

ORGANIZATION NEWS

Information/Education Page

Driving After Mild Stroke



In the U.S. over 305,000 people have a mild stroke each year.¹ Even mild stroke may lead to difficulties with physical function, thinking, and vision.² Because of these challenges, people with mild stroke can complete basic tasks fairly easily, but may have difficulty returning to complex tasks like driving.² Approximately 1 out of every 5 adults with mild stroke report difficulty with driving.³

This handout provides a checklist, which will help someone who has had a mild stroke and wishes to resume driving do so safely. This handout can also provide guidance on what to do to address concerns about safe driving.

- Do you have difficulty pushing the gas and brake pedal?
- Do you stop too quickly?
- Do you have difficulty shifting the gear in a car with manual transmission?

When can I return to driving after a mild stroke?

- Each state has its own requirements for returning to driving after a stroke that involves considerations of vision, seizures, and retesting standards.
- You should not drive for 1 month following your stroke.⁴
- You should talk to your doctor about driving after a mild stroke.
- Your doctor may refer you to other health care providers for a driving evaluation.

Difficulty thinking

- Do you have difficulty making quick decisions?
- Do you have difficulty multitasking or doing more than one thing at a time?
- Do you have difficulty driving while talking to other people in the car or listening to the radio?
- Do you drive too fast or too slow?
- Do you have difficulty turning or changing lanes?
- Do you forget where you are going?
- Do you notice changes in the route at the last minute?
- Do you have difficulty following GPS directions?
- Do you get lost along familiar routes?

How do I know if I can drive safely?

Review the checklist below. If you answer yes to any of the following questions you may be unsafe to drive.

Medical issues

- Has it been less than 1 month since your stroke?
- Have you had a seizure in the past 6 months?
- Do you take any single or combination of pills that can cause drowsiness?
- Are your physician, family, or friends concerned about your driving?

Difficulty moving arms or legs

- Do you have difficulty turning the steering wheel?
- Do you veer out of your lane?

Difficulty seeing

- Do you have blurred vision or difficulty reading street signs while driving?
- Do you have double vision while driving?
- Do you sometimes miss road signs and traffic lights?
- Do other cars seem to come out of nowhere?
- Do you have difficulty judging the distance between you and another car?
- Do you have difficulty driving at night?
- Do you have difficulty seeing the lines on the road or noticing curbs?
- Do you get dizzy when you move your head to check blind spots?
- Do you have difficulty focusing on something near (checking speed) and then focusing on something in the distance (checking road signs)?
- Does glare from the hood or headlights bother you when driving?

- Do you have difficulty seeing from the driver side window to the passenger side window (peripheral vision) when looking forward?

General driving issues

- Do you have unexplained scratches on the body of the car?
 Have the number of traffic tickets you received increased in the past 6 months?
 Do you find yourself more easily agitated or angered while driving?

Driving evaluation

If you answered yes to any of the above questions or believe that you may be unsafe to drive, you may need to talk to your doctor (neurologist and/or primary care physician). In the presence of a visual problem, your doctor may refer you to a specialist eye doctor (neuro-ophthalmologist). Your doctor may also refer you to a neuro-optometrist (another eye care specialist) who will provide and teach you how to use assistive devices (glasses or bioptics)

that will improve your vision while driving. A neuropsychologist or rehabilitation psychologist may also be consulted to assess your memory, thinking, and attention skills which are important for driving.

You may benefit from a professional driving evaluation. In a driving evaluation, you will work with a certified driving rehabilitation specialist (CDRS) or driving rehabilitation specialist (DRS) who will assess your driving skills. Both the CDRS (with additional training and certification) and the DRS are typically rehabilitation professionals such as occupational therapists, physical therapists, or speech–language pathologists with experience in providing driving evaluation and training, recommending special equipment or restrictions, and identifying alternative methods of transportation, if necessary.

A driving evaluation typically starts by testing of the skills needed to drive safely, including the ability to move your arms and legs in a coordinated manner, good vision, problem solving, reaction time, and concentration. These skills are usually evaluated using paper-based and computer-based tests. Sometimes, your driving performance will be evaluated in a driving simulator (like in a driving video game). The CDRS or DRS may also take you on the road for a behind-the-wheel evaluation.

