

Welcome Everyone

Tonight's Educational Forum will begin shortly

Adaptive Driving After SCI

Presented by:

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&

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Thank you everyone for coming to tonight's virtual session on Adaptive Driving. This is a continuation of Oregon Spinal Cord Injury Connection's ongoing sessions of Educational Forums. Tonight's forum will be recorded for our community members that couldn't attend. Please do not share any personal information that you aren't comfortable with being recorded. We'd like everyone to know this is a safe space to share and ask questions, so please respect others opinions and experiences. Please stay muted during all the presentations and you can put questions in the chat or save them till the end. Thank you.

There's more to having a set of wheels than getting from here to there. Having your own adapted vehicle is your ticket to freedom, independence and adventure. For people new to paralysis, or those that haven't taken the plunge of getting back behind the wheel, driving is a sure way to regain some independence. But can you do it? Can a paralyzed person get behind the wheel and handle the machine and the traffic? Driving is quite possible for many people who are paralyzed, even those with very limited hand and arm function. A wide range of adaptive driving equipment and vehicle modifications are on the market today. Driving with a disability often means relearning to drive. The rules of the road don't change, but the controls do. Depending on your level of injury and specific needs, adaptive vehicles can come in many varieties, and your ideal setup may include the following:

- **Hand controls for braking and accelerating**
- **Power assist devices for easy steering**
- **Touch ignition and electronic gear shifting**
- **Adjustable driver's seat**
- **Automatic door openers**
- **Ramp, lift or transfer assistance for entry**
- **Wheelchair storage options**
- **Joysticks for those with limited hand function**
- **Wheelchair docking system**

If getting behind the wheel feels daunting to you, or if you are unsure what equipment might be best for your level of injury then a driver's evaluation could be the best place for you to start your journey to independence.

The Association for Driver Rehabilitation Specialists (www.aded.net) is the world's largest provider of driver rehabilitation education. They keep a database of certified driver rehabilitation specialists throughout multiple countries. There are three listed in the state of Oregon.

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Tips to Find a Vehicle That Fits Your Needs

The following questions/tips can help with the vehicle selection process or adaptation of a vehicle you already own:

- Does the necessary adaptive equipment require a van, or will a smaller passenger car do? In other words, will you be driving from a wheelchair or can you transfer to the car seat? If you can transfer into a car, your choices are much wider.
- Will you fit in a minivan? A person may sit taller in the chair and may not clear the ceiling.
- Can the vehicle accommodate the hand controls or other needed driving equipment?
- Will there be enough space to accommodate other passengers once the vehicle is modified?
- Is there adequate parking space at home and at work for the vehicle and for loading/unloading a wheelchair or walker? Be aware that full-size vans might not fit in your garage or public garages or even in certain parking spaces.
- If a third party is paying for the vehicle, adaptive devices, or modifications, are there limitations or restrictions on what is covered? Get a written statement on what a funding agency will pay before making your purchase.
- If you are adapting a used van or family vehicle, make sure the technician has lots of experience.
- All lifts are not created equally, some just won't fit. Also, some lifts are built for wheelchair users and scooter users may not be able to use them.

Let's explore some of the options out there that could help you achieve your goal of driving independently

We have identified three main categories to consider when it comes to adaptive driving vehicle modifications:

- **Entering/exiting your vehicle**
- **Securing, storing and transporting your wheelchair**
- **Driving controls to operate your vehicle**

Entering and Exiting your Vehicle

There are quite a few options out there when it comes to entering/exiting your vehicle. Some of them require no vehicle modifications at all, while others require extensive modifications.

- **Muscle Power / Technique**
- **Portable Transfer Board**
- **Fixed Transfer Board**
- **Powered Up and Down Transfer Board**
- **Turny Evo Seat**
- **Automatic Doors**
- **Powered Lifts**
- **Manual / Powered Ramps**
- **SuperArm Lift**
- **6-Way Swivel Transfer Base**

Self Transferring Using Muscle Power/Technique

Some individuals with a spinal cord injury are able to independently transfer into their vehicle without aid or assistive devices using technique and strength.



