



# Driving and Dementia

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Philippa Angley

Alzheimer's Association Victoria

**Alzheimer's Association Victoria**

PO Box 5096  
Glenferrie South VIC 3122  
Tel (03) 9818 3022  
Fax (03) 9818 3940  
E-Mail [alz@alzvic.asn.au](mailto:alz@alzvic.asn.au)  
Web [www.alzvic.asn.au](http://www.alzvic.asn.au)



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## Contents

Introduction.....	2
Ageing Population.....	3
Driving and Dementia - Overview .....	6
Australian Driver Licensing .....	10
Perspectives of People Living with Dementia .....	14
Perspectives of Families and Carers .....	15
Discussion.....	16
References .....	18

# Introduction

Driving following the onset of dementia is of concern to the individual, their families and carers, and to health professionals. At some stage during the course of a progressive dementia driving skills become compromised, and driving must cease. Unfortunately the determination of this point is difficult and controversial. Public safety concerns need to be considered, but also the well-being of the person with dementia. The maintenance of an active social life is important for the health and quality of life of older people; for many the ability to drive is an important component of this. This paper provides a summary of some of the research that has been undertaken over the past decade, focusing on issues relevant to current clinical practice. It also presents information about legal issues and incorporates the views of people with dementia and their carers.

# Ageing Population

## Population Trends

Australian Bureau of Statistics (ABS) projections indicate the number of older people in Australia will increase dramatically over the next few decades. In 2001 it is estimated that 12.4% of people are over 65 years of age, which will increase to 21.3% by 2031 (ABS, 1999). In numerical terms the number of people over 65 years is expected to increase from about 2.4 million in 2001 to 5.1 million in 2031. The proportion of the population over 85 years increases at a greater rate. At present this cohort form 1.3% of the population, but will increase to 2.6 % by 2031. It is also anticipated that a greater proportion of older people will be driving (largely due to an increased proportion of women driving). The number of older people driving is thus expected to increase significantly over the next few decades. The relatively high prevalence of dementia in the 85 plus age group highlights the importance of dealing appropriately with the driving and dementia issue.

*"I gave up driving immediately after I read the literature on Alzheimer's disease. I didn't want to take any risks with my or anyone else's life. I had a frightening experience. One day, as my wife and I were traveling on the highway, I had no idea where we were and later, how we had arrived at our destination. I was totally disoriented that day, and fortunately, my wife was driving... Giving up my licence actually felt good. It was my idea to relinquish my driver's licence and it gave me a sense of being in control."*

*(Santa Barbara Alzheimer's Association, 1998, p.6)*

## Older Driver Issues

Even so-called normal ageing can result in the progressive loss of sensory, cognitive and motor skills. Deficits in the following areas are commonly found in older people (Oxley et al, 1995):

- Visual acuity
- Contrast sensitivity
- Visual field loss
- Reaction time
- Auditory capacity
- Perceptual performance
- Motion perception
- Attention capacity
- Cognitive processing ability
- Decision time deterioration
- Loss of memory capacity
- Neuromuscular and strength loss
- Postural control and gait changes
- Dark adaptation and glare recovery

Losses in many of these areas have the potential to impact significantly on driving ability, but fortunately most changes occur slowly, giving individuals time to adapt to deficiencies well. A number of specific health conditions frequently found in older people have the potential to impact on driving, notably dementia, cardio- and cerebrovascular conditions, ocular system disorders, pulmonary disease and arthritis. Medication, which for many older people will be of more than one type, complicates the issue further.

### Older Driver Crashes

The number of people killed on Australian roads has fallen significantly over recent decades; a 49% decrease in fatalities from 1970-94 (Federal Office of Road Safety (FORS), 1995). This fall is dramatic when it is considered in light of a 40% population growth and 118% increase in number of vehicles registered over the same period (FORS, 1995). Unfortunately the number of older driver fatalities has remained relatively static.