	What do I do?	Which health care provider can help me?
Driving simulators ⁵	You sit in a model car with a computer screen. You complete driving tasks on the computer to practice your skills.	<ul style="list-style-type: none"> • CDRS • DRS
Off-road therapy ⁶	You practice thinking skills such as tuning out distractions, multitasking, planning, or reaction time.	<ul style="list-style-type: none"> • Occupational therapist • Speech–language pathologist • Physical therapist • Vision therapist • Optometrist (eye care specialist) • Vision therapist • Occupational therapist • Optometrist (eye care specialist) • Ophthalmologist (eye doctor)
Vision skills	You practice scanning your environment or watching cars as they pass to improve your brain's speed and accuracy in processing what you see.	<ul style="list-style-type: none"> • Occupational therapist • Optometrist (eye care specialist) • Vision therapist • Occupational therapist • Optometrist (eye care specialist) • Ophthalmologist (eye doctor)
Glasses	If appropriate, you can wear special glasses to help correct your vision.	<ul style="list-style-type: none"> • Occupational therapist • Optometrist (eye care specialist) • Ophthalmologist (eye doctor)
Behind-the-wheel training	While driving a real car, an instructor will accompany you to teach you to: <ul style="list-style-type: none"> • Plan driving schedules (ie, daylight hours and off-peak hours) and drive familiar streets. • Use a gas station pump (ie, pumping gas and payment). • Pay attention to and adjust driving according to weather (ie, heavy rain or snow). • Practice general driving skills (ie, use of reference points to help stay in the lanes, managing distractions on the road, and looking ahead for obstacles). • Use of a GPS for navigation. 	<ul style="list-style-type: none"> • CDRS • DRS
Car adaptations and modifications	Your car may be adapted to make it easier for you to drive. For example, you may get: <ul style="list-style-type: none"> • Automatic gear transmission for problems with your legs or arms • Spinner knobs for weakness in the arm • Cross-over controls for difficulties turning on signal indicators or windshield wipers • Left-foot accelerator pedals for weakness in the right leg • Wider mirrors for better scanning 	<ul style="list-style-type: none"> • CDRS • DRS • Equipment dealer

What treatment is available?

If you are unable to safely drive after your mild stroke, you may be able to get better at driving with some form of training.

There are 6 types of intervention available.

Some people who have had a mild stroke cannot safely return to driving. In that case, health care professionals can work with you to figure out other forms of transportation such as commercial transportation services (taxi, limo services, or shared ride services like Uber or Lyft), and support from family and friends. They can also help you problem solve ways to get what you need without having to drive, such as home delivery of groceries instead of going to the store yourself.

Where can I find additional information and resources?

Organization	Description	Contact
AAA Foundation for Traffic Safety CarFit	Learn more about safe driving and take a driving safety test. Find a trained technician to help you ensure that your vehicle is properly fit to your needs.	https://www.aaafoundation.org https://www.car-fit.org
National Mobility Equipment Dealers Association	Find a vendor to help you make your car more accessible.	http://www.nmeda.com/
The Association for Driver Rehabilitation Specialists	Find a local CDRS or DRS.	www.ADED.net
Eldercare Locator	Find delivery services available for persons who cannot drive or who have driving restrictions.	www.eldercare.gov

Authorship

This page was developed by Hannes Devos, PhD (*e-mail address*: hdevos@kumc.edu); Ickpyo Hong, PhD, OTR; Amanda Frias, OTR/L, MOT, DRS; Suzanne Burns, PhD, OTR; Jaclyn Schwartz, PhD, OTR/L; and Abiodun Akinwuntan, PhD, MPH, MBA.

Disclaimer

This information is not meant to replace the advice from a medical professional. You should consult your health care provider regarding specific medical concerns or treatment. This Information/Education Page may be reproduced for noncommercial use for health care professionals to share with patients and their caregivers. Any other reproduction is subject to approval by the publisher.

References

1. Wolf TJ, Baum C, Conner LT. Changing face of stroke: implications for occupational therapy practice. *Am J Occup Ther* 2009;63:621-5.
2. Hu X, Heyn PC, Schwartz J, Roberts P. What is mild stroke? *Arch Phys Med Rehabil* 2017;11:2347-9.
3. Edwards DF, Hahn M, Baum C, Dromerick AW. The impact of mild stroke on meaningful activity and life satisfaction. *J Stroke Cerebrovasc Dis* 2006;15:151-7.
4. Hird MA, Vesely KA, Christie LE, et al. Is it safe to drive after acute mild stroke? A preliminary report. *J Neurol Sci* 2015;354:46-50.
5. Akinwuntan AE, De Weerd W, Feys H, et al. Effect of simulator training on driving after stroke: a randomized controlled trial. *Neurology* 2005;65:843-50.
6. George S, Crotty M, Gelinias I, Devos H. Rehabilitation for improving automobile driving after stroke. *Cochrane Database Syst Rev* 2014;25:CD008357.