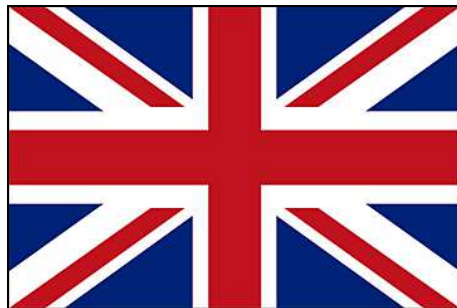




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## **Elderly drivers and safety**



### **The elderly and driving safely**

#### **General information and advice.**

*This is meant to be a modest contribution to help the elderly continue to be more prudent, to meet less risks so that future road traffic has less accidents: less serious, with a smaller number of deaths, with less injuries and less damages.*



Thanks to science, people live longer. In years to come there will always be a greater number of elderly people driving: both women and men. Advanced age, doesn't prevent people from driving, but their performances must be considered at the steering wheel and the necessary competences. Recognizing a change of physical abilities and habits, can improve ones results at the steering wheel, and if health allows it, one may drive until a very advanced age.

A lot of activities would not be possible without public and private transport, for the various visits to relatives, friends, shops, doctors, the elderly people often use the car.

Without this vehicle, especially for those who don't live in the city, social life would be limited, condemning the elderly to a lonely life, with less autonomy, to a marginated life, causing dangerous isolation that increases social costs and causing depression.

Elderly people usually travel less than young people, they are more careful, calmer and less reckless, and they drink less alcohol. They often drive in the daytime and not in peak hours. Remember that the majority of accidents (it seems 90%) are not caused by the lack of knowledge and psychomotorial functions, but from problematic attitudes of personality, from unsuitable social behaviour and violation of the road code. These characteristics are rarely related to elderly drivers. With the increase of age, there is an increase in the probability of changing performances. The elderly are able to drive in complex situations if they continue to drive regularly and with continuity.

## SOME PROBLEMS

### Insecurity in situations of chaotic traffic.



In heavy traffic one must drive with great care and concentration. It seems that drivers over 65 manifest insecurity in situations of chaotic traffic, due to a decrease of faculties and abilities: hearing and sight, concentration and time of reaction.

From occurred accidents, it results that elderly people respect less: red traffic lights, giving way to the right and stopping at a crossroad.

Aging people have more difficulty adapting to situations and taking quick decisions when under pressure. They have difficulty carrying out complex assignments and perceiving new situations. Due to these changes, elderly drivers, are unable to carry out different assignments contemporarily with attention, that is: the perception of movement and control of the automated behaviour). This can cause problems in driving behaviour at an "operational" level in certain complicated situations.

People over 65 have a high proportion of typical traffic accidents, such as:

- changing lane (ex. near crossings);
- changing direction of travel;
- difficulty observing road signs;
- management of dangerous interactions during movement (ex. unforeseen)
- management of situations that need to interact with other road users.

It has been noted that after 70 years, the index of the number of accidents begins to grow (faster than 30-60 years), even more seriously after 80 years.

The elderly make up for some loss of ability by driving slower, driving smaller distances, choosing less congested roads, less dangerous, less difficult and driving only during the day.

### Decreased mobility.

Aging decreases the muscle strength, speed of movement, agility and mobility of the limbs, fatigue is also faster. The driver of a vehicle must have full power of movement. Whereas the elderly may be restricted on movement of the cervical and lumbar spine.

The following can become a source of danger in some cases:

- 1) getting onto the motorway (or ringroad) and overtaking, in relation to the use of mirrors for backward security;
- 2) at crossroads: Looking to the right and left;
- 3) In reversing manoeuvres: looking backwards.

One has reduced flexibility and security in sensory activities. The decrease in muscle strength may affect the ability to suddenly press down the brake pedal, brake for a sudden emergency (for example a child who suddenly crosses the street).

## Decreased visual acuracy.



Eyes perceive 90% of the information needed to control.

Aging decreases the visual acuracy and it takes longer to focus things at different distances.

Peripheral vision narrows and the retina needs more light.

