



Driving after Stroke: Fitness-to-drive Assessments & Vehicle Modification

Kate Lopez, OTR/L, MHS, LDI, CDRS

Certified Driver Rehabilitation Specialist

President, Association for Driver Rehabilitation Specialists

Driver Rehabilitation

- ▶ Driver Rehabilitation Specialists work with individuals of all types of abilities and disabling conditions
 - ▶ Driving Education/Training
 - ▶ Vehicle Modification/Driving Independence
 - ▶ Driver Cessation/Retirement
- ▶ **Association for Driver Rehabilitation Specialists (ADED)**
 - ▶ Supports professionals working in the field of driver rehab through Credentialing and Education
 - ▶ **Certified Driver Rehabilitation Specialists (CDRS)**
 - ▶ Gold Standard expert on full spectrum of driver rehab services
 - ▶ Driver Rehabilitation Professional (DRP)- microcredential
 - ▶ Information for the Public, Networking, and Directory of providers
 - ▶ www.aded.net




ADED


The Association for Driver
Rehabilitation Specialists

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The World's Largest Provider of Driver Rehabilitation Education.

Our educational programs and credentialing pathways allow providers to help aging individuals and those with disabilities reach their full potential for independence by getting behind the wheel.


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Kate Lopez

OTR/L, MHS, LDI, CDRS

Mercy Health-West

Hospital

3301 Mercy Health

Boulevard Suite 550

Cincinnati

Ohio

45211

United States

513-215-3092

Driving After Stroke



► <https://www.youtube.com/watch?v=P7NM5I-eLqs>

Video by US Dept. of
Transportation and NHTSA

Warning Signs in Driving After Stroke

(Adapted from "Driving and Stroke" a Factsheet from ADED)

- ▶ Inappropriate driving speeds (too fast or too slow)
- ▶ Needs help or instructions from passengers
- ▶ Doesn't observe signs or signals
- ▶ Slow or poor decisions (poor judge of distances, too close to other cars)
- ▶ Easily frustrated or confused
- ▶ Pattern of getting lost, even in familiar areas
- ▶ Accidents or near misses
- ▶ Drifting across lane markings into other lanes
- ▶ Hitting both pedals with one foot by accident



Driver Assessments: Fitness-to-Drive

▶ In-Clinic Assessment

▶ Visual-processing skills

- ▶ Visual Acuity, Saccades, Pursuits, Depth Perception, Contrast Sensitivity, Peripheral Vision, Color Vision
- ▶ Motor Free Visual Perceptual Test

▶ Cognitive Skills

- ▶ MoCA, Short Blessed, Snellgrove Maze Test, Clock Drawing, MMSE, knowledge of Road signs

▶ Motor Skills,

- ▶ MMT, ROM, Sensation, Proprioception, Coordination, Alternate Foot Tap Test/Reaction Time, diadokokinesis, balance, ability to get in and out of the vehicle

▶ Looking for any impairment that may impact driving performance

- ▶ “Red Flags”
- ▶ Is this permanent or temporary?
- ▶ Does this require modification, remediation, retraining?

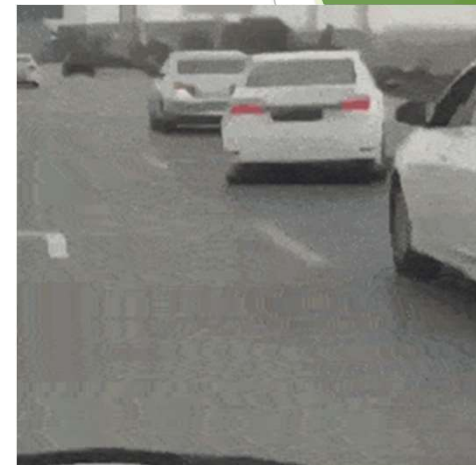
Driver Assessments: Fitness-to-Drive

- ▶ Behind-the-Wheel Assessment

- ▶ Variety of road environments
- ▶ Low to High Traffic, variety of intersections and obstacles
- ▶ Highway if indicated

- ▶ Outcomes

- ▶ Resume driving with or without restriction
- ▶ Vehicle Modification and/or Driver Training
- ▶ Continue with OT/PT/Speech intervention in indicated, return for reassessment
- ▶ Driver Retirement/Alternative Transportation Methods