The following table details the number of driver deaths by age from 1986 – 1995 (FORS, 1996, p.1).

**Driver Deaths by Age, Australia, 1986-1995**

*“My daughters stopped me driving – they told me I wasn’t safe even though I hadn’t had any accidents. I was very angry – but now accept they did it out of love for me. My own safety is not so important but I wouldn’t want to hurt anyone else. I really loved my car though.”*

	<b>Under 25 yrs</b>	<b>25-39 yrs</b>	<b>40-59 yrs</b>	<b>60 yrs &amp; over</b>
1986	404	329	234	163
1987	379	326	220	170
1988	486	332	248	168
1989	397	341	232	152
1990	318	251	199	167
1991	293	252	197	168
1992	267	236	180	132
1993	270	251	189	149
1994	255	200	178	178
1995	294	237	180	166
% change 1986-94	-27.2	-28.0	-23.1	1.8

The number of drivers over 60 years killed remained relatively unchanged, whereas the number killed in other age groups declined significantly. The increase in the number of people over 60 years and the more widespread ownership of drivers’ licences only partly explain the failure to reduce road deaths in this age group. One additional factor may be the fact that road safety campaigns have largely focused issues particularly relevant to younger drivers, notably speed and drink driving.

To better understand how older drivers perform it is necessary to adjust accident data by distance travelled (based on the assumption that the further a person drives, the more likely they will be involved in a crash). When this adjustment is made for 1991, a year the ABS undertook a survey of motor vehicle travel in Australia, the following results (compared to the safest group of drivers, those aged 45-49) emerge (FORS, 1996):

- The incidence of fatality was highest for young and old drivers
- Those aged 30-44 years and 50-64 years were relatively safe

- Those aged 21-29 years and 65-74 years were much less safe
- Those aged 17-20 years and 75-79 years had high levels of involvement in a fatal crash
- Those aged above 80 faced very high risk.

However, once again other factors must be considered. Older drivers are less likely to survive the same magnitude of crash as a younger person. Adjusting for this factor lowers the relative risk of driver fatality for older drivers, making them compare more favourably with other drivers. That said, the rate for those above the age of 80 years remains high, especially for those over 85 years. It is important to realise, however, that the rate for people aged 80-84, although high, is slightly lower than that for drivers aged 17-20. It is also relevant to note:

*The types of crashes that older drivers have are a little different to those of other drivers. They are more likely to crash during daylight hours and on dry roads than younger drivers, be well under the legal BAC [blood alcohol concentration] limit, more likely to crash at an intersection, and be performing complex traffic manoeuvres at the time. They are also more likely to be injured from a rural crash, even though they are less likely to be involved in a crash outside urban areas. This is another indication of their susceptibility to injury as rural crashes tend to be more severe. (Fildes, 1997, p. 7)*

Whilst age is not a relevant criterion for determining the driving ability of an individual, the fatality rates for drivers over the age of 80 years are disturbingly high. The improved safety features in modern vehicles, such as airbags and better seat belt systems, are likely to provide greater protection to older people should they be involved in a crash but this is only part of the equation. Undoubtedly there are people with injuries or diseases who continue to drive when they should not, and this includes some of the older population of drivers.

# Driving and Dementia - Overview

The majority of readily available studies on dementia and driving are from the United States. As there is little to suggest that the substance of the issues varies between countries, material from the past decade or so will be considered relevant for Australia. Some studies consider the effect of dementia on driving; others only consider Alzheimer's disease (AD). For the purposes of this paper no attempt will be made to differentiate between different forms of dementia and the resulting impact on driving.

