

Cognition and driving in older persons

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Summary

In Switzerland, approximately 350 000 people aged 70 years or older own a valid driving license. By law, these drivers are medically assessed every other year, most commonly by their general practitioner, to exclude that a medical condition is interfering with their driving skills. A prerequisite for driving is the integration of high-level cognitive functions with perception and motor function. Ageing, per se, does not necessarily impair driving or increase the crash risk. However, medical conditions, such as cognitive impairment and dementia, become more prevalent with advancing age and may contribute to poor driving and an increased crash risk. The extent to which driving skills are impaired depends on the cause of dementia, disease severity, other co-morbidities and individual compensation strategies. Dementia often remains undiagnosed and therefore general practitioners (GPs) can find themselves in the difficult situation to disclose a suspicion about cognitive impairment and queries about medical fitness to drive, at the same time. In addition, the literature suggests that cognitive screening tests, most commonly used by GPs, have a limited role in judging whether an older person remains fit to drive. Further specialist assessment, for example in a memory clinic or on the road testing (ORT), may be helpful when the diagnosis or its implication for driving remain unclear. Here, we review the literature about cognition and driving, for GPs who advise older drivers who wish to continue driving.

Key words: ageing; mild cognitive impairment; dementia; driving

Introduction

The number of older car drivers is projected to sharply increase in the next few decades. Currently, there are about 350 000 people aged 70 years or older in Switzerland who have a valid driving license [1]. The exact number of active drivers amongst them is unknown. Swiss drivers require a medical assessment by law every other year after the age of 70. The aim of the assessment, which is most commonly carried out by their general practitioner (GP), is to identify medical conditions that can interfere with driving. The literature suggests that older drivers do not impose an increased crash risk to other road users in absolute terms, causing fewer crashes per capita or per number of drivers compared to younger age groups [2]. However, the relative crash risk, expressed as the number of crashes per distance driven, increases with age [3]. For example, an 80-year-old driver exhibits a 3- to 4-fold increased crash risk per kilometre driven when compared to a 50-year-old driver [4].

For many older persons, driving a car is seminal for independence, for mobility, and for social activities and well-being. Older drivers often self-regulate their driving habits, for example by restricting driving to known routes or by avoiding driving during rush hours and at night, without necessarily stopping driving at all [5, 6]. Such self-imposed restrictions have been attributed to advanced age, poorer health, impaired vision, female gender, cognitive impairment and dependence in instrumental activities of daily living (IADLs) [5, 6]. Restrictions may reduce the chance for crashes but they also reduce driving experience [7]. Furthermore, some studies have suggested that driving restrictions are an indicator for poorer health and increased crash risk [5, 8].

The concept of driving fitness integrates juridical and medical norms, and aims to find the balance between safety and mobility. From a public health perspective, the challenge is to identify older drivers at increased risk early, without unnecessarily restricting others. The medical assessment of an older driver is a challenging task for GPs, who often have a long-term professional relationship with their patients. Impaired driving skills in older people are mainly related to poor health and age-related perceptual, motor and cognitive disorders [9, 10]. The latter often remains undiagnosed,

forcing GPs to disclose concerns about cognition and concerns about driving fitness at the same time. Furthermore, there is no gold standard available for GPs about how to decide whether the nature or severity of cognitive impairment imposes an increased risk when driving [11]. Cognitive impairment or the suspicion of dementia is often not formally assessed and the bad news is often not broken. This makes an open discussion about its impact on driving difficult. Due to this, GPs find themselves in the dilemma with concerns about juridical liability and patients' possible unfavourable reaction to the outcome of the medical assessment potentially restricting their mobility [12]. The scope of this review is threefold: First, to provide information on the most relevant cognitive domains seminal for driving; second, to summarise the changes in driving performance and crash risk during the process of normal ageing and dementia; and thirdly, to review whether the cognitive screening tests, most commonly used by GPs, are helpful to predict fitness to drive. We do not address all other common medical conditions which may interfere with driving and refer the reader with a special interest in the medical assessment of the older driver to recent reviews [13–15].

Method

We searched PubMed, CINAHL, Embase electronic databases and focussed on publications between 2007 and 2010 using the search algorithm: [dement\$.ti. OR cognit\$.ti. OR alzheimer\$.ti. OR memory.ti. OR old\$.ti. OR senior\$.ti. OR age\$.ti.] AND [driv\$.ti. OR mobil\$.ti. OR perform\$.ti. OR auto\$.ti. OR car\$.ti. OR accident\$.ti.] LIMIT English, French or German language. Following this, the references of papers found were screened for further relevant literature.