Vehicle Modification and Driver Training

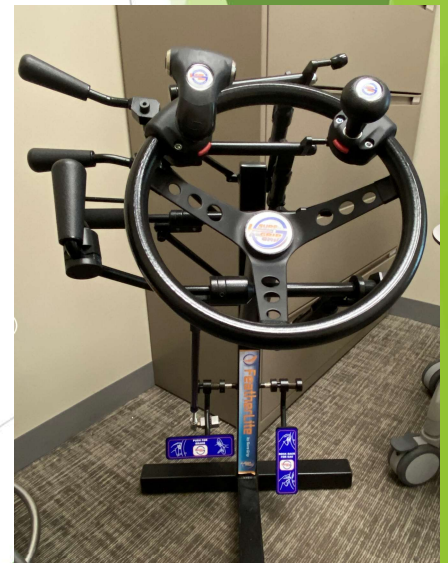
► Vehicle Modifications

- Steering Devices
- Left Foot Accelerator
- Accessory Controls
- Hand Controls
- Wheelchair securement
- Ingress/Egress assist
- Adapted mirrors
- High Tech (reduced effort steering, change in diameter of steering wheel, etc)



► Driver Training

- Equipment Use
- Techniques (Hemianopsia scanning, etc)
- Ohio BMV requires retesting for any equipment modification
 - "Request for Statement of Physician" form to be completed



Liability and Legal Procedures in Ohio

▶ Ohio BMV- Medical Restrictions on Licenses

- ▶ Visual Minimal Standards
- ▶ Modified accelerator, brake, turn signal, hand controls, outside mirrors, corrective lenses, bioptics, etc

▶ Liability

▶ Personal Liability

- ▶ Attest to ability when you renew your license
- ▶ Documented conditions, educate about impact on liability

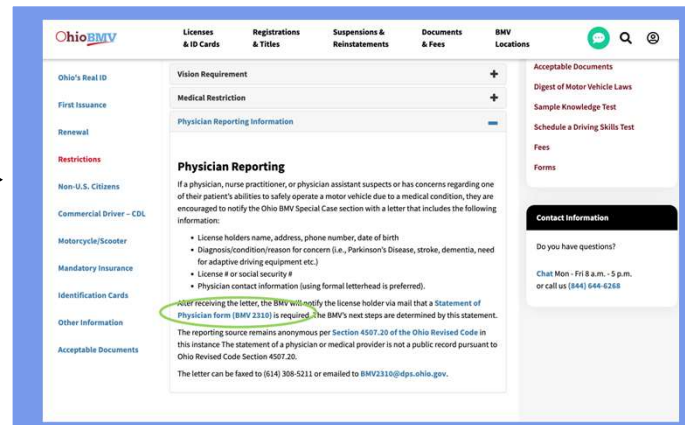
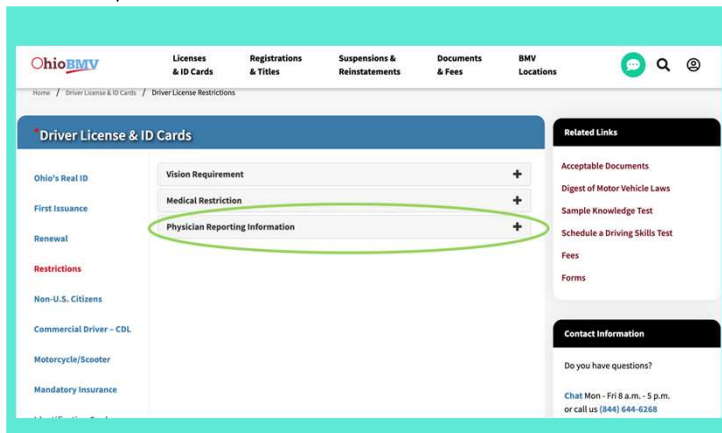
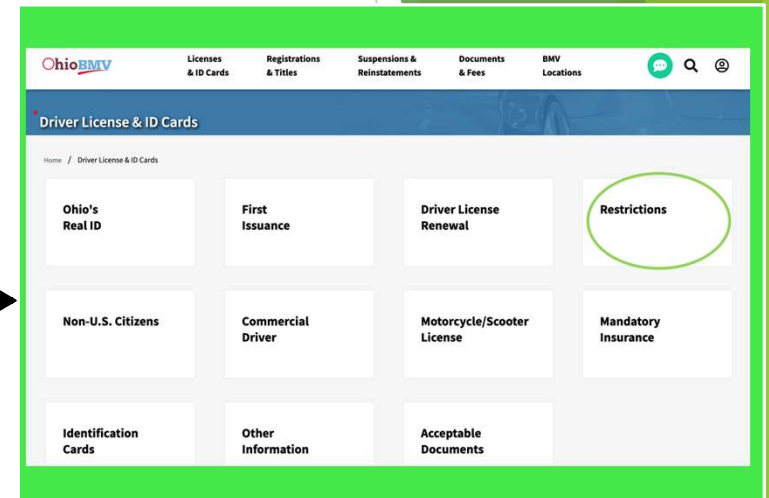
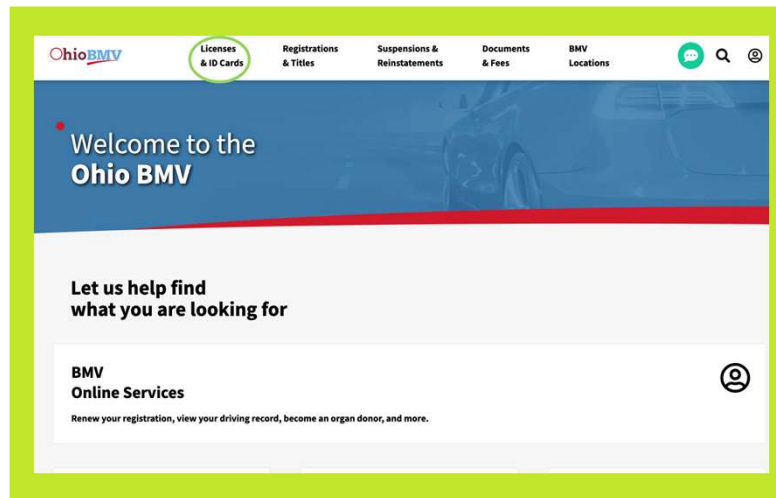
▶ Physician Liability