## How Cognitive Impairment In Dementia Affects Driving

Driving is a complex activity, requiring several tasks to be performed simultaneously. The impact on driving of the cognitive impairments frequently associated with dementia is summarized by Johansson and Lundberg (1997):

*"It's second nature. I don't think about it. I just get in and go."*

*Dementing diseases bring about impairments of visuospatial skills, attention, memory and judgment, which are all important functions for safe driving. Visuospatial skills are needed for a multitude of tasks, such as appropriate positioning of the vehicle, estimating distances, and interpreting a current traffic situation and predicting its evolution. Selective, divided, and sustained attention are necessary, for example, to detect potential hazards, to deal with competing stimuli at intersections, and to maintain optimal vigilance during long trips. Judgment merits special consideration in this context, because it applies not only to the driving task but also to the awareness of deficits, making compensatory behavior possible. Memory is always impaired in dementia, and language disturbances are a frequent finding. Intact immediate or short-term memory functions enable the driver to retain information obtained, for example, when glancing at the rear-view mirror. Memory deficits (often combined with visuospatial impairments) can contribute to getting lost and may lead to driving errors and violations. Although language does not appear to affect driving performance directly, it influences the strategic (e.g., choice of route) and tactical (e.g., anticipatory maneuvers when seeing traffic signs) decisions of the driver. (p. 64)*

*"My wife doesn't like to travel with me now but I still drive short distances. If we have to go far I always let my wife drive because I know she is a better driver than me – and she often doesn't like the route I take!"*

It has been reported that certain driving situations, such as intersections with several traffic indicators, pose a particularly difficult problem for people with mild dementia but not for the healthy elderly (Fitten, 1997). This is not surprising, as complex driving situations require the simultaneous processing of numerous pieces of information and the taking of a quick decision. Unfortunately the consequences of an error of judgment when driving can be major, even fatal.

As the progression of a disease causing dementia is variable, both in terms of the cognitive functions that are affected and in the rate of disease progression, predicting driving ability on the basis of diagnosis alone is not possible. All that can be inferred is that a progressive dementia will at some stage impact to such a degree on the ability to drive safely that it should cease. Given that the majority of people who develop dementia are over 65 years, their driving may be further compromised by the presence of other diseases or health issues.

## Dementia and Driving Data

Research has shown that many people do continue to drive after a diagnosis of dementia (Carr et al., 1990; Odenheimer, 1993), and that is clearly the case in Australia. Not surprisingly, there is also significant information available that indicates that people with dementia who continue to drive have more road accidents than other older drivers (Friedland et al., 1988; Dubinsky et al., 1992; Tuokko et al., 1995). A paper by Carr (1997) analysed eight studies that had been undertaken on motor vehicle crashes in people with dementia. He found:

*Fifty percent of drivers with DAT [dementia of the Alzheimer type] stop driving within 3 years of disease onset. The risk for a motor vehicle crash increases with the duration of driving with the disease and with the male gender. Interestingly, neither performance on psychometric measures nor disease severity appears helpful in determining who is at risk for a crash (p.40).*

*"I don't drive – I made that choice myself. I have kids, and it would kill me if I killed one of them because of not being able to control the car. The problem is that my wife now has to drive me – she has to do more. But we don't want anyone to get hurt – I don't like not driving, but it's the right thing to do."*

However because there is a marked variability in the degree of disability attributable to AD and in its progression, basing driving safety predictions on the duration of AD alone is not recommended (Drachman, 1988, Fox et al., 1997).

Various studies have reported evidence that self-initiated driving cessation cannot be assured in people with dementia (Dobbs, 1997; Friedland, 1997). Several studies have also shown that many people with dementia lack insight into driving competence and that they tend to stop driving only after having had one or more crashes (Friedland et al., 1988; Kaszniak et al., 1991; Kapust and Weintraub, 1992). One study indicated that over 80% of those who were involved in a crash continued to drive afterward, with almost 40% having at least one more crash (Cooper et al., 1993 in Dobbs, 1997). This clearly suggests that self-initiated driving cessation cannot be assured in people who have an illness causing dementia. Family and carers are often relieved when a health professional has initiated driving cessation for the person with dementia, for it is something they may have been unable to arrange themselves. However it must be noted that resistance to the removal of driver status is sometimes exhibited by carers as well as by the person with dementia (Friedland, 1997; Shua-Haim et al., 1999).