Cognition and driving

Driving is the ultimate instrumental activity of daily living (IADL) [16] and it requires the integration of high-level cognition, vision and motor function. Numerous cognitive functions are important for driving. The most relevant among them are summarised below [17, 18]:

Visual information selection (i.e., visual attention)

Visual attention is a process that selects visual stimuli based on their spatial location. It is crucial for driving, for example when detecting road side targets. Impaired visual attention is an early and unspecific feature of many disorders. Tests commonly used to assess visual attention are the Trail Making Test A (TMT-A) [19] or the useful field of view test (UFOV) [20]. The TMT-A is a paper-and-pencil test [19] in which participants have to connect, as quickly as possible, pre-drawn numbers in ascending order (1-2-3-4-, etc.). The UFOV [20] is a computer-assisted test, which measures visual awareness in the peripheral field of view. Several studies have suggested that impaired UFOV or trail making are associated with poor driving and increased crash risk [21–23]. Both tests are usually not available in the office of GPs, but such tests are commonly used in a specialist setting (e.g., specialist driving assessment

centre or Memory Clinic). In the specialist setting, other aspects of attention relevant for driving can be tested as well, such as sustained (i.e., the ability to maintain attention without interference) and divided attention (e.g., the ability to respond simultaneously to multiple tasks) [24, 25]. Impaired visual attention is a common, diagnosis-unspecific, early feature of dementia [26, 27].

Visual perception

Visual perception includes the perception and correct interpretation of visual information. Intact perception is important to read the traffic signs, for the orientation in traffic and for directional stability on the road. Impaired line orientation and impaired traffic sign recognition have been related to poor driving and crashes [18, 28]. Visual perception is commonly affected in dementia, particularly in Lewy body dementias [29].

Executive function

Executive function refers to the ability to respond to novel situations in an adaptive manner. It includes volition, planning, anticipation and effective performance [30]. Impaired executive function can manifest clinically by personality changes, decreased impulse control, decreased flexibility and impaired insight. In the context of driving, drivers with executive dysfunction may overestimate their skills, make inappropriate and dangerous decisions, and may lack insight into the extent of their cognitive deficits [31]. A test commonly used to assess executive function is the Trail Making Test B (TMT-B) [19]. In the TMT-B, letters and numbers have to be connected as quickly as possible in alternating ascending order (1-A-2-B-3-C, etc.). Several studies have demonstrated an association between TMT-B performance and risk in older drivers [18, 32]. One study showed that slower performance in TMT-B and age were the two major predictors for failing a standardised on-the-road test (ORT) [33]. Another study [34] showed that TMT-B test predicts, in conjunction with other tests, future at fault accidents. In a recent meta-analysis, the TMT-B was among the most accurate tests to predict pass or fail on an ORT of older drivers [18]. Executive dysfunction is common in advanced dementia and it is, often in conjunction with personality changes (e.g., impulsivity) and other behavioural features (e.g., aggression), an initial feature of fronto-temporal degeneration (FTD) [31].

Episodic, semantic and procedural memory

Episodic memory includes the registration, acquisition and encoding of information, such as knowing where to find the car keys. Episodic memory is not seminal for driving in a familiar environment. Semantic memory includes knowledge about the world, for example the meaning of colours of a traffic light. Procedural memory refers to the ability to use a learned skill in an unconscious, automatic way, such as technically handling a car, for example starting the engine or switching gears. Episodic memory is usually impaired in early Alzheimer's disease (AD) [35], and semantic and procedural memory are affected during the progression of the disease. Therefore, AD patients maintain basic vehicular control skills [36] and are at the risk to drive a car accidentally, whenever they get access to it. Spe-

cialist neuropsychological tests [30] are used to assess the different memory systems.