Portable, Fixed and Powered Transfer Boards

Transfer boards can be a lower cost way to enter/exit your vehicle that requires less modifications than other options. Portable transfer boards require no modifications.



BraunAbility Turny Evo Swivel Seat

This style of transfer seat provides an option for those able to transfer independently that are still wanting to drive a vehicle that requires a higher transfer. Great option for trucks and taller SUV's.



Powered Lifts

Powered lifts have been around a long time and works great for full size vans and trucks. They are also commonly used in public transportation settings like public buses, medical transport and school buses.



Manual and Powered Ramps

Ramps are most commonly used with converted minivans and SUV's. They are most often accompanied by a lowered floor conversion.



SuperArm Wheelchair Lift

The SuperArm is a swing style lift best suited for full size vans, sprinter style vans, campers and RV's.



6-Way Powered Transfer Seat

This option is great for those using a lowered floor minivan or full size conversion van and want to transfer into the driver's seat from inside the vehicle. It allows for transfers out of the weather.



Securing, Storing and Transporting Your Wheelchair

Here are some of the options when it comes to securing, storing and transporting your wheelchair. There are different styles for both manual and power chairs.

- Automatic Docking Station
- Bruno Outrider
- Harmar Lift
- Stinger Lift
- Speedy Lift
- Manual Restraints / Tie Downs
- BraunAbility Chair Topper
- Breakdown and Load Chair

Manually Breaking Down and Loading Wheelchair

This option is often the simplest if you have the ability to do on your own. It seems to be the favorite choice for manual chair users that transfer into their vehicles either by strength/technique or transfer boards. It works with both rigid or collapsible frames. The wheels are usually removed and loaded separately than the frame, either in the passenger seat or behind it.



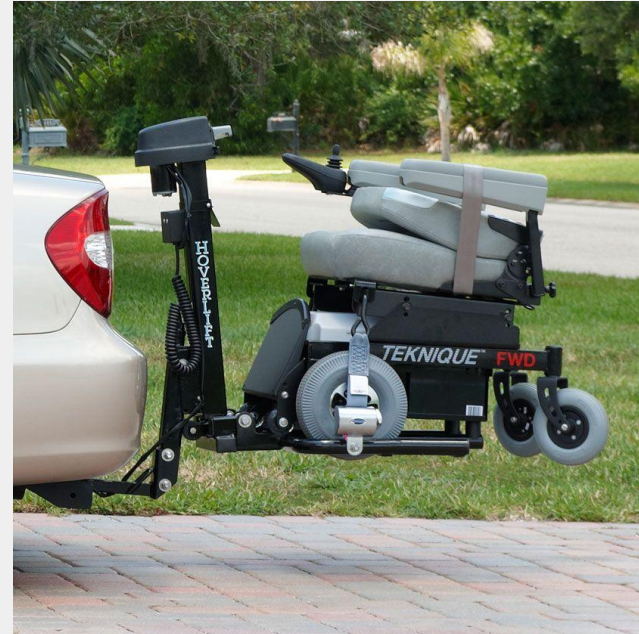
Manual Restraints and Tie Downs

Manual tie downs come in various styles. They are often used in lowered floor conversion vans to secure wheelchairs that the user is riding passenger. When driving independently they are usually used to secure your manual or power chair when the user is driving from the driver's seat. This will ensure your safety while driving so your chair won't slide.



Harmar and Hitch Wheelchair Carrier

This style wheelchair transport is a carrier that goes into your vehicle's trailer hitch. It comes in different types with some having manual ramps to others having an electric lift. These are typically used for transporting the wheelchair for passengers, but do work well for individuals driving independently that retained some mobility after SCI. Harmar makes a version that picks your chair up and stores it in the hatch of your vehicle.



