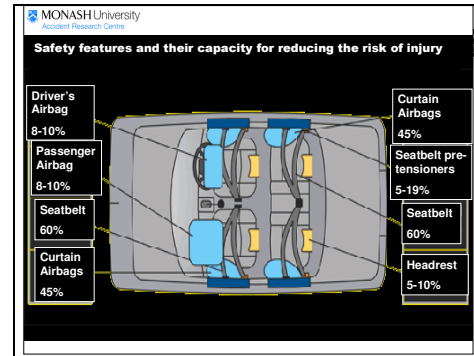


Facilitator 1: This slide shows some crash avoidance systems. First is Electronic Stability Control (ESC). ESC is a computerised technology that improves a vehicle's stability in the

event of loss of control by detecting and minimising skids. It does this by using a number of intelligent sensors that detect any loss of control and automatically apply the brake to the relevant wheel, putting your car back on the intended path. Some ESC systems also reduce engine power until control is regained by the driver. It has shown to be effective in reducing up to 32% of single vehicle driver injury crashes.

Second, is ABS braking systems. These systems work to prevent your wheels locking when you brake. They retain steering control and decrease stopping distance, particularly on wet or icy roads. ABS is said to have benefits in reducing rear-end and pedestrian impacts.

SLIDE 12: OCCUPANT PROTECTION



Facilitator 2: These next few slides talk a little more about occupant protection systems, which are essentially systems designed to reduce the severity of injury in the event of a crash. These include crumple zones and strong occupant protection compartments, which we have already discussed, as well as seat belt systems, airbags, and side impact protection. As is shown on this slide, there are some safety benefits of all of these systems in terms of reducing the risk of injury. The following slides describe these systems in some more detail.

SLIDE 13: RESTRAINT SYSTEMS

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Restraint systems

- Seat belts save lives, if worn and worn correctly
- Some technologies can enhance their effectiveness:
 - Seat belt pretensioners
 - Seat belt reminder systems
 - Enhanced head rests

Facilitator 2: Restraint systems are designed to keep you safe in your seat in the event of a collision – if you are not restrained in your seat, you can easily be thrown by the forces of the crash, either into the steering wheel, through the windscreen, hit another passenger, or even be ejected from the car. By using seat belts properly, we can greatly reduce our risk of injury. Seat belts should be fitted comfortably, and the bottom strap placed firmly around your pelvic bones, and not around your abdomen.

In addition to wearing your seat belt, there are other systems that act to keep you tight in your seat. These include seat belt pretensioners which detect movement just prior to an

impact and are designed to tighten and remove the slack from the belt and ‘couple’ an occupant to the seat. Pretensioners also prevent ‘submarining’ that is, sliding under your belt and reduce the risk of lumbar spine and lower limb injuries.

Enhanced headrests are also provided for comfort and safety. Headrests are designed to prevent the backlash movement of an occupant’s head in the event of a collision – this in turn can prevent serious whiplash neck injuries. Advanced headrests act to ensure a properly adjusted headrest, maintaining good support for the neck.


Seat belt reminder systems are another safety feature, designed to increase wearing rates. Advanced systems can detect when there is an occupant in the seat and when a seat belt is not fastened. Most provide an audible reminder and flashing icon on the dashboard and some reminders become more aggressive over time (for example, louder and more frequent warnings).

SLIDE 14: AIRBAGS

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Airbags

- Airbags are another form of advanced restraint devices and designed to cushion impacts and include:
 - Frontal airbags
 - Side-impact bags
 - Knee and foot bags



Facilitator 2: *Airbags are designed as an additional protection device to seat belts. They are occupant restraints consisting of a flexible envelope designed to inflate rapidly in a collision to prevent vehicle occupants from striking interior objects such as the steering wheel, window or colliding objects.*

Frontal and side impact airbags have been shown to be effective in reducing head and chest injuries.