We know that a 60 year old driver needs a quantity of light, 3 times higher than a teenager: he needs twice the time to adapt from light to dark. Vision is reduced at dusk and at night.

The elderly are more sensitive to the light withstand and need more time to see normally (after a glare). *It is advised NOT to use coloured glasses when driving at night, unless prescribed by the doctor.* *They decrease vision at close distances (for example, looking ahead and at the speedometer, and vice versa).*

Remember that *visual orientation is slower. You must also be able to see when you look at the side directly opposite.*

The lateral field of vision is reduced: what is going on both right and left of the road.

The movements that occur in the area on the edge of the visual field cannot be seen clearly.

*Remember that one has a reduced speed of processing visual information.*

## Loss of hearing.



Often the elderly have weaker hearing than the young.

The perception of high frequency sounds lessens. Sometimes it is more difficult to hear low tones and understand from which direction a noise is coming. The loss of hearing, can sometimes cause problems of balance in this case driving can be difficult and dangerous.

It has been shown that there is a decrease in performance when paying attention to a constant sound or different sounds. These disorders often can be corrected with hearing aids which are very comfortable and almost invisible. Hearing defects can put people at a greater risk of accidents.

## Decreased concentration.

Many older people often get tired more quickly, than when they were young, they have more difficulty concentrating. This can create problems in complicated traffic situations (ex. Circulating at peak times in junctions with heavy traffic) increasing the risk of accidents.

The intellectual efficiency is essential for safe driving. With advancing age there may be a fall in response to stimuli (stimulus).

## Fewer reactions.

The reaction time (TR) is the interval which separates a stimulus from a voluntary reaction (response).

The TR indicates the speed with which a person reacts to a stimulus.

It's the interval which occurs between the presentation of the sight or sound of something and the beginning of response of the person. Some people believe that an exact assessment of TR allows us to deliver correct conclusions on the efficiency of a subject, about the ability of attention and vigilance (essential functions when driving).

**The reaction time for the elderly, often increases with the advance of years, wrong reactions do not increase.** One has a reduced ability to react to stimuli presented in rapid succession: which increases the likelihood of accidents. When you have to resolve a complicated situation, the time of response gets longer and hence one is more likely to react wrongly.



### Increased risk of disease.

There are diseases caused by 3rd age that may have implications on how one drives. It may happen that these diseases occur simultaneously.

### Heart disorders.

It seems that about 45% of deaths are caused by heart problems.

We have deterioration of the regulating processes in the body and blood circulation.



High blood pressure (over 180/90 mm Hg) may cause complications, a check-up is advised.

Many drugs for treating hypertension have side effects that reduce the ability when driving because they cause: tiredness, dizziness and different levels of consciousness.

Many elderly have a **pace-maker**: If you are followed by a specialist you can drive a car, but after the installation of the instrument it is better to wait 4-6 weeks before you drive, because of any inconveniences.

With arteriosclerosis one has problems of movement. If after a walk of 5-10 meters acute pains occur in the legs, do not drive.

After a heart attack, as a precaution, it is advisable not to drive for the first 3 months.

### Arthritis and osteoarthritis.

Many elderly people are limited in movement due to painful degeneration located in the hips, knees and spine.

It may happen that the ability to twist the cervical spine is limited, as a result one may control only partially side traffic.

When you change lanes, always remember that there are blind spots (dead corner-angle) therefore you must turn your head well to see each side.

Who has such difficulty, when carrying out parking manoeuvres, they should use more the rear-view mirrors so as to avoid twisting the head. In case of severe arthritis of the spine, it is recommended that you have a check-up regularly, to be fit for driving.



LOOKING BACKWARD SECURITY (example: parking, reversing).



## Diabetes.

Diabetes is a major metabolic disorder in the elderly.

Those who use **insulin** (due to change of amount of glucose in the blood) may feel tired, have muscle cramps, headaches, palpitations, see less and have changes in level of consciousness.

To avoid this one must control precisely the amount of glucose in the blood with diet and insulin intake, the effects of diabetes can affect vision. Diabetics often have movement disorders and neurological diseases.