- ▶ Duty to Protect
- ▶ Duty to Protect Patient Confidentiality
- ▶ Balancing Ethical and Legal Duties
 - ▶ Patient should be advised of medical conditions, medications and devices that may affect driving performance
 - ▶ Know and comply with State Reporting Laws
 - ▶ Document Diligently



How to Report an Unsafe Driver:

Bmv.ohio.gov



State of Ohio

Physician Reporting

If a physician, nurse practitioner, or physician assistant suspects or has concerns regarding one of their patient's abilities to safely operate a motor vehicle due to a medical condition, they are encouraged to notify the Ohio BMV Special Case section with a letter that includes the following information:

- License holders name, address, phone number, date of birth
- Diagnosis/condition/reason for concern (i.e., Parkinson's Disease, stroke, dementia, need for adaptive driving equipment etc.)
- License # or social security #
- Physician contact information (using formal letterhead is preferred).

After receiving the letter, the BMV will notify the license holder via mail that a **Statement of Physician form (BMV 2310)** is required. The BMV's next steps are determined by this statement.

The reporting source remains anonymous per **Section 4507.20 of the Ohio Revised Code** in this instance. The statement of a physician or medical provider is not a public record pursuant to Ohio Revised Code Section 4507.20.

The letter can be faxed to (614) 308-5211 or emailed to **BMV2310@dps.ohio.gov**.

