POWER WHEELCHAIR GUIDE

Print this guide. Share it with others. Take it with you to a clinic. Take it with you to support a group. USE it. The decision to create this guide was based upon feedback from the ALS community. ALS is an extremely difficult disease to navigate, and we receive an innumerable amount of questions regarding power chairs—what takes place in an evaluation, who to contact, where to go, drive controls, chair features, covered items, and many other things. The desire to effectively serve the ALS community is the driving force behind this guide.

A power wheelchair is not just simply a power chair; it’s a daily living aid. Many people living with ALS get in their power chair in the morning, stay in their chair all day, and sometimes even sleep in it. A power chair doesn’t just offer independent mobility, it offers postural stability as well as ways to interact with your environment. It offers a way to show your personality through vibrant colors. At the end of the day, a power chair is a thing. But it is a thing that can help people living with ALS remain purposeful and productive, helping them perform activities they love, and helping them achieve their dreams. The power chair is a thing, but the individual using the chair are of sacred worth, having dreams and ambitions that will change the world and impact the ALS community in unimaginable ways.

This guide is NOT meant to be a comprehensive tool to showcase every single product and feature that can be useful. The purpose of this guide is to provide a fair, impartial, concise, and useful overview of the general features and benefits to look for in power mobility. All products in this guide are made by reputable companies who have vast experience working with clients who are living with ALS. Team Gleason DOES NOT endorse any specific company or product over another in this guide. There is no universal “best” power chair for every person living with ALS. Rather, selecting a power chair is an individual decision that should be made by the person living with ALS who will be the one using the chair. Rehab engineers, Occupational Therapists (OT), Physical Therapists (PT), and ATPs (Assistive Technology Professional) provide valuable input and are key members of your team. Lean on them for their knowledge, and their recommendations; and remember that they are here to serve your needs and interests and work alongside you. Ultimately though, YOU, the consumer, have the final say.

We suggest that people living with ALS trial multiple chairs, especially in their home environment. It is one thing to drive a chair in a clinical environment that may have wide hallways and doorways. It’s another thing to experience a power chair in one’s natural surroundings. It’s one thing to look at pictures of power chairs on a website or guide and read about their features. It’s another thing to actually drive one and experience one. Medicare will fund one chair every five years for people living with ALS. It is of the utmost importance that you, the primary stakeholder, you the person living with ALS, end up with the right chair that best suits your needs. If your provider or rehab team only shows you one chair, you have every right to ask to see more options and different chairs. Ultimately, the rehab company and provider cannot place the order for a chair until you, the consumer, give the authorization for them to do so. Feel free to ask your provider to show you the products featured in this guide, or other options.

Lastly, there are items that Medicare doesn’t deem to be medically necessary but are beneficial to people living with ALS. Some of these items include power adjustable seat height elevators and attendant control joysticks. Team Gleason has partnerships in place with Invacare, Permobil, and Quantum to help provide a limited amount of these items for people living with ALS who cannot otherwise afford these items at no charge. Details regarding this are on the last page of this guide. Feedback is always welcome from the community, and how we continue to serve the ALS community by being the leading non-profit in providing assistive technology for people living with ALS. A special thanks to our partners who helped make this guide possible.

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DRIVE TYPES

REAR-WHEEL DRIVE (RWD)

Advantages: Rear-wheel drive can feel intuitive to people who are used to driving vehicles, as it moves similarly. Rear-wheel drive bases can require less corrective steering to be able to track in straight lines at high speeds. Because a user’s center of mass is positioned close to the rear wheel, a rear-wheel drive chair can offer a stable riding experience.

Disadvantages: Rear-wheel bases have the largest turning radius of the three different bases. Because the main drive wheel is located in the rear of the base, the chair must clear the majority of a corner before a turn can be initiated. Rear-wheel drive bases are generally not recommended for people living with ALS who spend most of their time indoors for this reason.

Models: Invacare® Storm Series Power Wheelchair, Quantum Rival

MID-WHEEL DRIVE (MWD)

Advantages: Of all bases, mid wheel drive offers the smallest turn radius, making it an ideal solution for use in a home environment with tight spaces and corners. Mid-wheel drive performs the most similar to a walking motion, making it an intuitive driving experience for someone living with ALS who has been walking their whole life. Since there are six wheels on the ground, mid-wheel drive offers a stable driving experience.

Disadvantages: Of the different bases, mid-wheel bases traditionally do not perform quite as well in outdoor settings, especially with uneven terrain. Since the front casters on a MWD rotate, this may eliminate the option of some lower extremity positioning supports.