## Predicting Driving Ability

Many studies have attempted to find clinical or psychometric variables that could be used to predict drivers at risk for a crash. Other studies have looked at the suitability of on-road testing and driving simulators to determine driving competence. In this paper the common use of the Mini-Mental State Examination (MMSE) to predict driving ability will be examined, as will the use of on-road driver testing. Current research in other tools will be briefly mentioned.

### - MMSE

The most common tool used in research to indicate level of impairment in a person with dementia was the MMSE, and in numerous studies its usefulness as a predictor of driving ability was considered. The results are varied, and even conflicting. Some studies have found that MMSE scores have been significantly related to driving ability (Logsdon et al., 1992; Marottoli et al., 1994), driving simulator performance (Rebok et al., 1994), and actual on-road driving performance (Fitten et al., 1995). Fox et al (1997) suggested that a MMSE

score higher than 18 may be a useful guide to indicate which individuals should undertake the relatively expensive option of on-road testing to determine driver competence. In this Australian study of 19 people with probable AD, all three people who scored 18 or less on the MMSE failed an on-road evaluation, and eight of the fourteen people who scored between 19 and 24 on the MMSE failed the on-road evaluation.

The positive findings on the use of the MMSE are in contrast to O'Neill et al. (1992) who found that MMSE scores did not discriminate those individuals who were experiencing "diminished driving ability" from those individuals with "preserved driving ability", where driving ability was assessed based upon informant reports. Dobbs (1997) came to a similar conclusion when he tested on-road driving performance of people with dementia:

*"I was starting to get speeding tickets – my car was just too powerful. I also had an accident – I crashed into the back of a bus. I sold the car and now have a smaller, less powerful one. I only drive short distances to my clubs."*

*I believe it is important to mention that the MMSE score was not useful for effectively identifying the individuals who performed poorly on the road test. This is important because MMSE score is too often used for this purpose. The justification has been that there is a moderate correlation between MMSE scores and driving performance. Although we also found this to be true, it must be remembered that the relationship exists across a group of persons; there is substantial variability, and the relationship simply is not a [sic] strong enough for the MMSE to be used accurately or effectively to identify individuals who are no longer competent to drive (p. 11).*

At the 1994 International Consensus Conference on Dementia and Driving no agreement could be reached on the use of the MMSE to predict driving ability. "Some participants stressed that the MMSE was not conceived as an instrument to determine cognitive function in relation to driving. A number of essential features, such as judgement and impulse control, are not captured by this instrument... There is also the risk that all patients with "sufficient" scores would automatically be viewed as safe drivers" (Johansson and Lundberg, 1997, p.65). This lack of agreement about the use of the MMSE to predict driving ability indicates that its use for this purpose is problematic, and at the very least it should not be used as a sole determinant of whether someone with dementia should be allowed to continue to drive. It may however have some usefulness in contributing to a comprehensive assessment of whether an individual should be allowed to drive.

#### **- On-Road Driving Assessment**

The use of on-road driving tests is frequently advocated to determine whether a person with dementia should drive, and is a common procedure in Australia. At a basic level this method has a sense of fairness, for it is how any person is tested to determine whether they are actually granted a licence. However problems have been highlighted (Hunt et al., 1997; Dobbs, 1997). It is worth noting the finding of Hunt et al. (1997) in their study of the impact of environmental cueing on performance on a road test:

*Licensing tests usually are highly controlled by the examiner, who provides many cues ("turn right here"). It is possible that impaired drivers with DAT may pass the test in the controlled environment but be unsafe in the usual, uncontrolled setting when they must rely on their own cognitive abilities. (p. 16)*

*"I had an assessment when I lived in another state – they said I was OK to drive for another 12 months. I then moved here, and had to have another test. They said I couldn't drive; it made me angry. I would still be driving if I hadn't moved here. Now I can't get to all the activities I was planning to take part in. I haven't got used to not being able to drive."*