<https://www.bmv.ohio.gov/dl-restrictions.aspx#collapseB>



Request for Statement of Physician

OHIO DEPARTMENT PUBLIC SAFETY BUREAU OF MOTOR VEHICLES				DX / FILE NUMBER	
REQUEST FOR STATEMENT OF PHYSICIAN				PATIENT DRIVER LICENSE NUMBER	
PATIENT INFORMATION (Type or print in ink)					
PATIENT FIRST NAME		PATIENT LAST NAME		MI	DATE OF BIRTH
ADDRESS		CITY	STATE	ZIP CODE	PATIENT PHONE NUMBER
<input type="checkbox"/> Check here if this is a name or address change.					
RELEASE OF INFORMATION					
I hereby authorize and request information regarding my physical and mental condition be released to the Driver License Division, Bureau of Motor Vehicles.					
PATIENT SIGNATURE X				DATE	
PHYSICIAN'S STATEMENT - If new patient, are records of previous physician available? <input type="checkbox"/> Yes <input type="checkbox"/> No					
PREVIOUS PHYSICIAN NAME					
ADDRESS		CITY	STATE	ZIP CODE	
Is this patient being treated by another physician for any condition not being treated by you? <input type="checkbox"/> Yes <input type="checkbox"/> No					
OTHER TREATING PHYSICIAN NAME					
ADDRESS		CITY	STATE	ZIP CODE	
If yes, do you defer to the physician referenced above regarding the driving privileges of this patient? <input type="checkbox"/> Yes <input type="checkbox"/> No					
Patient history and/or physical reveal the following:					
<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Vision abnormalities or eye disease (not correctable by eyeglasses)				
<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Musculoskeletal disorder (including loss of limb)				
<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Cardiovascular disease (e.g., Stroke, Angina, Heart failure, Hypertension)				
<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Respiratory disease (e.g., Emphysema, Asthma)				
<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Diabetes Mellitus and/or other Endocrine disorders				
<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Neurological disease (e.g., Epilepsy, Multiple Sclerosis, Parkinson's disease)				
<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Impairment due to alcohol or drugs				
<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Psychiatric disorders				
<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Cognitive Impairment				
<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Other medical disorders which could interfere with driving ability				
EXPLANATION REQUIRED FOR ALL ANSWERS ABOVE. Implementation of sections 4507.20; 4507.08 and 4507.081 of the Ohio Revised Code, requires the following information be provided:					
1. How long has the condition(s) existed?					
CONDITION	NO. OF YEARS		NO. OF MONTHS		
CONDITION	NO. OF YEARS		NO. OF MONTHS		
2. Give date of last episode or exacerbation.					
CONDITION	YEAR		MONTH		
CONDITION	YEAR		MONTH		
2A. If #2 is not applicable, how long has the condition been under effective medical control?					
CONDITION	NO. OF YEARS		NO. OF MONTHS		
CONDITION	NO. OF YEARS		NO. OF MONTHS		
BMV 2310 9/21 [760-0310] Page 1 of 2					
RESTRICTED – PII					

DX / FILE NUMBER			
PATIENT DRIVER LICENSE NUMBER			
3. If medication is prescribed, has your experience with this patient indicated that he / she can be depended upon to take the medication regularly and as instructed? <input type="checkbox"/> Yes <input type="checkbox"/> No			
4. In your professional opinion, is this patient's condition(s), on this date, sufficiently under effective medical control to operate a motor vehicle?			
PLEASE NOTE: IF YOU ANSWER "YES" TO PARTS B, C, or D BELOW, THE EXAM WILL BE CONDUCTED NOW. THE EXAM(S) WILL BE CONDUCTED AT A DRIVER LICENSE EXAM STATION.			
A. <input type="checkbox"/> Yes This patient should be permitted to retain driving privileges.			
B. <input type="checkbox"/> Yes This patient should be permitted to retain driving privileges only if they can pass a partial driver license exam which consists of a vision screening and a road test for driving and maneuverability.			
C. <input type="checkbox"/> Yes This patient should be permitted to retain driving privileges only if they can pass a vision exam.			
D. <input type="checkbox"/> Yes This patient should be permitted to retain driving privileges only if they can pass a complete driver license exam which consists of a vision screening, written test of Ohio's laws and signs, and a road test for driving and maneuverability.			
E. <input type="checkbox"/> No. This patient should NOT be permitted to retain driving privileges.			
5. In your professional opinion, should this patient be reevaluated in the future for continued driving privileges? <input type="checkbox"/> Yes <input type="checkbox"/> No			
If yes, reevaluation is required: <input type="checkbox"/> Once every six (6) months. <input type="checkbox"/> Once every year. <input type="checkbox"/> Once every four (4) years.			
(Print or type)			
PHYSICIAN'S NAME		PHONE NUMBER	DATE
ADDRESS		CITY	STATE ZIP CODE
PHYSICIAN'S SIGNATURE X		PHYSICIAN'S LICENSE NUMBER	
NOTE TO PHYSICIAN: PLEASE MAKE A COPY FOR YOUR RECORDS. The Patient will be advised who signed the form.			
Please Return:			
Mail: Ohio BMV Attn: Special Case Unit P.O. Box 16784 Columbus, OH 43216-6784	E-mail: BMV2310@dps.ohio.gov	Fax: Attn: Special Case Unit (614) 308-5211	
BMV 2310 9/21 [760-0310] Page 2 of 2			
RESTRICTED – PII			

3. If medication is prescribed, has your experience with this patient indicated that he / she can be depended upon to take the medication regularly and as instructed?