Ageing, mild cognitive impairment, dementia and driving

Ageing

Normal ageing affects various aspects of cognition. Inter-individual variability of cognitive performance increases with age, which makes separation between normal and pathological ageing difficult for individual cases. Variability is not uniform across all cognitive domains. Greatest variability is usually found in tests where speed of processing is critical, for example tests assessing attention and executive function. Other tasks, for example visual construction or semantic memory tasks, have less variability [37]. Potential reasons for increased variability are age-related changes to the brain, different levels of education, mild sensory impairments (e.g., visual and auditory impairment) and the time of the day when individuals are tested [38]. Cognitive ageing per se, especially below the age of 80 years, does not sufficiently explain unsafe driving [4, 39].

Mild cognitive impairment (MCI)

MCI describes a cognitive state, which lies between normal cognition and dementia. There is usually evidence for some cognitive decline, but the activities of daily living are preserved or only minimally impaired [40]. MCI is a relatively novel entity with different cognitive functions affected (e.g., amnesic MCI) and with different causes (e.g., vascular MCI). To date, only few studies have assessed driving safety of MCI patients (e.g., [41, 42]). Both studies demonstrated worse driving in MCI patients than in age-matched controls in a driving simulator assessment [42] and in an on-the-road test [41]. Further prospective studies are needed to clarify which drivers with MCI are at increased risk while driving. From a practical and clinical point of view, annual cognitive follow-up assessments are reasonable, because of the increased risk of MCI patients to develop dementia (8–14% per annum) [40]. There is, however, no evidence-based consent about testing frequency for MCI patients who wish to continue driving. If in doubt, on-the-road testing will be helpful.

Dementia

Dementia describes a clinical syndrome, which is characterised by progressive cognitive decline in at least two cognitive domains (one of them being memory), lasting at least 6 months. The severity of cognitive impairment needs to interfere with activities of daily living to fulfil diagnostic criteria [43]. The prevalence of dementia increases sharply with age [44]. Dementia can impair driving and increase crash risk. In numbers, the probability of a person with dementia to become involved in a motor vehicle accident is between 2 to 18 times higher when compared to age-matched controls [45]. Driving impairment and increased crash risk depend on the cause of dementia, disease severity and behavioural and psychological symptoms associated with dementia.

Common causes of dementia and their impact on driving

Alzheimer's disease (AD)

Alzheimer's disease is the most common cause of dementia and most studies assessing driving and dementia refer to AD (table 1). In a study by Dawson and colleagues [46], subjects with AD committed 80% more driving safety errors on an ORT than cognitive intact controls. In driving simulators, AD patients had a shorter time to collision and they made more errors, such as lane violations or off-road events, than MCI patients and healthy controls [42, 46]. Two prospective cohort studies demonstrated that driving safety can already be impaired in early disease stages and that there is a decline in driving performance starting in mild stages of the disease [46, 47].

Dementia – others

Only few studies have assessed driving in dementia other than AD. One driving simulator study [48] compared the driving of patients with Huntington disease to controls. It found worse driving in patients. Another cross-sectional study compared the driving of patients with fronto-temporal dementia (FTD) and controls in a driving simulator [31] (table 1). FTD patients drove faster, ran over more stop signs and had more off-road crashes than controls. This driving behaviour fits well to executive dysfunction, impaired impulse control and personality changes, and emphasises the importance of frontal cognitive functions for driving.

Diagnostic criteria for Parkinson's disease dementia (PDD) have only been recently refined [49]. Patients with Parkinson's disease (PD) are at increased risk for developing dementia [50] which emphasises the need for follow-up assessments, if PD patients wish to continue driving. Most studies, assessing driving in PD patients, excluded demented patients [51, 52]. They found that PD patients had difficulties with driving as the disease progressed [51], but the difficulties were related in part to motor symptoms, postural instability, tendency to fall asleep and impaired contrast sensitivity. Impaired driving in patients with PD has also been related to excessive daytime sleepiness and medication (i.e., dopamine agonists) [53]. In non-demented PD patients, some of the impairments can be overcome by car modifications [54]. Studies specifically assessing driving in PDD patients are lacking.