Dobbs (1997) undertook road tests to evaluate the driving competence of people with dementia. In conclusion, he queried the widespread use of on-road driving tests for people with dementia, for two reasons. Firstly, the cost of doing so on the wide scale that is needed would be high; and secondly, because some people with dementia were simply too dangerous to road test. Fox et al (1997) were more positive, and found that on-road testing was a valid means of determining driving competence in people with dementia. They did however highlight the fact that regular re-testing was required (in their study half the subjects who initially passed the on-road test failed on re-assessment six months later).

In Australia, concerns about whether a medical condition is affecting a person's ability to drive safely may result in a referral for an occupational therapy driver assessment. An on-road driving test forms part of this assessment. Outcomes vary: driving may be unrestricted, limited to a geographical area and/or time of day, limited to vehicles with particular aids or modifications or a driver licence may be cancelled or suspended. This option can be a useful tool for families and carers, for it places the decision on driving competence into the hands of an independent party. It should be noted that regardless of whether the referral for the occupational therapy driver assessment was a self-referral, a referral from a third party or a requirement of a driver licensing authority, the therapist who undertook the test would forward a report to the relevant driver licensing authority.

There are flaws with the on-road assessment, but when it is combined with a medical and off-road assessment (as in an occupational therapy driver assessment) it appears at present to be the best option to determine the ability of a person with dementia to continue to drive safely.

#### **- Other Tools**

Considerable work is going into the development of driving simulators to predict driving performance. Unfortunately studies of driving simulators have not yet shown them to be valid predictors of future driving safety (Bylsma, 1997).

Specific neuropsychological tests are also being investigated to determine their usefulness to predict driving performance. Tests to correlate measures such as visuospatial ability, visual tracking skills, logical memory and picture arrangement with driving performance have been undertaken. Results to date are generally either not conclusive or the relationships have not been sufficiently elucidated to enable them to be widely used to determine driving performance.

The determination of driving ability in a person with dementia thus remains a vexed issue. Because of the lack of agreement on a suitable mechanism for doing so, Lipski (1997) suggests that no person with dementia should be allowed to drive. This is in contrast to those who believe that such a blanket prohibition on driving by people with dementia would be discriminatory and possibly counter-productive (by discouraging people to seek medical advice for cognition difficulties they may be experiencing).

# Australian Driver Licensing

Austroads has recently published the second edition of Assessing Fitness to Drive: Guidelines and Standards for Health Professionals in Australia (Austroads, 2001). All Australian Driver Licensing Authorities and many national health professional colleges and associations have approved this publication. This publication will help ensure that the fitness to drive of people with medical conditions is assessed in a consistent manner and should minimise medico-legal exposure in the event that a person is involved in a crash.

Some of the relevant statements are reproduced below:

## 3.1 *Driver's Liability*

*"I had a driving assessment a year ago and have been allowed to drive between 9.30am and 3.30pm. I now have to go for another assessment. My doctor has told me that he thinks I should stop driving now but I think he is being premature. I will go for the assessment again for I like to drive myself to the golf club and to church."*

3.1.1 *National uniform law requires a patient to advise the local driver licensing authority of any permanent or long-term injury or illness that affects his or her safe driving ability. The new law imposes penalties for failure to report.*

3.1.2 *This requirement exists in all States and Territories, except Western Australia, at the time of publication.*

3.1.3 *As well as the criminal liability described above, a patient may be at risk of common law liability if he or she continues to drive knowing that he or she has a condition that may adversely affect driving. Drivers should be aware that there may be long-term financial and legal consequences where the driver has failed to report an impairment to the driver licensing authority.*