☐ Yes ☐ No

4. In your professional opinion, is this patient's condition(s), on this date, sufficiently under effective medical control to operate a motor vehicle?

PLEASE NOTE: IF YOU ANSWER "YES" TO PARTS B, C, or D BELOW, THE EXAM WILL BE CONDUCTED NOW. THE EXAM(S) WILL BE CONDUCTED AT A DRIVER LICENSE EXAM STATION.

A. ☐ Yes This patient should be permitted to retain driving privileges.

B. ☐ Yes This patient should be permitted to retain driving privileges only if they can pass a partial driver license exam which consists of a vision screening and a road test for driving and maneuverability.

C. ☐ Yes This patient should be permitted to retain driving privileges only if they can pass a vision exam.

D. ☐ Yes This patient should be permitted to retain driving privileges only if they can pass a complete driver license exam which consists of a vision screening, written test of Ohio's laws and signs, and a road test for driving and maneuverability.

E. ☐ No. This patient should NOT be permitted to retain driving privileges.

5. In your professional opinion, should this patient be reevaluated in the future for continued driving privileges?

☐ Yes ☐ No

If yes, reevaluation is required:

☐ Once every six (6) months.

☐ Once every year.

☐ Once every four (4) years.

**** "Road Test" by BMV is NOT the same as a comprehensive driver's evaluation by a CDRS. If you want to have us complete an exam, wait for us to finish to help you determine which option to choose****


Ohio Revised Code 4507.20: Examination of licensee's competency

- ▶ A physician licensed under Chapter 4731. of the Revised Code may submit a report to the registrar stating that in the physician's professional opinion the holder of a driver's or commercial driver's license may be incompetent or otherwise not qualified to operate safely a motor vehicle due to medical reasons. Any such report submitted to the registrar is confidential, is not a public record, and is not subject to disclosure under section [149.43](#) of the Revised Code
- ▶ An investigation from the Ohio BMV Special Case Unit will initiate
 - ▶ Send letter to driver and request the physician form to be filled out within 30 days
 - ▶ No response = suspension of license and need to retake the Driving Skills Test including Maneuverability in Ohio to reinstate license
 - ▶ Many physicians utilize CDRS to help in choosing the best response

Kentucky....

Kentucky's Medical Review Office accepts reports from:

- Physicians
- Lawyers, Judges
- Law Enforcement Officers
- KSP license examiner
- County/circuit clerks
- OR 2 citizens with notarized signatures attesting to the concern of safety while driving

		KENTUCKY TRANSPORTATION CABINET Department of Vehicle Regulation MEDICAL REVIEW OFFICE		TC 94-182 Rev. 1/2020 Page 1 of 1	
MEDICAL REVIEW AFFIDAVIT					
Mail: Kentucky Transportation Cabinet, Department of Vehicle Regulation, Medical Review Board Office 200 Mero Street, Frankfort, KY 40622, Email: KYTC.MedicalReviewBoard@ky.gov Phone: (502) 564-1257 FAX: (844) 503-4111					
This form may be used to report a driver with a physical or mental impairment. Pursuant to 601 KAR 13:090, unless you are a physician, law enforcement officer, KSP license examiner, Commonwealth or county attorney, county or circuit clerk, sheriff, relevant employee of a government agency, or judge, this form must include notarized signatures of at least two (2) citizens attesting that the driver is incapable of safely operating a motor vehicle due to a physical or mental condition. The Transportation Cabinet may be required to release this document upon request by the driver or his or her representative; therefore, this document cannot be kept confidential.					
SECTION 1: DRIVER INFORMATION (Please print or type.)					
LAST NAME		FIRST NAME		MIDDLE NAME	
DRIVER'S LICENSE NO.		SOCIAL SECURITY NO. (optional)		DATE OF BIRTH (mm/dd/yyyy)	
ADDRESS (street)		CITY		STATE	ZIP
Explain in detail why you believe the driver is incapable of safely operating a motor vehicle. Please describe any unsafe driving behavior you have witnessed, any known physical or mental conditions that affect driving, and any incidents leading to this report. If more space is needed, please attach additional sheets.					
(If reporting a seizure, please provide the date of last known seizure.) Date of last known seizure (mm/dd/yyyy):					
SECTION 2: REPORTING INDIVIDUAL(S) (Please print or type.)					
Anonymous reports cannot be accepted. Please indicate whether you are a:					
<input type="checkbox"/> KSP license examiner		<input type="checkbox"/> Commonwealth/county attorney		<input type="checkbox"/> Employee of government agency	
<input type="checkbox"/> Law Enforcement Officer		<input type="checkbox"/> County clerk or circuit clerk		<input type="checkbox"/> Physician <input type="checkbox"/> Judge <input type="checkbox"/> Sheriff	
If none of the above, two notarized signatures are required below.					
LAST NAME		FIRST NAME		MI	TITLE (if applicable)
ADDRESS (street)		CITY		STATE	ZIP
LAST NAME		FIRST NAME		MI	TITLE (if applicable)
ADDRESS (street)		CITY		STATE	ZIP
SIGNATURE		DATE SIGNED		SIGNATURE # 2 (required if a citizen is reporting)	
NOTARY: Subscribed and sworn to before me on this date:					
NOTARY SIGNATURE		My commission expires:			