Speedy Lift

The Speedy Lift is a quick and compact way to load your wheelchair behind the driver's seat. This works best when installed in a vehicle with an automatic door. The Speedy Lift pairs well with fixed & powered transfer boards and the Turny Evo Swivel Seat.



Bruno Outrider

The Bruno Outrider is designed to be used with trucks. They also have the option for a powered canopy that will keep your wheelchair out of the elements. This option works great with the Turny Evo and powered transfer boards.



BraunAbility Chair Topper

The Chair Topper is similar to the Bruno Outrider in that it picks up and loads your wheelchair. This is designed for use on cars though, and only works with collapsible manual wheelchairs.



Automatic Docking Systems

The automatic docking systems are often referred to by their brand names EZ-Lock or Qstraint. These systems work with both power and manual wheelchairs. Often these are the preferred systems by individuals that will be driving from their wheelchair. This is a very secure system, but the downfall is the bolt that gets mounted under your wheelchair as it does hinder your ground clearance some.



Driving and Hand Controls to Operate Your Vehicle

Here are some of the adaptive options when it comes to operating your vehicle. There are many options available for individuals with full upper body function, to those that are missing limbs or have severely limited arm and hand function.

- **Gas and Brake Controls (Mechanical & Electrical)**
- **Secondary Controls**
- **EMC Systems**
- **Steering Aids (With & Without Secondary Controls)**
- **Left Foot Accelerators**
- **Low / Zero Effort Steering**

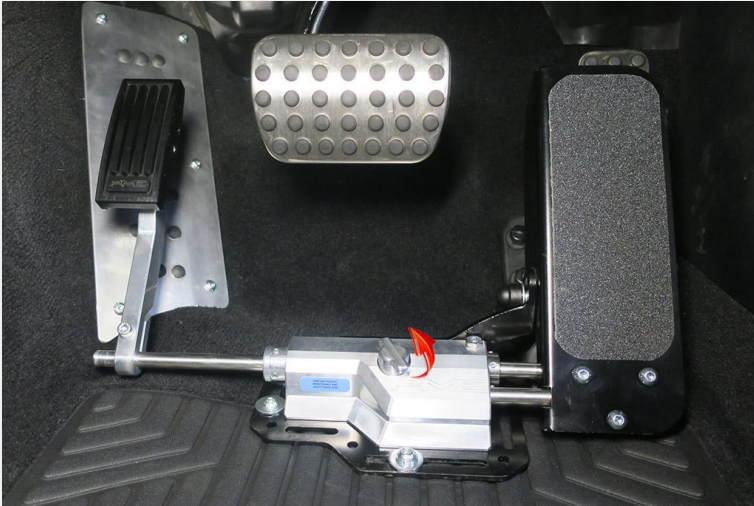
Gas and Brake Controls, Mechanical and Electrical

These are the most common hand control systems you'll see and come in a wide variety of options that meet lots of individual's needs. They come in both fixed and portable options, as well as mechanical and electrical systems. They range from push/pull, push/rock, push/thumb, push/right angle, push/twist and Veigel Compact II.



Left Foot Accelerators

Left foot accelerators can be an option for individuals that may have retained mobility on their left side. That could be individuals with an incomplete SCI, experiencing a loss of limb, or having partial paralysis from another condition such as a stroke.