## 3.2 *The Conflict Between Confidentiality and Public Duty*

3.2.1 *A fundamental ethical issue for medical and other health professionals is the requirement to maintain confidentiality. Patient confidentiality is an acknowledgement of the patient's autonomy in maintaining control over information that relates to his or her medical condition. Health professionals are therefore not at liberty, in the majority of cases, to disclose to third parties, including driver licensing authorities, any patient details revealed within the professional relationship. Doctors and all health professionals do, however, have a duty of care to the public that, in most cases, is secondary to their primary duty of care to the patient. Where the public duty of care assumes more importance, it will include taking reasonable action to minimise the risk of harm resulting from the actions of a patient whose condition or behaviour is likely to be dangerous. A difficult ethical question arises if a health professional believes that there is an over-riding public interest in the disclosure of confidential information. The health professional must then decide if the public interest is sufficient to justify breaching patient confidentiality and jeopardising, perhaps irretrievably, the professional relationship held with the patient.*

3.2.4 *A health professional might be liable in any jurisdiction if a court found that he or she had failed to take reasonable steps to prevent an impaired patient from driving in circumstances that would result in a substantial foreseeable increase in risk to members of the public or to the patient him or herself.*

### **3.3 Indemnity**

3.3.1 *Under national uniform driver licensing law already in place in all States and Territories, any person, professional or otherwise, who reports a driver to a driver licensing authority, in good faith, is protected from civil and criminal liability.*

### **5.1 Review of Potential Risk**

*"I drive very carefully now – I take much more care now than I did when I was younger. Driving is important to me and I want to continue for as long as possible. But if I ever have an accident – that's it – I would get rid of my car immediately."*

5.1.2 *Health professionals should advise patients about the ways in which their condition may impair their ability to drive safely. As part of this process, the patient becomes better informed about the nature of his or her condition, the extent to which he or she can maintain control over it, the importance of periodic medical review and the need for regular medication where appropriate.*

5.1.3 *At such a medical review, the health professional may form the view that the patient is fit to drive. On the other hand, the view may be formed that the patient is unlikely to be safe to hold an unconditional driver licence. The professional's role is then to obtain confirmatory evidence and, where appropriate, to advise the patient to cease driving (or to drive only in specific circumstances that are considered safe). Confirmatory evidence is often obtained from family members or friends and many difficult situations can be resolved with goodwill from all relevant parties, though not always immediately.*

5.1.4 *Where the health professional believes that continued driving would be likely to be dangerous, the patient should be reminded of the risk to him or herself, and to others, of continuing to drive. The driver should also be reminded of the legal obligation to report the condition to the driver licensing authority (currently in all States and Territories, except Western Australia).*

5.1.7 *When a health professional is aware that driving is continuing and that it is likely to endanger the public, despite counselling and despite the driver's own obligation to report, reasonable measures to minimise that danger will include notification of the driver licensing authority.*

## 5.2 Progressive Disorders

5.2.1 *Often diagnoses of progressive disorders are made well before there is any need to question whether a patient remains safe to drive.*

5.2.3 *It is therefore strongly recommended that the patient be counselled appropriately where a progressive condition is diagnosed that may result in future restrictions on driving. It is important to give the patient as much lead-time as possible to make the life-style changes that may be required later. (selected sections, p. 5-10)*

*"I still drive but I limit it. I worry about it and I drive much more conservatively now. Every few months I have someone check on it – they go for a drive with me. But I really want to keep an eye on it to make sure that I am driving safely."*

Unfortunately these guidelines only contain part of the answer to how people, particularly health service providers, should respond to the question of driving with dementia. A discussion with a policy officer at VicRoads (the Victorian driver licensing authority) suggests, however, that the following is a reasonable interpretation:

- It would appear that there is no obligation on an individual to immediately report to a licensing authority that they have dementia that may impair their ability to drive safely. They should however report it when it is thought it may impair their ability to drive safely.
- There is no general requirement for a health professional to report a person who has dementia and is driving to a driver licensing authority.
- If, however, at any time a health professional believes that continued driving is a danger to public safety they are expected to take reasonable action to minimise the risk of harm. This action could be expected to include some of the following measures:
  - reminding the person with dementia of their legal obligation to report the condition to the driver licensing authority;
  - advising them that they should obtain an assessment of their driving ability;
  - advising them they should consider restricting or ceasing driving until such an assessment is undertaken;
  - discussion of the potential danger to self and others of continued driving; and
  - discussion with family members.
- If driving continues despite these measures, and the health professional believes there is a real risk for public safety, a report should be made to the driver licensing authority.