Dementia severity

Several studies have prospectively compared driving in older persons with dementia throughout different levels of disease severity [47, 55]. Both studies indicated that disease progression and severity are predictors for driving deterioration. One study of state-recorded crash data [56] found no difference in crash risks between controls and AD patients, however, this finding may be related to the methods used, which included a retrospective analysis and small sample size. Dementia severity in AD patients is often assessed in specialist services using the Clinical Dementia Rating (CDR) [57]. CDR is a composite scale which quantifies cognition (memory, orientation, problem solving) and function (independence in community affairs; independ-

ence in personal care and the level of function in home and hobbies). The scoring ranges from 0 to 5 points, with higher values indicating more impairment (CDR 0.5: very mild dementia; CDR 1: mild dementia; CDR 2: moderate dementia; CDR >3: severe dementia). Several consensus statements base recommendations on CDR scores [8]. Quality standards of the American Academy of Neurology (AAN) consider CDR useful for identifying patients at increased risk for unsafe driving especially when CDR scores are ≥ 1 . Several patients (40–80%) with CDR 0.5 will pass an ORT examination [8]. However, CDR is a time-consuming rating and is therefore rarely used outside of specialists' clinics.

Commonly used cognitive screening tests and driving

The screening tests most commonly used by GPs in Switzerland to detect cognitive impairment are the Mini-Mental State Examination (MMSE) [58] and the Clock-drawing test (CDT) [59].

Mini-mental state examination

The MMSE [58] tests five distinct cognitive domains: orientation; concentration or working memory (serial 7s or spelling backwards); attention (immediate recall); language and praxis (naming, following 3-step command, construction); and memory (delayed recall). It hardly tests executive functions and visual perception. The maximum score is 30 and the test takes approximately 10 minutes. The cut-off proposed to separate normal ageing from cognitive impairment is age- and education-dependant [60, 61]. In clinical routine, a cut-off value of approximately 26–27 out of 30 points is applied to separate normal from abnormal cognition at age 70 [61, 62]. Using this cut-off in an elderly Swiss population with a mean age of 72 years and 11.5 years of education allowed separating cognitive impairment from normal ageing with a sensitivity

of 81% and a specificity of 91% [62]. A similar cut-off has been proposed for highly educated (>16 years of education) Americans aged 80 years or older [63]. A slightly lower cut-off was suggested in the British community survey (cut-off ≥ 24 ; average age 81 years and 50% less than 6 years of education) [64]. MMSE helps to screen for cognitive impairment, or to monitor cognitive function over time. However, the MMSE alone without a more detailed assessment and clinical judgement is not sufficient when establishing a diagnosis of dementia.

MMSE scores correlate poorly with driving performance. A recent meta-analysis found that the MMSE score was not more reliable to discriminate drivers who pass or fail in an ORT, than a simple driving knowledge test (e.g., traffic sign recognition test) [18]. As a rule of the thumb, some authors [8, 15, 65, 66] proposed that fitness to drive is usually not maintained when MMSE score is ≤ 24 , but a prospective validation of this suggestion is lacking. MMSE scores can fail to indicate cognitive impairment, especially in patients with frontal lobe dementia, as it hardly screens for frontal dysfunction.

Clock-drawing test

The CDT evaluates comprehension, memory, visuo-spatial abilities, abstract thinking and executive function [59]. The test is easy to administer usually requiring less than 5 minutes. One challenge of the CDT is that there are numerous different scoring systems [59, 62, 67]. It is not entirely clear whether clock-drawing scores depend on age, gender and education [59, 62, 67]. CDT together with MMSE may supplement each other especially when screening for dementia [62]. Thalmann and colleagues [62] used a 7-point scoring system with a 10-cm pre-drawn circle: 12 numbers present (1 point); number "12" is correctly placed (2 points); the clock hands having correct proportions (2 points); the subject reading the time correctly (2 points). The instruction was, "please draw a clock and write all numbers and clock hands into it". Once this was achieved,

Table 1: Summary of recent studies on dementia and driving performance.