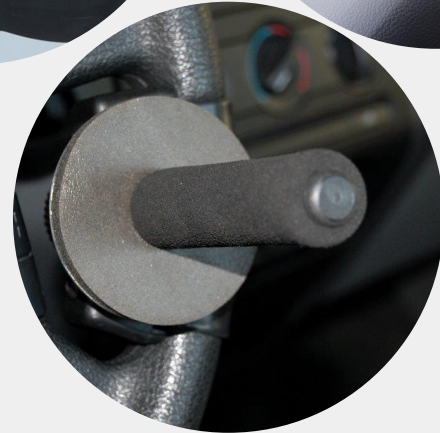
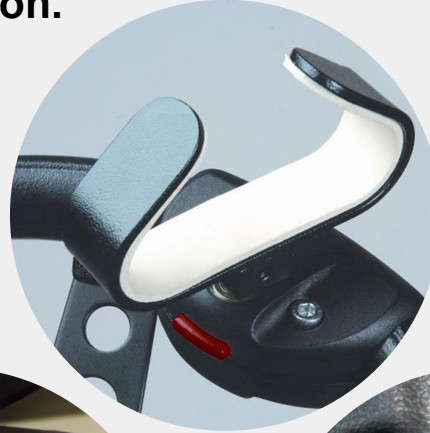
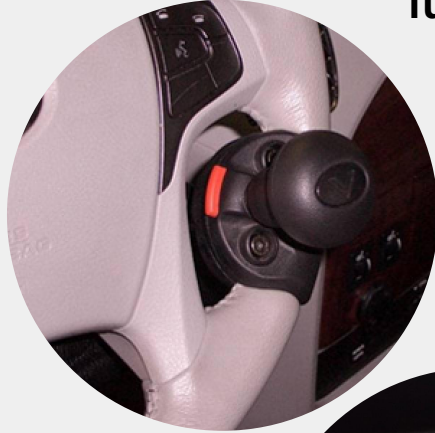
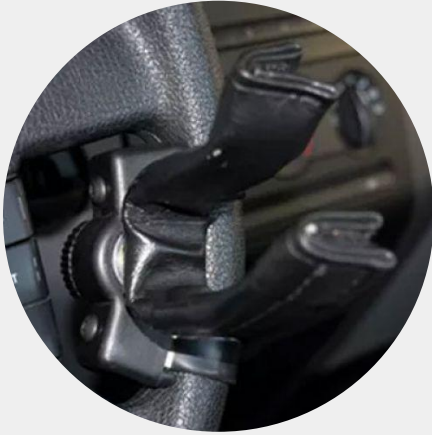
Secondary Controls

Secondary controls allow individuals to operate windshield wipers, turn signals, headlights and more while staying in control of your accessible vehicle.



Steering Aids

Steering aids come in many different styles including; knob, single pin, tri pin, cuff, amputee ring and quad fork. These can be a great tool for individuals with no or limited hand function.



Steering Aids with Secondary Controls

Enables drivers to use a steering aid and secondary controls all with one hand on the steering wheel. This allows for the other hand to be on the gas and brake controls without having to let go to turn on blinkers, head lights, wipers, ect.



Low Effort and Zero Effort Steering

Low effort steering reduces the effort needed to turn the steering wheel by approximately 40% and zero effort steering can reduce the effort by approximately 70%. This type of modifications can be extremely helpful to quadriplegics, especially when paired with a steering aid to help maintain grip.



EMC Controls

EMC Controls are high tech devices that enable individuals with little to no hand/arm movement to safely operate their adaptive vehicle. There are many variations to this type of system including. Primary controls for gas/brake and steering your vehicle. Secondary controls for turning on/off vehicle, shifting gears, using blinkers, wipers, horn, ect. Or a como system that offers both primary and secondary controls as shown in this video.



That concludes tonight's presentation on adaptive driving. We hope this information has been helpful. We'd like to thank James Kimsey and Oregon Mobility Solutions for being a part of this educational forum. Let's open it up to questions.



"Thank you very much, everyone, for participating in this educational forum. We hope it was useful to you and we are encouraged and grateful for your interest and time. We need to ask something of you... it would be extremely helpful to all of us who are involved in the ed forums to receive your candid and honest feedback on this particular event. Please do feel free to share openly, as any and all input will truly help us."

I am going to turn off the zoom recording now and then ask the feedback questions and note the responses. Thank you for staying online for a few minutes longer if you can."