*"The balance must always come down on the side of safety. Even on days when the person gets very angry we cannot lose sight of the fact that a car out of control is a weapon. People could be killed – and how would we feel then?"*

- A report to a driver licensing authority will usually result in a letter being sent to the individual, together with a form to be completed by a medical practitioner (usually their general practitioner); if it is still uncertain whether the individual should drive, an occupational therapy driver assessment may be required.
- The final determination of whether an individual is allowed to drive, and what conditions may be attached, is made by the driver licensing authority.
- Health professionals may be liable under civil law in cases where a court forms the opinion that they have not taken reasonable steps to ensure that impaired drivers drive only in circumstances that do not place them, and other members of the community, at increased risk.

*"Losing my driver's licence was like someone cutting my arm off. I lost something that was a part of myself. I lost my freedom primarily. Driving gave me the freedom that I am in control. If it comes to you, you'll realize what it is like to be deprived of your freedom by having to wait for someone to take you from here to there."  
(Snyder, 1999, p.88)*

## Perspectives of People Living with Dementia

Driving is an issue of concern for people with dementia, and not surprisingly, people's responses are varied. Some people immediately relinquish their licence for fear that they may be unsafe on the road; others refuse to accept that there may be a time when they need to cease driving. Speaking with people with dementia suggests that for many people it is one of the most difficult issues that they must face. In Australia, driving is often associated with independence, and for many is viewed as a right. Dementia challenges this view.

How an individual responds to the issue of whether they should continue to drive after the onset of dementia is highly variable, but it will usually be emotional. Driving may be viewed as a measure of competence and to cease doing so may be seen as a clear indicator of loss and decline. Health professionals working with a person with dementia clearly have a significant role in assisting a person prepare for the life-style changes that may be required if, or when, they cease driving. It must also be noted that it is not uncommon for people to change their mind about whether they should drive, or when they believe they should cease driving, over a period of time. This is particularly concerning if a progression of a dementia is associated with decreased insight into difficulties they may have in continuing to drive safely.

# Perspectives of Families and Carers

Family members and carers are concerned about the continued driving by a person with dementia. A general aim of most families and carers is to support the person with dementia to maintain a maximum level of independence. With respect to driving, this aim is counter balanced by concerns for safety, both of the person with dementia and of the general public.

*"My life is more difficult now he cannot drive. I have to do it all – and I'm tired. I wish he could take himself, even just sometimes."*

Families and carers vary greatly in their response to the issue of driving. Some will intervene to try to stop the person with dementia from driving immediately; some monitor the issue closely, encouraging continued driving whilst the person appears capable of doing so safely; some adopt a role of co-pilot, where they must be in the car if the person with dementia is driving; others actively encourage the person with dementia to continue to drive (anecdotal reports suggest this is more likely to occur when public transport options are limited and/or when another person is dependent on the person with dementia for transport).

A difficult time for families and carers arises if they have to actively intervene in restricting the driving of the person with dementia, or in the enforcement of a licence cancellation. Even when they know they are doing 'the right thing' they may feel guilty at denying the person with dementia something that is important to that person. Health professionals can assist families and carers manage these difficult and sensitive issues.