Models: Invacare® TDX SP2 Power Wheelchair, Permobil M3, M5, Quantum Edge 3, Motion Concepts ROVI® X3 Power Wheelchair

FRONT-WHEEL DRIVE (FWD)

Advantages: Since the drive wheel is located at the front of the base, front-wheel drive bases generally perform better in various outdoor settings and can climb low obstacles. A front-wheel drive chair offers good outdoor driving capability while offering a smaller turning radius than a rear wheel base, making this a potentially good option for a user who splits their time indoors and outdoors.

Disadvantages: Because most of the weight of a user and base is located behind the drive wheel, FWD may not perform as well as other bases at high speeds. For users who have been previously ambulatory, FWD may not provide quite as an intuitive driving experience.

Models: Permobil F3, F5, Quantum 4Front
**Models:** Invacare® Storm Series Power Wheelchairs (RWD), Invacare® TDX SP2 (MWD) Power Wheelchair

**Core technology (available on the TDX SP2 Power Wheelchairs):** Invacare® SureStep® Suspension, Stability Lock, Adaptive Load Compensation

- Wheels work in synergy to maintain balance and provide stability when transitioning over obstacles
- When maneuvering over everyday obstacles or curbs, SureStep® Suspension helps to ensure the seat remains close to level and the power wheelchair maintains virtually constant six wheel contact with the ground.
- Stability Lock uses one-way, gas locking cylinders that engage if the rear casters begin to lift off the ground, preventing the chair from lurching forward.
- Adaptive Load Compensation (ALC): ALC is standard with all TDX SP2 Power Wheelchairs. ALC constantly measures the resistance across each drive motor and automatically adjusts driving performance based on terrain, speed and motor wear. This ensures the drive of the TDX SP2 Power Wheelchair is predictable and consistent across the lifetime of the chair. ALC also reduces required servicing of the drive motors and can increase driving efficiency for joystick and specialty control users alike.

Left: SureStep® Suspension system and Stability Lock in action. Right: REM400 Touch screen remote.

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**Models:** M3 Corpus & M5 Corpus* (MWD), F3 Corpus & F5 Corpus* (FWD)

- Corpus® seating system is designed to promote proper positioning. Unique features like Independent Repositioning Mode (IRM) and memory seating allow preferred seat positions (e.g., tilt, recline, power legs and elevate) to be easily recalled with one simple command or switch.
- ActiveReach™ anterior tilt packages of up to 45° can help facilitate forward reach and transfers. ActiveReach may help increase safety and efficiency with independent or caregiver assisted transfers by helping to shift body weight up and forward.
- Permobil’s unique 12” or 14” seat elevator design features 3 points of contact for added stability and includes up to 10° of ActiveReach at no additional charge.
- Corpus power seat actuators are cleanly integrated under the seat creating more space on the backrest for hanging or mounting respiratory and ventilator equipment.
- Permobil suspension systems are designed to provide advanced vibration dampening while optimizing traction and stability. The FlexLink™ suspension system provides the user the benefit of full suspension in any drive position including fully elevated.
- Note*: M5 Corpus & F5 Corpus, seat elevation, and ActiveReach while not covered by Medicare are available as upgrades and may be reimbursed by other funding sources.

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**Models:** 4Front (FWD), Edge 3 (MWD)

- To create the suspension for their wheelchair bases, Quantum partnered with automotive and motocross companies, resulting in the brand new Smooth Ride Suspension™.
- LED fender lights are standard on both the Edge 3 and 4Front. In addition, a USB charger port is a standard feature on the Edge 3.
- Attendant control comes standard with any Quantum power chair that has at least three power functions (tilt, recline, articulating foot platform, etc). The majority of power chairs used by people living with ALS have three or more power functions.
- iLevel on the Edge 3 allows the client to drive up to 4.5 MPH at 12” of elevation. The power adjustable seat height elevator on the 4Front model offers 3.2 MPH at 10” of elevation. Note: All third-party payors (except traditional Medicare) will consider the request for a complex (customized) rehab power wheelchair with a power adjustable seat height system, such as iLevel, on a case by case basis. If not covered, it is offered at an additional cost.
ALTERNATIVE DRIVE CONTROLS

Power wheelchairs can adapt to the different stages of ALS. Alternative drive controls allow an end user to drive their power chair even if the person can no longer use a traditional joystick. Many different types of drive controls exist, and not all of them are featured on this page due to length. A PT, OT, or ATP with expertise in alternative drive controls will be able to recommend different alternative drive controls that are relevant to your situation. Note: There are several companies who manufacture alternative drive controls. The products featured on this page are manufactured by Adaptive Switch Labs (ASL) and Stealth Products respectively. To find out more info, please visit: www.asl-inc.com and www.stealthproducts.com.