SLIDE 15: SAFE VEHICLE CHOICE

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Vehicle Safety Considerations

- When purchasing a car, it is important to look for the safety features that will protect you the most in the event of a collision.
- Tips for choosing the safest vehicle are:
 - Choose the newest and largest car that you feel comfortable with and is affordable
 - Choose a car with good safety features
 - Choose a car which has a high safety rating

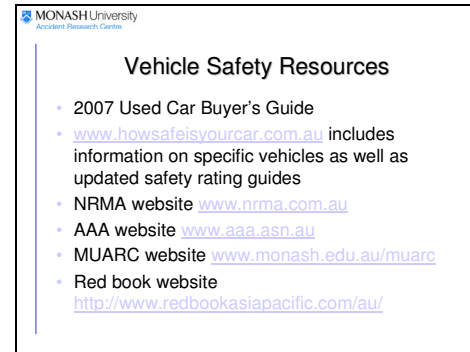
Facilitator 1: *Summarise the evidence on safety features.* It is important to understand the protection that your car can provide and choose the right car that is going to provide the necessary safety for you and your passengers. The evidence shows us that many of the crash avoidance and occupant protection technologies are effective in reducing injury risks in the event of a collision. These include a good crumple zone, good information systems, stability control and braking technology, and restraint systems.

In addition, the evidence shows us that larger cars are generally safer than smaller cars.

Exercise: Use the Safety Rating brochures to demonstrate how safe current vehicles are. Each participant should receive a copy of both the New and Used Car Safety Ratings. Ask each participant to look up their current vehicle and see how safe it is. Explain to participants that, in the brochures, cars are divided in to small, medium, and large. It's important to note that not all cars are listed. Provide assistance to participants if they cannot find their car.

Group discussion.

SLIDE 16: RESOURCES



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Vehicle Safety Resources

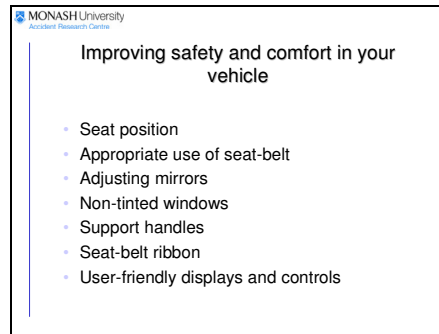
- 2007 Used Car Buyer's Guide
- www.howsafeisyourcar.com.au includes information on specific vehicles as well as updated safety rating guides
- NRMA website www.nrma.com.au
- AAA website www.aaa.asn.au
- MUARC website www.monash.edu.au/muarc
- Red book website <http://www.redbookasiapacific.com/au/>

Facilitator 2: *Summarise this section by offering some additional information if participants would like to follow up on safe vehicle choices. For example, “One of the best things you could do is to go away today and think about all the information we’ve talked about and then start doing a little bit of research yourself. You have the Used Car Safety ratings, and we have provided are a list of other resources you could investigate for vehicle safety information but also general road safety information. We will leave this slide up at the end of the program so have can have more of a chance to read it.”*

The next few slides address the comfort of vehicles and road rules. A proper fit in one's personal vehicle can greatly increase not only the driver's safety but also the safety of others. Here, it is suggested that the facilitators might like to add in the CarFit program, if available in their local area (please contact your local AAA office for more information about the CarFit program in Australia).

The CarFit program is designed to help older drivers find out how well they currently fit their personal vehicle, to highlight actions they can take to improve their fit, and to promote conversations about driver safety and community mobility. Alternatively, facilitators may wish to approach a local Occupational Therapist who conducts licence medical review on-road tests. Most Occupational Therapists working in this field will be able to provide some good tips on how to improve the comfort of vehicles.