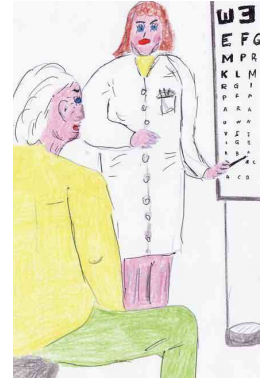
## Eye diseases.

May occur in the elderly: a maculopathy, **cataract** (blurring of the lens), glaucoma, a chronic disorder that can cause problems in the visual field, even those who have suffered a stroke may have a narrowed field of vision or diplopia (double vision).

It is very difficult to drive safely if one has eye problems caused by diseases that can not be corrected satisfactorily.

There are wide individual differences with regard to the specific damage.

*Be aware of changes in your health that can affect driving*



## Often Medicines are necessary.



*Older people often take drugs to cure their ailments. For many diseases, it is crucial at times to take medicines on a regular basis.*

**Many medicines can have dangerous reactions on driving.** Every doctor should inform people that certain drugs cause risks when driving automobiles. **Sleeping pills:** they may also effect people during the day (slow reactions, poor perception).

- 1) **Medicines for allergies and bad travelling(sickness):** may cause tiredness (limited reactions, sleepiness at the wheel).
- 2) **Stimulants:** use reserved energy and cause sudden tiredness. They reduce ones ability of judgement and affect movement.
- 3) **Sedatives** often make people indifferent towards things; and they are less able to concentrate.
- 4) **Antidepressants:** Some types of antidepressants can lower blood pressure, cause sight problems (adapting vision at a distance and close to), troubled conscience.

There are medicines, particularly when taken together with others, that may alter driving ability.

**Advice:** *always ask the doctor if the medicine could have consequences (side effects) when driving and read the leaflet that accompanies it, to know its side effects. If one has doubts don't drive.*

## MEDICAL CHECK-UP: help security.

In the interest of ones health, after 60 it is best to have a check-up once a year. Article 126 of the Road Code: duration and confirmation of the validity of the license. The medical examination is meant to ensure that one is still capable of driving a vehicle, it is a periodical check on the psycho-physical requirements necessary to drive a vehicle. It must be done by a qualified doctor, called the Health Officer, who controls ones sight, hearing, spine, limbs, heart and blood vessels, abdominal organs and nervous system. Everything depends on ones age and which type of licence one has.

### Table: length of validity of driving licences.

	Age issue - To renew driving licence				
Category of driving licence (1)	Up until 50 years	Over 50 years	Over 60 years	Over 65 years	Over 70 years
<b>A</b>	10	5	5	5	3
<b>B</b>	10	5	5	5	3
<b>A, B, C, D specials</b>	5	5	5	5	3
<b>C</b>	5	5	5	5 (2)	5 (2)
<b>D</b>	5	5	5 (3)	(4)	(4)
<b>E</b>	The same as driving licence to which it is associated				

(1) In all cases, in addition to confirmation of the validity of the licence, you must submit to inspections of the requirements for confirmation of the CAP (which happens every 5 years). CAP is the Certificate of Professional Qualification. CAP replaced by CQC.

(2) 65 year olds and over must undergo an inspection every 2 years if they drive lorries exceeding (>) to 3.5 tonnes, trucks and vehicle not exceeding 20 tonnes, or other heavy vehicles.

(3) From 60 to 65 year olds, people driving lorries or public transport such as buses, need an annual medical certificate.

(4) Over 65 yearolds who have a category D licence, are downgraded to Category C.

### Possible conclusions.

- one achieves the medical needs: one is fit to drive.

- by fulfilling certain conditions the minimum medical requirements are achieved(eg by wearing glasses, treatment of certain ailments, etc. ...). You may require medical examinations at regular intervals.

- Determination of health disorders that do not allow the driving of a motor vehicle, even in special conditions.

Elderly people with health problems that do not allow safe driving, have often experienced these disorders and are aware of having to give up driving, both for their safety and for others. Many older people voluntarily give up their licence which is a brave and wise decision showing respect for oneself and for others.