HEAD ARRAY

Head arrays allow a user to drive their power chair with their head. Head arrays have proximity switches embedded in the pads. When a user makes contact with the left pad, for example, this will cause the chair to steer left until the user releases their head from the left pad. Head arrays are highly adjustable and are often used with a switch to toggle between forward/reverse, as well as control different speed profiles, and chair functions. Head arrays can also be paired with a pneumatic device called a sip-and-puff. 

Left to right: ASL Electronic Head Array, ASL Atom Head Array, Stealth Products I-Drive Ultra Pro, Stealth Products I-Drive Tri Array

PROPORTIONAL JOYSTICK

A standard joystick on a power chair requires 240-265 grams of force to operate. The farther a joystick is moved from center, the faster the chair will move. Various joysticks are available that require as little as 10 grams of force to operate. Proportional joysticks that require less force are great for users experiencing muscle weakness, or who only have fine control of a single finger.

Left to right: ASL Molecule, mo-Vis™ Micro, ASL MEC with palmpad, Stealth Products PMPJ, Stealth Products I-Drive chin harness, ASL MEC with different tips on mount

SWITCHES

For users with limited mobility, proximity switches or fiber optic switches may be an alternative drive control solution. 

Left to right: Stealth Products iConnect, Fiber Optic switch, iDrive tray, ASL 208, ASL 202
CUSHIONS

Cushions provide much more than a comfortable surface to sit on. Cushions help prevent pressure injuries (i.e. pressure sores/ulcers), maintain proper posture, and therefore are a key component of a power chair. There are hundreds of different cushions made by various companies. This page is simply meant as a brief overview of some of the types of cushions available. Lean on your support teams such as your therapists and wheelchair provider to help determine the best cushion for your needs. Cushions can be constructed of various material, but the most common are foam, gel, air cells or combinations of these technologies. You may choose to purchase an additional cushion cover in the event of incontinence issues or for general cleaning.

CAUSES OF PRESSURE INJURIES
Friction • Moisture • Pressure • Shear

FOAM

- Low maintenance
- Low weight
- Stable seating surface
- Foam cushion may not be ideal for advanced positioning needs

Foam is perhaps the most common material used in cushions. Foam comes in many different types, thicknesses, and various types of foam can be combined

_Pictured here is the TruComort 2 cushion from Stealth Products._

[www.stealthproducts.com](http://www.stealthproducts.com)

GEL

- Supports advanced positioning needs well
- Can help minimize heat
- Absorbs small vibrations
- Heaviest of three main cushion types
- Gel can sometimes freeze in harsh cold environments

Gel is another common substance that is used in cushions. Gel is usually combined with a foam base to reduce pressure under the ischial area. Gel cushions allow a patient to be immersed, allowing for pressure distribution.

_Pictured here is the M2 Cushion from Comfort Company._

[www.comfortcompany.com](http://www.comfortcompany.com)

AIR

- Excellent pressure distribution
- Adjustable firmness of base
- Low weight
- Requires daily maintenance and monitoring of pressure
- Can develop leaks

Air cushions are exceptional with pressure management, and are commonly used with ALS clients who need advanced pressure relief. Air cushions allow the user to sink into the cushion, and the firmness of the cushion can be adjusted.

_Pictured here is the Quadro High Profile cushion from Roho._

PROVIDERS

A provider supplies the end user with their power wheelchair. Providers, as a part of the team, help the end user trial various products, make recommendations, and process funding. Providers work in conjunction with clinicians at ALS clinics. In addition to the three providers listed below, many independent providers are also available which have experience working with ALS clients. Due to the large number of independent providers in the United States, we are not able to list them all here. Please consult with your clinician care team to learn which providers are available in your area. Team Gleason does not endorse any one provider.

National Seating & Mobility (NSM) is the nation’s most experienced Complex Rehab Technology Solutions provider, partnering with physicians, therapists and clients across the U.S. to build one-of-a-kind mobility solutions designed to be comfortable, safe and work completely in sync with each client’s individual needs. NSM is accredited by The Joint Commission, a preeminent accrediting body for U.S. healthcare organizations, for providing safe and effective care of the highest quality and value. NSM has a national network of more than 130 locations in 43 states. To find a location near you, visit www.nsm-seating.com/branch-locator-map.

Numotion is the nation’s leading provider of Complex Rehab Technology (CRT), improving the lives of people with disabilities by enabling them to actively participate in everyday life. Our expert team of Assistive Technology Professionals has experience providing medically appropriate seating and mobility solutions to hundreds of different diagnosis – including ALS. We understand the unique dynamics associated with ALS and will work directly with you and your care team to find the right solution to prolong your mobility and independence. Numotion has more than 140 locations across the country. To find a location near you, visit www.numotion.com/locations.