SLIDE 17: SAFE VEHICLE CHOICE



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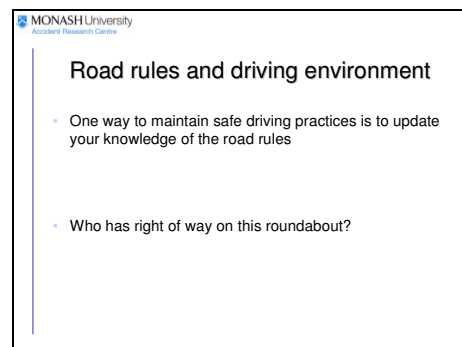
Improving safety and comfort in your vehicle

- Seat position
- Appropriate use of seat-belt
- Adjusting mirrors
- Non-tinted windows
- Support handles
- Seat-belt ribbon
- User-friendly displays and controls

Facilitator 1: In addition to choosing the safest vehicle, there are some simple ways to ensure safety and comfort in your vehicle, and these include adjusting the position of your seat, use of seat belts, mirror placement, windows and controls, and use of support handles.

For example: knowing how to properly adjust one's mirrors can greatly minimize blind spots for drivers who may wish to change lanes. Another example is: good foot positioning on the gas and brake pedals is important. If the driver is reaching with his or her toes to press on the pedals, it can cause fatigue in one's leg and slowed reaction times. A third example is: Drivers should sit a good distance away from the steering wheel – drivers run a risk of serious injury if they are sitting closer than 10 inches to the steering wheel.

SLIDE 18: ROAD RULES



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Road rules and driving environment

- One way to maintain safe driving practices is to update your knowledge of the road rules
- Who has right of way on this roundabout?

Facilitator 2: Discussion of road rules and the safety aspects of knowing the rules and obeying them.

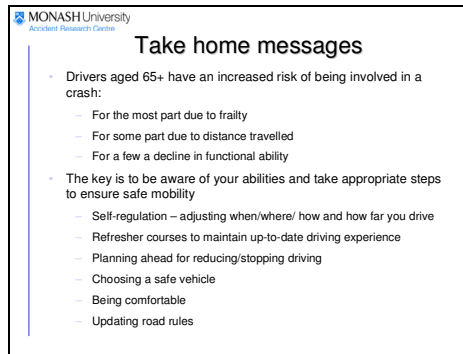
Exercise: Here, facilitators are required to select one example of a traffic situation in their local area that is difficult for older drivers (e.g., a roundabout, intersection with partial right-turn phasing). Present a photo of this environment and ask participants to imagine they are the driver approaching a roundabout and wanting to make a right-hand turn. Ask participants to describe who has right of way. Encourage participants to discuss their responses and talk about the difficulties at this site.

(The road rules handbook states “whichever vehicle arrives at the roundabout first they have right of way”. So potentially any sort of hesitation or an incorrect decision about who has right of way could lead to a crash).

Invite participants to identify other traffic situations and road rules they are unsure about or have difficulty understanding.

Summary

SLIDE 19: SUMMARY



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Take home messages

- Drivers aged 65+ have an increased risk of being involved in a crash:
 - For the most part due to frailty
 - For some part due to distance travelled
 - For a few a decline in functional ability
- The key is to be aware of your abilities and take appropriate steps to ensure safe mobility
 - Self-regulation – adjusting when/where/ how and how far you drive
 - Refresher courses to maintain up-to-date driving experience
 - Planning ahead for reducing/stopping driving
 - Choosing a safe vehicle
 - Being comfortable
 - Updating road rules

Facilitators 1 and 2: Summary

This is the final slide for the sessions and provides the key take-home messages of the program. These include:

- An awareness of the risks of crash and injury amongst older drivers in Australia
- An awareness of abilities and adoption of appropriate steps to ensure safe mobility: these include
 - Adjusting driving behaviour to suit abilities and this may mean reduction of when, where, how and how far you drive,
 - Consideration of refresher courses to maintain up-to-date driving experience,
 - Understanding that there will most likely come the day when you should consider making the transition from driver to non-driver and planning ahead for that event
 - Choosing a safe vehicle and making sure it is comfortable to drive
 - Updating road rules.

Facilitators should extend their thanks to all participants for their time and commitment to the program, and trust that they gained some benefit and knowledge from attending.

APPENDIX A

Trail Making Tests Part A and Part B

