

Article #10: Wheelchairs, Seating, Positioning

Excerpted from: Christopher and Dana Reeve Foundation

http://www.christopherreeve.org/site/c.mtKZKqMWKwG/b.4453477/k.3D3E/Wheelchairs_Seating_Positioning.htm

The common saying is wrong: people are not "confined" to their wheelchairs – they are in fact liberated by their wheels. A person with paralysis can get around as quickly in a wheelchair as anyone else can walking. A wheelchair offers people access to work or shopping or any other travel outside the home. For some, a wheelchair enables them to participate in races, basketball, tennis and other sports.

In some ways a wheelchair is like a bicycle – there are many designs and styles to choose from, including imports, racing models, etc. The chair is also like a pair of shoes – there are models for special purposes, such as sports or rugged trail use, but if the fit isn't just right the user can't get comfortable or achieve maximum function.

Selecting the right chair, especially for a first-time wheelchair user, can be confusing. It's always a good idea to work with an occupational therapist who has experience with various kinds of wheelchairs, but here are some mobility basics on wheelchairs.

Manual chairs

People with upper body strength typically use a manual – they propel it with their arms on the rims of the wheels. A generation ago the standard chair was a chrome-plated behemoth that weighed about 50 lbs. Today's standard comes in every color you can think of and is much less than half that weight., and designed for much superior performance. The newer chairs ride truer and are much easier to push than the clunkers of yesteryear. The lightweights, whether with either a rigid frame or a folding frame, are also easier to transfer in and out of cars.

Power

Many people cannot push a wheelchair with their own arm strength and may require a wheelchair powered by batteries. Power chairs come in several basic styles. The traditional style looks like a beefed up standard manual plus the batteries, motor and control systems. There are also platform-model power chairs with a more ordinary seat fixed atop a powered base. Scooters come in three- and four-wheel configurations and are typically used by people who don't require them full time.

Until just a few years ago, the power chair market was limited to just a few brands and models. Innovation has expanded the choices, though, with lighter, more powerful, and much faster chairs. Because power chairs are often quite expensive, reimbursement is a key issue. Work with your funding sources, OT, seating



Folding Wheelchair - Colours Challenger



Folding Wheelchair - Invacare ProSPIN X4



Power Wheelchair - Permobil C350 PS

specialists and rehab supplier to get the best set up.

Child/Junior Chairs

Because their bodies are growing and changing, chairs for children and adolescents must be changed or replaced more often than an adult chair. Since chairs are not cheap and insurance providers often place limitations replacement, manufacturers offer chairs that allow adjustments to be made to accommodate a growing child. Wheelchair companies also offer chairs for kids that don't look as "medical" as the old styles. This includes more streamlined designs and cooler upholstery and/or frame colors.

People with paralysis have a high risk for pressure sores and therefore usually require special cushions and seating systems to give the skin some relief. There are three basic kinds of cushion materials, each with benefits for certain types of users: air, foam or liquid (e.g., gel). Work with your seating specialist to determine which is the right one.

Tilt or Recline

Some people use special wheelchairs to distribute pressure and thus reduce the risk of skin sores. These chairs also increase comfort and sitting tolerance. One type of chair, called "tilt in space," changes a person's orientation while maintaining fixed hip, knee, and ankle angles. The whole seat, in effect, tilts. The other chair option is called a recline system, which basically changes the seat-to-back angle, flattening out the back of the chair and in some cases raising the legs to form a flat surface.

A tilt system redistributes pressure from the buttocks and posterior thighs to the posterior trunk and head. The system maintains posture and prevents shear (the friction on tissues from dragging across a surface). A drawback: If a user sits at a workstation, for example, the tilt requires that he or she must move back from the table to avoid hitting the table with the elevated footrests.

Recline systems open the seat-to-back angle and, in combination with elevating legrests, open the knee angle. There are some advantages to recline for eating, making transfers or assisting with bowel or bladder programs (easier lying down). Generally speaking, recline offers more pressure relief than tilt, but with a higher risk of shear. Elevating the legs may be beneficial to people with edema.

Both tilt and recline must be fitted and prescribed by seating and positioning experts.



**Pediatric Wheelchair -
Colours Little Dipper**



**Tilt Wheelchair -
Invacare Pronto M51-CG Tilt**



**Tilt Wheelchair -
Quickie TS**

Seating

People with paralysis have a high risk for pressure sores and therefore usually require special cushions and seating systems to give the skin some relief. There are three basic kinds of cushion materials, each with benefits for certain types of users: air, foam or liquid (e.g., gel). Work with your seating specialist to determine which is the right one.



**Cushion - Gel
Jay-J2-Recline**

How to choose

It is important to determine how the wheelchair will be used: indoors only? Outdoors or heavy-duty use? Does it take apart easily for traveling? Choosing your chair often comes down to what will be reimbursed and depends on your eligibility.

Sources: [American Occupational Therapy Association](#), [WheelchairNet](#), [AbleData](#)



**Standing Wheelchair -
Levo C3**