### PREVENTION REDUCES THE RISK OF ACCIDENTS.

With advancing age we have a reduction of sight, hearing, mobility and ability to concentrate and react.

The elderly, therefore, find themselves in difficulty in chaotic traffic which increases the risk of accidents.

It seems that with increasing age, there are less accidents caused by speeding and alcohol, but there are more caused by not giving way at crossroads etc.

In such accidents, the consequences for the elderly are more serious, because of their greater weaknesses.

The elderly are much at risk as pedestrians and cyclists, because more attention is required, consequently they are less focussed on what happens in the street (divided attention).

### HELPFUL ADVICE:

1 - Do not drive if you do not feel well.

2 - Always CLEAN the windshield, rear window and rear-view mirrors.

3 - Check the headlights (if they work well and are clean), the indicators (arrow), the window-

wipers and brushes to clean well, the fan and, very important, the tires (the pressure and wear of the tread).

Remember that "smooth tires" lose grip, especially on wet roads, dangerously increasing the risk of accidents.

4 – Have regular check-ups for safety control.

5 - Physical activity and being relaxed, helps keep one fit until old age. Who has good physical and mental health will have fewer difficulties on the road.

6 - Do not drive at peak times (more traffic).

7 - Do not drive where there are traffic jams (use roads with less traffic, even though it takes a little longer).

8 - Keep lens of glasses clean: it seems superfluous, but dirty glasses reduce visibility so it is better to change scratched lens.

9 - Do not drive in bad weather. Fog, rain and snow reduce visibility, for all (even younger drivers). Wet roads increase danger.

**Remember:** when it rains, drained tarmac/road surfaces improves visibility and driving comfort.

The grip is the same as wet road surfaces which are not drained. In both cases the grip is much lower than in dry weather conditions. Drive slower when it rains.

10 - Travel in the day time. It's best not to drive at dusk or at night. With advancing age, one sees less but one is more troubled by glaring lights. In summer, the heat can cause problems during the day, driving during the hottest hours, can cause tiredness.

Remember that: in conditions of tiredness and when one usually sleeps, sudden drowsiness may occur. At night, the death rate is 5 times higher than during the rest of the day. In 2005 more than 40% of fatal accidents occurred between 23.00 - 06.00hours, despite the lack of traffic (but for this reason, some people take advantage of travelling at a higher speed).

11 - Plan long journeys well. Plan the route well, so you'll travel more relaxed. Divide long journeys in stages. It's best to avoid traffic and choose roads you know. Do not travel on an empty stomach because it can cause weakness. It's best to eat small meals, easily digestible, with lots of sugar and no alcohol.

12 – Visit regularly the doctor. 60 yearolds should be have a check-up once a year from the family doctor. It's easier to diagnose illnesses in time, and it gives one the opportunity to stay in shape.

13 - Remember alternatives to travelling by car. Sometimes you can use public transport, go with a friend or a family member and this can be more pleasant. If you have time, your goal could be an opportunity for a walk ... and a good workout.

## COMFORT OF THE CAR

Often older people drive in a peaceful manner. Comfort is very important and all commands should all be within reach of the driver, without having to perform contortions.

Automatic windows are very practical where the system of issuing tickets is in force(eg car parks, highway, motorways, etc. ...).

Outer side mirrors are also useful with electrical switches on the inside of the car.

**Automatic light wipers** means better visibility. Dirty headlights means less light.

**Adjustable steering wheel**, both in height and length allows a better position; many cars today are equipped. The adjustable steering wheel is very useful because it allows one to find the right driving position.

**Adjustable driving seat.** The older we are the more demanding we are for comfort. The seat should allow for easy entry and exit from the vehicle and promote a relaxed and comfortable driving. Have good lateral support to deal with curves. The seat should be adjusted to the body: the height and backrest should be adjusted for each driver, in a personal way. Better again if the back has an adjustable lumbar support.

