Driving after stroke.

By Caroline Rule, Occupational Therapist

One of the big questions after a person has had a stroke is "*Will I be able to drive again?*" Unfortunately this is not an easy question to answer. Every stroke has different results as it depends on the size and area of the brain that was affected. The effects of a stroke can range from being negligible to debilitating thus making it difficult to apply one set of regulations to returning to driving after a stroke. Because of the complexity of the damage there can also be a wide variety of functions affected which will affect a person's ability to drive. Therefore each person who has had a stoke needs to be assessed on an individual basis. The best person to do this is the therapist who works with them in rehab and who has the clearest picture of their function, however it needs to be a team decision between the therapist, the client (assuming that they have full insight), the family and where possible, a driving instructor. If the treating therapist does not feel comfortable making the decision regarding returning to driving, then the client should be referred for a full driving assessment to a driving specialist.

With the effective medical treatment and rehabilitation that is available nowadays, it can be anticipated that the patient will gain a significant amount of recovery over a period of time. So there is always a debate as to when the best time is to do the driving assessment. If it is done too early there may be expensive adaptations, re-training and re-testing requirements, whereas if it is done at a later stage once there has been a greater amount of recovery, the process of returning to driving may be smoother. In the early days after a stroke, a patient may be deemed "Not Fit to Drive", and may require continued therapy. With effective rehabilitation there may be the possibility of gaining enough recovery in order to be able to drive again. This again makes the decision regarding returning to driving or handing in one's licence a difficulty one.

<u>Legislation:</u>

The first step is to look at what the Legislation says about driving after a stroke. In the Road Traffic Act (RTA), Chapter 4 covers Fitness to Drive. It states, amongst other things, that a person is disqualified from holding a driving licence if he or she has uncontrolled epilepsy, sudden attacks of disabling giddiness or fainting, any form

of mental illness under the Mental Health Act 1973, any condition causing muscular incoordination, uncontrolled diabetes mellitus and "any other disease or physical defect which is likely to render him or her incapable of effectively driving and controlling a motor vehicle of the class to which such licence relates without endangering the safety of the public." This paragraph describes a wide range of diseases and disabilities which almost certainly includes a person who has had a stroke although it is not clearly stated.

If a person becomes aware that he or she is disqualified from holding a driving licence, it is their responsibility to hand in their licence to the MEC (which is done through the local licensing department). Unfortunately there is no clear differentiation between a permanent defect/disability and one which is still recovering. So it appears that an individual is only required to hand in their licence once it has been proven that they are permanently incapable of effectively driving and controlling a motor vehicle. However this is open to interpretation as it is not clearly stated in the RTA, and the systems that are in place through the testing centres do not always correlate with what is written in the RTA.

The SASOM Medical Guidelines for Fitness to Drive provides more detailed medical information regarding driving after a stroke. The guidelines recommend that a person who has had a stroke must not drive for a minimum of 1 month. This is largely due to the increased risk of having a secondary stroke which must be prevented from happening while driving. They may resume driving after this period if the clinical recovery is satisfactory. However, if there is residual neurological deficit 1 month after the stroke occurred, particularly in the areas of visual field, limb function and cognitive skills; then that person may be disqualified from holding a driving licence and may need to notify the MEC, again this needs to be evaluated on an individual basis.

Insurance:

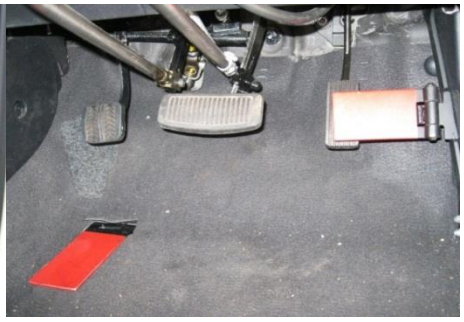
The real watchdogs regarding driving after a stroke are the insurance companies. It is the client's responsibility to inform their insurance company if they have had a stroke as it will affect their risk profile. If they are involved in an accident and have not informed their insurer, they may find that their cover in invalid. Each insurance company has their own policy regarding driving after a stroke, so make sure you find out from your insurer.

How does a stroke affect driving?

A stroke can cause damage in various parts of the brain which can be localised or generalised depending on the type and severity of stroke. This can result in various physical, visual, cognitive and behavioural changes which, in turn, affect a person's ability to drive safely.

Physical impairments such as hemiplegia, sensory loss, poor coordination and control of movement may affect driving in terms of the physical control of the pedals, steering and use of indicators. In a case where a person is unable to use the left side of their body (left hemiplegia), an automatic vehicle may be used and they may require a steering wheel spinner depending on the amount of function in the left arm and if it can assist with steering. Having the indicator on the right-hand side of the steering wheel will make it easier for their right hand to activate it.