Author, Year	Study design	Study population	Assessment method	Key findings
Alzheimers Disease (AD)				
Ott BR, 2008 [47]	Prospective cohort	52 patients with AD (CDR = 0.5) versus 32 patients with AD (CDR = 1)	ORT	Median time to driving restriction due to failure on road test, at-fault motor vehicle accident or dementia progression was 605 days for CDR = 0.5 and 324 days for CDR = 1
Duchek JM, 2003 [55]	Prospective cohort	21 patients with AD (CDR 0.5), 29 with AD (CDR 1.0) and 58 elderly controls	ORT	At baseline, 41% of subjects with CDR = 1 versus 14% with CDR = 0.5 versus 3% with CDR = 0 were judged as unsafe drivers. Mean time of follow-up until persons were judged as unsafe was <3 months for CDR = 1, 10 months for CDR = 0.5 and 14 months for CDR = 0
Dawson JD, 2009 [46]	Cross sectional	40 subjects with AD (mean MMSE 26.5 \pm 2.5) versus 115 elderly controls	ORT	Subjects with AD committed 80% more safety errors than controls. Lane observance errors were more common in drivers with AD
Frittelli C, 2009 [42]	Cross sectional	20 patients with AD (mean MMSE 22 \pm 4) versus 19 age-matched controls	Driving simulator	AD patients showed a higher number of lane violations and a longer mean latency in visual reaction time compared to controls
Whelihan WM, 2005 [80]	Cross sectional	23 patients with AD (CDR = 0.5) versus 23 age-matched controls	ORT	Patients yielded significantly higher values on a weighted assessment score, meaning poorer driving performance
Frontotemporal Dementia (FTD)				
De Simone V, 2007 [31]	Cross sectional	15 subjects with FTD versus 15 controls matched for age, gender and education	Driving simulator	FTD patients committed significantly more safety errors, the most important being speed violations, off-road accidents, collisions and ignored stop signs

CDR = Clinical dementia rating; ORT = On-the-road Test; MMSE = Mini-Mental State Examination.

the next instruction was, “write down the time of the clock you draw, as if it was shown in a time-table or on a digital display”. With this instruction and scoring system they found CDT to be sensitive and specific (77 and 75%) when separating cognitive impairment and normal ageing, with a cut-off score of 5 out of 7 points. When combined CDT and MMSE testing was used, sensitivity increased to 81% and specificity to 90%. Freund and colleagues [68] used CDT to predict driving simulator outcomes. Overall prediction of poor simulator performance was 90%. Results will be interpreted with caution until replicated and confirmed with ORT performance.

Conclusions

In Switzerland, approximately 175 000 older persons are evaluated for their fitness to drive every year [1]. The medical assessment is usually done by their GP. The main question to be answered with the assessment is not whether a person is fit or unfit to drive, but whether a medical condition exists which may interfere with driving safety [15]. Among potential medical conditions interfering with driving, progressive cognitive decline, often caused by dementia, is one of the main reasons to advise older drivers to stop driving [4, 8].

The current literature suggests that cognitive ageing per se, in the absence of any other medical conditions interfering with driving, is not a major risk factor for driving impairment, especially below the age of 80. However, the situation is more complicated once a diagnosis of dementia is made and queries about driving safety are raised. The extent to which driving is impaired due to dementia depends on its cause and its severity. Up to 30% of drivers with dementia continue driving after the initial symptoms have been observed [69] and the median time until they cease driving is approximately three years [70]. During this time, up to 30% have at least one accident with 11% reporting an accident-at-fault [71]. Dementia is a progressive disorder which remains often undiagnosed in the initial stages and, if discovered at an early stage, the time of diagnosis does not necessarily equate to the time when a person with dementia becomes an unsafe driver [47]. These facts raise important questions about the cognitive screening measures needed for GPs to raise suspicion for dementia and to judge whether a person with dementia remains fit and safe when driving. It is important that the suspicion of dementia is openly communicated by the GP at an early stage, because if not disclosed, it will be difficult to refer to cognitive impairment in the context of a medical driving assessment for the first time.

The cognitive screening tests (MMSE and CDT) [58, 59] are helpful when discovering global cognitive impairments especially when used together [62], but unfortunately they are neither accurate in predicting whether a person is a safe driver, nor sufficient when diagnosing dementia. The role of newer assessment tools that better incorporate executive function and are more sensitive to detect mild cognitive impairment, for example the Montreal Cognitive Assessment (MOCA) [72], is unclear and warrants further investigation.

Once cognitive impairment is established, it is important, independent of the question about driving safety, to establish the cause and to exclude treatable or contributing factors, such as depression, hypovitaminosis B₁₂ or hypothyroidism [73, 74]. Memory Clinics often assist GPs in this process and also in the judgement of whether cognitive impairment is of an extent that it interferes with driving. Helpful guidance for health care professionals about how to communicate a diagnosis of dementia can be found, for example online (<http://www.alzheimer.ca/english/care/ethics-communicate.htm>). After the diagnosis is disclosed, a discussion with the patient and his/her family about the future driving plans can be started. Patients need to be prepared for the eventuality of driving cessation. Alternatives to driving should be considered, for example to travel with public transport or to become a co-driver when the spouse is driving. The search for alternatives needs time and possible additional information [75]. However, if there is evidence for advanced cognitive dysfunction or substantial risk when driving (table 2), the patient should be advised to immediately cease driving. It is strongly advisable for health professionals not to make any private arrangements with patients, which are not foreseen and accepted by the driving regulation authority in charge.