**Automatic Gearbox.** The car starts without jolting. It avoids using the clutch to change gears, one is more relaxed while driving and may pay more attention to the traffic. It causes less tiredness, as a consequence we have: less distraction of road signs, ones reactions work better, one is less irritable, more careful and prudent in the case of accidents.

**ABS.** Anti lock system of the wheels is a help in case of emergency braking. When braking hard (sudden emergency) blocking of the wheels is avoided, the vehicle may still be "driven" (eg,

avoiding obstacles), otherwise the car goes straight on with kinetic force (one cannot drive, but goes straight on and runs into something). Important: with the ABS braking one does not brake less. The ABS can save your life.

**Air Conditioning.** The heat inside the car has a negative impact on driving conditions for the driver. With air conditioning the temperature can be adjusted. Not just in summer but in winter, avoid over-heating the passenger compartment.

**Cars with 4-5 doors.** cars with 4-5 doors have an angle of greater openness and entry is easier, for example, in parallel parking. This is because, with an equal area of opening, 4-5 doors, the doors are shorter and open more. In addition the car safety belts for front seats can be reached more easily, without turning round too much.

**Car radio.** The car radio entertains and is also useful for road information (eg routes, columns highway, etc. ..). This information will allow you to avoid difficult and dangerous situations. Advice to older people to use simple car radios, with few functions, because it is easier to use.

**Attention,** when changing the station, do not be distracted while driving. It also applies to those who, for example, use the cigarette lighter, a light crush can cause an accident (eg investments cyclists, changing lanes, crash cars on the side of the road, etc ...).

**Tip:** When you change the radio station or use the cigarette lighter (better not to smoke), look up (eg radio, navigator, etc ...) and make the movement with your hand, keep your eyes on the road so as not to alter your steering, a slight movement of the arms (also 2 cm.) can move the steering wheel and cause the risk of a crash and accident. This risk increases with increasing speed. If you have difficulty in stopping, fix the radio and then restart your journey, it is better not to risk an accident.

## MOVING AROUND WITHOUT A CAR

It may occur that problems due to age, one day, won't allow you to drive a car anymore. It is important that you prepare yourself for this possibility. Among relatives and friends there is always someone who can give you a lift and in company the journey can be more pleasant.

## PUBLIC TRANSPORT



Sometimes it's better to get used to public transport (bus, train, etc. ...).

Public transport is cheaper (the car has costs of ware, fuel, insurance, road tax, maintenance etc ...). Furthermore, the elderly pay less on public transport. You can make long journeys by train, bus, etc ... and mobility is ensured. Journeys by car become more tiring and difficult with the advancing of years. For small emergencies, there is also a taxi: just make a phone call.

Age does not limit fitness to drive: it can be useful to reflect on ones capability of driving.

### Some questions:

- Has it become more difficult to drive?
- Recently, have you avoided an accident by pure chance?
- Has it happened that you react slower than before?
- Has it happened that you haven't seen pedestrians or cyclists or important signs?
- Do you get nervous in heavy traffic?
- Does it irritate you when you need to turn at crossroads?
- Does getting into traffic from a driveway with a "STOP" sign create discomfort for you?
- Do you feel uncomfortable driving in the city?
- Do you have difficulty overtaking a car when driving on secondary roads?
- Do people often overtake you when driving in towns or villages?
- Do you have trouble parking in reverse?
- In the evening do glaring lights affect you?



- Do you have the impression that passengers are afraid of driving with you?
- Has it occurred that other road users do not approve of your way of driving (eg with flashing lights, horn shots, etc. ...)?
- Relatives and friends have advised you to give up the licence?

The affirmative answers indicate that you have problems due to age and that may increase the risk of accidents. You should go to the family doctor to find out if there is a problem and find a solution.

### **TO DRIVE SAFELY**

#### REMEMBER:

- Be prudent,
- Be calm,
- Keep a safe distance,
- Moderate speed,
- Keep an overall view,
- Be patient towards others,
- Indicate your intentions and keep them (put the indicator out and respect it),
- Avoid situations of stress (peak hours, very busy roads),
- Don't underestimate tiredness: stop and rest,
- Always fasten seat-belts and adjust headrest.

## Have a safe journey

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