## Discussion

*"I used to race cars and motorcycles. Today I don't drive but I do enjoy being chauffeured in my stretch limousine and sometimes in my extra stretched bendy limousine that seats over 70 and both are called Trans Adelaide buses (public transport buses).*

*I enjoy not having parking tickets or speeding fines and I am very pleased to say I don't have to wash or clean it. My journeys are now filled with sightseeing and usually I arrive not as tired. You see, there are alternatives that can be enjoyed."*

*(Newsletter of the Early Stage Dementia National Network, p.4)*

All people with a progressive dementia will reach a point where it is unsafe for them to drive. Some researchers (such as Friedland et al., 1988; Lipski, 1997) believe that once a diagnosis of Alzheimer's disease has been made an individual should be immediately prohibited from driving. Friedland came to this conclusion even with the acknowledgement that a significant minority of people with dementia retained their driving competence, at least through the mild stage. Others such as Drachman (1988) argue that because the onset of AD is so insidious, and because its rate of progression is so variable, a blanket prohibition against driving is too restrictive and driving privileges should be withheld only after reaching some threshold of driving-specific disability. Unfortunately at present there is no definitive answer on how that point should be determined. A review of the literature would however suggest that on the basis of available evidence people with dementia and their carers should be informed that "a diagnosis of early dementia is a clear warning sign that the individual may not be competent to drive, but it is *not sufficient* to define individuals as not competent to drive" (Dobbs, 1997, p.9). Some people with dementia can clearly continue to drive safely, at least for a period of time, and should be allowed to do so. It should be noted that a blanket restriction on driving following diagnosis could have a detrimental effect on the people presenting for an early diagnosis – at a time when early intervention, both medically and socially, is being encouraged and recognised as beneficial.

Until there is a better test to determine driving competence in a person with dementia, a range of information should initially be taken into account: individual report of driving ability; family and carer reports of driving ability; accident record and traffic infringements; and assessment of a range of sensory, motor and cognitive abilities. At any time it is clearly evident that a person is unsafe to drive, driving should cease (preferably by agreement with the person with dementia). However when an individual wishes to continue to drive and there are reasons to be concerned about their ability to do so safely, they should be referred for further assessment, usually by making a report to the driver licensing authority (this process should minimise medico-legal exposure for a health professional should the person with dementia be involved in a crash). This may result in a person being required to undertake an occupational therapy driving assessment. Referral could also be made directly to an occupational therapy driver assessment program, for a report is automatically forwarded to the relevant driver licensing authority. However under this process it is unclear what the legal exposure for the health professional would be if the individual were involved in a crash prior to the report being received by the driver licensing authority. It is also important to note that critical to the determination of the driving competence of a person with dementia is the issue of reassessment. If at any time it is determined that an individual with dementia is competent to continue to drive, an appropriate time frame for reassessment must be set.

The issue of driving and dementia is complex, and often emotional. It is well summarised by Friedland (1997):

*" My husband still drives but only when I go with him. I am afraid he may get lost. He hates me making comments about his driving but he doesn't always seem to be taking enough care. He is going to hate it when he isn't allowed to drive any more."*

*Issues of driving cessation provide the patient with a milestone for disease progression, behavioral impairment, and progress toward death. Driving decisions need to be made to best preserve the patient's integrity. One important principle applies to the question of driving is this: "I now perceive one immense omission in my psychology – the deepest principle in Human Nature is the craving to be appreciated" (James, 1920). People may have their role defined, at least in part, by their control of motor vehicles and their ability to get places, do things, transport friends, and participate in the life of the community. The loss of these privileges is a practical, economic, and personal loss for the patient and caregivers. Consideration must be given to what the medical team can do to best preserve the patient's autonomy and to fulfill the "craving to be appreciated" in ways that do not require driving a motor vehicle. (p. 75)*

The number of older people living in our communities is going to dramatically increase over the next few decades. Associated with this will be a large increase in the number of people driving at the time they receive a diagnosis of dementia. Alzheimer's Associations have an important role in ensuring that the issue is appropriately and sensitively handled, particularly as their contact with people in the early stages of dementia increases.

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