Additional assessments are needed to rule out other medical conditions (e.g., visual impairment, head turning difficulties, unstable diabetes mellitus) or medication additionally interfering with driving. A thorough history is recommended which includes questions about the licence group, the insight into the extent of cognitive impairment and its possible risks for driving; driving habits; driving difficulties, avoidance strategies and accidents and near accidents (table 2). A collateral history is crucial as many older drivers with dementia tend to considerably overestimate their driving skills [76]. If consent for collateral information is not given, this should be a warning sign which may suggest unsafe driving. From our experience, the patients most difficult to advise are those who wish to continue driving with cognitive impairment without reliable information. Based on the outcome of these additional assessments, patients will need to be advised to stop driving if necessary or to continue driving subject to close follow-up assessments [4, 8, 55]. The advice given to patients needs to be thoroughly documented in the medical file. Most patients will follow medical advice and this impression is supported by published research [47]. In the rare event of a non-compliant patient, who is at risk while driving, legislation of most countries including Switzerland (SVG Art 14, Ziff 4) [77] allows health professionals to inform the driving authorities about medical concerns associated with driving.

Most driving expert groups [8, 15, 65] and quality standards of the American Neurological Association [8] advise to stop driving when moderate to severe dementia is diagnosed and they recommend further assessments if an older driver with very mild dementia wishes to continue driving [15]. If in doubt, a referral to traffic medicine and ORT is helpful. The latter is useful to explore whether the disease interferes with driving safety. ORT furthermore allows taking compensation strategies into account. As a general rule for ORT, “the car should not stick out in the traffic”.

In Switzerland, ORT cannot be repeated if failed [78] and therefore it may be advisable for the driver to consult a driving instructor before taking ORT. A criticism of ORT is the standardisation of the procedure (e.g., driving the own car, driving a dual-pedal-controlled car, the selection of the route and others) [4] and the costs, which need to be covered by the driver independent of the outcome.

Driving safety in older persons is an area of active ongoing research. There are several shortcomings of existing studies that hinder evidence-based straight forward driving assessment in the GP's office:

1. Most research conducted so far used a cross-sectional or case-control study design and only a few prospective longitudinal cohort studies are published [47, 55]. Longitudinal studies are important because dementia is a progressive disease. Since car crashes are rare events, large cohorts are needed to prospectively investigate crash risk.
2. Most studies investigated performance in the ORT or driving simulator as the main study outcome. Yet, the correlation between driving performance and crash risk is, to date, not well established [79].
3. The legislation differs between countries. This makes it difficult to define a uniform assessment algorithm. Furthermore, there is no evidence-based cut-off score for any cognitive test to determine fitness to drive in an older person. Therefore, GPs will have to base their judgment on a clinical impression, a thorough medical history and possibly specialists' advice.

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Table 2: Questions and steps to consider for GPs when assessing older drivers (adapted from [8]).

<p>What is the patient's most commonly used way of transport? What are his/her alternatives? How much does the patient drive? Is there an immediate risk? Is there any driving-relevant co-morbidity or medication? Is there any evidence for Progressive cognitive impairment? Executive or visual perceptual dysfunction? Personality change with lack of insight or impulsivity? Progressive speech disorder? Signs of self-neglect, impaired ADLs; e.g., when undressing? Is there a collateral history? Is there a co-driver? Are there concerns about driving safety (tickets, warnings, bumps, accidents, near misses)? Have other people concerns about the driving of the patient? Does the patient self-restrict driving, e.g., by driving only at daytime, sticking to known routes and avoiding rush hour or bad weather? Does the patient usually follow my advice in other circumstances?</p> <p>Next steps: Document the advice given in the medical file. Seek further advice if in doubt (e.g., traffic medicine or Memory Clinic). Review cognitive function regularly (e.g., every 6 months). In the rare case of non-compliance, enforce your advice. Then consider a report to the driving authority. Do not make any arrangements with the patient, which are not supported by the driving regulatory authority in charge.</p>
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