A left foot accelerator adaptation may also be considered for a person with right hemiplegia (loss of function in the right side of their body). However this is a very difficult conversion to learn to adapt to, particularly for people who have driven a manual car for many years as the clutch action is the opposite of using a brake and accelerator pedal. It is essential that the individual must have good motor planning in order to achieve this new skill, and they must undergo a series of driving lessons to help them adapt and achieve a high enough standard of driving.



It is important to remember that if a person requires any adaptations to the vehicle controls in order to compensate for a physical disability, they must be retested by the licencing department and issued with a restricted licence (Vehicle Restriction 3). If they drive with an incorrect licence they are driving illegally. It is the individual's responsibility to report their medical condition, hand in their licence and request a re-test and then ensure that they have the correct licence!

Impaired vision may also disqualify a person from holding a driving licence. According to the RTA, a minimum visual acuity of 6/12 (20/40) is needed for each eye or if one eye is blind and does not meet the above requirement then a minimum acuity of 6/9 (30/40) is needed for the other eye. A minimum horizontal visual field of 70 degrees is needed in both eyes or if one eye is blind then a minimum total horizontal visual field of at least 115 degrees is needed in the good eye.

Visual loss as a result of a stoke is a lot more complex than acuity and peripheral vision. It may result in visual field loss (hemianopias/ quadrantanopias), visual neglect, blind spots, double vision, visual-spatial difficulties or a variety of visual processing difficulties. Few of these complications get picked up on a standard acuity or peripheral vision test, but if they are present they will result in unsafe driving. Any form of visual neglect is unsafe to drive and has a poor prognosis for return to driving. Critical information from the fast changing environment is easily missed, e.g. not observing an oncoming car when turning across traffic, or a pedestrian crossing the road. A person even with mild visual neglect may have difficulties with parking a car, changing lanes or positioning a car on the road. Good vision is essential for reading road signs and judging speed, and distance between cars and other objects in the environment. In some cases, certain aspects of visual fall-out resulting from a stroke can be recovered through an effective visual rehabilitation program.

Behavioural and cognitive difficulties associated with a stroke have a big impact on safe driving. Behavioural difficulties such as aggression, irrational behaviour, impulsivity and an inability to judge the effects of a person's behaviour on other road users (poor insight) can lead to dangerous decision making which puts the safety of the driver and other road users at risk. Any person who lacks insight into their own limitations or behaviour should not be allowed to drive

Extensive cognitive skills are required for driving. Any impairment, even if mild, can present a challenge. A person with poor memory may have a tendency to get lost, a person with reduced concentration may not attend well to particular things in the environment, and a person with reduced processing speed may struggle to quickly absorb, evaluate and respond to the surrounding context.

In addition to these basics, many higher order cognitive functions – such as planning, anticipation, judgement, initiation, problem solving, decision making, and divided attention (multitasking) – are also required to be able to navigate a complex and ever-changing driving environment. This is especially true for emergency situations where a

person is forced to react suddenly. Consequently, any impairment in these abilities can have a significant impact on the quality and safety of a person's driving.

Ultimately driving requires the continuous interaction of all of the above skills and processes in order to safely negotiate the dynamic and complex road and traffic environments and to ensure the safety of all road users. Even a mild impairment in any one of these areas can have a significant impact on overall driving performance. However, it is important to remember that each person is unique. Therapists need to gather as much information as they can from all resources including team members and family to ensure that they obtain an accurate driving history and explore each physical, visual, cognitive and behavioural area in detail. In addition to detailed and thorough assessments, the Road Traffic Act and SASOM Guidelines can assist therapists in using clinical reasoning to ultimately make a decision regarding return to driving after a stroke.

Alternatives to driving:

Where an individual is no longer considered fit to drive, then alternative options need to be explored. These will depend on the area where the individual lives and will also depend on the support structures around them. The most common systems that people rely on include, family, friends, lift clubs, church support groups, public transport such as the Gautrain if they are fortunate enough to be close to a Gautrain route. Uber has become a viable solution for individuals in the Gauteng area. The Uber booking system can give an individual full independence or it can be managed by a family member if the individual is no longer able to book for themselves.

RESOURCES:

Driving Assessments:
Rolling Rehab – specialists in physical disabilities and recommendations on vehicle adaptations. Caroline Rule 0835606886 rule@global.co.za www.rollingrehab.co.za
Rehab Matters – specialists in cognitive driving assessments. Haley Norval or Sacha Hildebrandt 011 8036649. www.rehabmatters.co.za
Visual assessments and rehabilitation:
Eyetek - Neuro Optometrist Casha Meintjes 011 475 2830 www.eyetek.co.za
Heinrich & Mann – Optometrists specialising in Syntonic Phototherapy and visual Rehabilitation. 012 6645707