Referrals to a Driver Rehabilitation Specialist

- ▶ Driver Rehabilitation Programs
 - ▶ Hospital-based programs
 - ▶ Billing through medical insurance (under Occupational Therapy)
 - ▶ Private Disability Driving schools
 - ▶ Comprehensive Driving Programs include in-clinic and on-the-road driver assessments
 - ▶ Some programs offer in-clinic assessments and then refer to on-the-road assessments
 - ▶ (Simulated driving evaluations should never replace actual driving to determine driving cessation)
- ▶ In-clinic assessment vs Comprehensive assessment
- ▶ Decision remains with the physician

Alternative Transportation Options

- ▶ Driver Cessation or Driver Retirement
 - ▶ Acknowledge the loss and impact to autonomy
 - ▶ Include caregivers in education
 - ▶ Refer to local alternative transportation options
 - ▶ Cincinnati Council on Aging has an evolving list of options
 - ▶ Medical-based transportation included in some insurances
 - ▶ Uber/Lyft- GoGo Grandparent for non-smartphone users
 - ▶ Community-based ride share options
 - ▶ Metro/Access/CASS
 - ▶ No, autonomous driving is not a replacement- yet- for driving



Questions/Comments?

thank you!

References

- ▶ McGuire, M.J., & Schold Davis, E. (2012). *Driving and Community Mobility: Occupational Therapy Strategies Across the Lifespan*. Bethesda, MD: The American Occupational Therapy Association, Inc.
- ▶ Association for Driver Rehabilitation Specialists. (2023, April 5). *Driving and Stroke*.
https://3a8dc3aa5ff737fa1444-2a08583baa8f9872183a1f206f980a73.ssl.cf2.rackcdn.com/aded_26e3ae380c5ffcc69fe85185ef389c28.pdf
- ▶ Ohio Bureau of Motor Vehicles. (2023, September 15). Medical Suspension.
<https://www.bmv.ohio.gov/susp-other-points.aspx>
- ▶ GeriatricsCareOnline. (2023, September 15). Driving: Assessing and Counseling Older Drivers (4th ed.).
https://geriatricscareonline.org/ContentAbstract//TK015/TK015_VOL001_PAR_T005_SEC001_ITEM1/?param2=search

Videos of Mobility Equipment

- ▶ Left Foot Accelerator:
 - ▶ https://youtu.be/3tmUGmFfc2A?si=SL9gr__Yal8BkAzc
- ▶ Reduced-effort Steering:
 - ▶ https://youtu.be/O-Conwt_W0M?si=Ck-LfXA8qC1h4ABr
- ▶ Adapt Solutions- seating for ingress/egress (Link)
 - ▶ <https://youtu.be/44lvapWLE0k?si=kggPEXQoiB-0V2R4>
- ▶ Wheelchair Lift- Bruno
 - ▶ https://youtu.be/_zjJwmvxxAY?si=1ZKP92QfCz_MI_9