Travis Medical has been providing home medical equipment for over 25 years with locations throughout Texas, as well as in Florida and Oklahoma. Our mission is to provide the highest level of expertise and customer service to our clients. Our knowledge and expertise allow us to offer the most beneficial solutions to our customers. We can provide for all the needs of most patients through multiple product categories including complex rehab and mobility equipment and disposable supplies.

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Q: I am living with ALS and have Medicare. How do I go about getting a power wheelchair?

A: To acquire a power wheelchair through Medicare, the following must be completed:  
- A face to face exam by your neurologist or primary care physician. During the face to face examination, your doctor will determine if a power wheelchair is reasonable and necessary for you. If your doctor determines that a power wheelchair is medically necessary, they will write a prescription for one.

- A power wheelchair evaluation: This is usually done by either a physical therapist (PT) or occupational therapist (OT), oftentimes done with assistance from an Assistive Technology Professional (ATP) from the durable medical equipment (DME) supplier who will order and deliver the wheelchair to the end user. A thorough wheelchair evaluation for an ALS patient should include trials of multiple power chairs in the user’s home environment, simulation of proper positioning supports needed to promote a neutral (midline) posture, measurements of the end user’s body, and proper cushion and backrest to maximize pressure distribution for each user. More than one chair should be trialed by the end user. Pulling up a power chair manufacturer’s website and not “test driving” physical product does not constitute an adequate wheelchair evaluation. As the patient, it is your right to request to see a manufacturer’s product in this guide if it has not been presented to you and you would like to trial it.

- The DME supplier will submit the necessary documentation to Medicare for pre-authorization. After pre-authorization is completed, the end user will be notified of the estimated copay amount to approve before the chair can be ordered. Medicare will cover 80% of the cost of DME, and the end user is responsible for 20%. Medicare will not fund a power chair if the end user is in a facility, nursing home, receiving hospice, etc. Keep in mind, that the wheelchair provider CANNOT place the order for the power chair without your authorization.

Make sure that all of your questions are answered about the product and you are content with the options presented to you during the evaluation BEFORE placing the order for the chair. Medicare will pay for one power wheelchair every five years.

Q: Does Team Gleason assist financially with power chair copays?

A: No, Team Gleason does not assist financially with power chair copays.

Q: I was told by my provider that Medicare denied my power adjustable seat height seat elevator and that I must pay out of pocket for this feature. Can Team Gleason help me?

A: Medicare does not pay for power adjustable seat height features as they are deemed by CMS to be “not medically necessary” and used for “convenience”. Team Gleason has partnerships in place with Permobil, Quantum, and Invacare to help issue grants for seat elevators and other features like attendant controls. These companies generously provide these grants and they are distributed by Team Gleason.
Q: Does Team Gleason have grants in place with all of the power chair manufacturers in this guide? How do I apply for seat elevator or attendant control grants for the power chair that I am going to order?

A: Yes, Team Gleason is committed to serving the ALS community and empowering people living with ALS to live independently and productively with whatever power chair best suits an individual’s needs. Grants are available for new chairs that have not yet been ordered. These power chairs must be in quote form. NOTE: If the order for your power chair has already been placed, Team Gleason will be unable to assist with grants. The process for obtaining assistance with additional power chair features is as follows:

1. Download the Team Gleason application for assistance at www.teamgleason.org/tgapp.

2. Fill out the application and attach a copy of a letter of ALS diagnosis from your neurologist or primary care physician and send both items to tech@teamgleason.org. On the second page of the application, in the box, “Please describe what you need assistance with...” provide the email address for the funding specialist at your local DME company branch, the branch’s phone number, and the Permobil, Quantum, or Invacare quote number (whichever is applicable to the chair you are going to order), and a brief explanation of which feature (seat elevator, etc) on your chair was denied by Medicare/insurance.

3. A Team Gleason team member will respond within 2-3 business days and will instruct you on next steps. Generally speaking, this involves a separate one page application being sent to you to simply verify correction information, which you will then sign and date.

Q: How many grants are available?

A: Team Gleason has a limited number of grants from each manufacturer. As such, we humbly request that only families living with ALS who DO NOT have the financial means to afford these features on their power chairs request assistance through Team Gleason.

Q: Where can I go to learn about other services Team Gleason offers?

A: Please visit our FAQ section at www.teamgleason.org/technologyfaq

Q: Where can I learn more about the products and providers in this guide?

A: For more information on the respective manufacturers and providers in this guide, please visit:

www.asl-inc.com  www.numotion.com
www.comfortcompany.com  www.permobilus.com
www.invacare.com  www.quantumrehab.com
www.motionconcepts.com  www.stealthproducts.com
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