

ACCESSORIES FOR MANUAL WHEELCHAIRS

When considering accessories for wheelchairs one must always remember that these will add overall weight to the wheelchair and should only be prescribed if necessary. This concept should always be discussed with clients to assist them in making decisions about what accessories are necessary to them.

There are many different accessories available with wheelchairs and the specifications are best discussed with the individual supplier. Most accessories fall into the following categories:

- ◆ Improved handling and function
- ◆ Improved safety features
- ◆ Posture and positioning
- ◆ Ease of transport and access
- ◆ Equipment maintenance

IMPROVED HANDLING AND FUNCTION

ARMRESTS

Some clients may require armrests but it is important to remember that they should always be removable and not fixed to the wheelchair. Some considerations are:

- ◆ Assists client with transfers (especially standing transfers)
- ◆ If used by client to assist with pressure relief, may damage mounting
- ◆ Provides support for upper limbs and trunk
- ◆ Provides security and comfort for the client
- ◆ Protects clothing from rubbing on wheels
- ◆ Makes self propulsion more difficult



Armrests come in a variety of designs eg full-arm length, desk style and some models are adjustable in height. Some lift off and some flip back. If they are not height adjustable a prescriber needs to consider and specify the optimal height for the client in the prescription. Some manufacturers allow flexibility in the height that they supply.



Adjustable height

SUSPENSION – REAR / FRONT

The overall aim of suspension is to absorb some of the forces present during wheelchair propulsion and so may result in clients experiencing decreased pain and improved comfort of ride, decreased spasticity and involuntary muscle spasms and an increased rolling ability over some obstacles.

Rear suspension is available on some models of wheelchairs either in the form of a central rock-shox mechanism similar to suspension on mountain bicycles or with polymer shock absorbing bushes built within the frame. The central mechanism is adjustable but has limits with respect to client weight. Rear suspension affects the use and efficiency of wheel locks which may impact on client safety.



Front caster suspension is currently available through a product known as 'frog legs' (www.froglegsinc.com) which incorporates caster forks with a polymer shock absorber designed to reduce vibration in the wheelchair frame. According to the manufacturer they can be attached to most existing wheelchair models with 4", 5" and 6" casters. These provide a more cushioned ride, less jarring and may decrease stimulation of spasticity while propelling.



This concept is relatively recent and the technology and availability of these products is expanding at a significant rate. As this is a more recent development, products are relatively expensive at this stage.

QUICK RELEASE HUBS

This push button mechanism allows the easy removal of the rear wheels for transportation or storage purposes. They are standard on all rigid frame and some folding frame wheelchairs but may be an additional option on others. Some models offer a large central button which some clients find easier to manage if they have poor hand function.



[Video Link: Folding rigid chair – client](#) (AVI file – 9.3MB)

[Video Link: Rigid chair into car](#) (AVI file – 8.5MB)

QUAD RELEASE AXLES

For clients with limited hand function these mechanisms allow easy use of the quick release hubs by not having to hold the button in whilst removing the wheel. They are mostly in the form of levers attached to the quick release button.



PLASTIC COATED PUSH RIMS

These provide more traction when propelling if clients have a weak grip and can be used by clients with or without gloves. They may burn hands if the client is slowing down from a considerable speed. They are therefore not recommended for clients with normal upper limb and hand function.



CAPSTANS / PROJECTIONS

These are rubber coated projections off the push rim to assist a client with limited upper limb function to propel and especially turn corners. They are often difficult to co-ordinate both sides together and tend to get in the way when propelling down hills. Due to some of the disadvantages, they are rarely used nowadays and have been replaced by plastic coated rims.

Capstans can be set vertically, obliquely or horizontally: the latter two options impact on chair width.

EXTENDED BRAKE LEVERS / WHEEL LOCK HANDLES

To decrease the force required to engage/disengage the wheel locks an option is to lengthen the lever by increasing the length of the wheel lock handle. It also minimises the forward reach required to access the wheel locks. Having removable extended handles is an important consideration if the client transfers.

[Video Link: Use of extended brake levers](#) (AVI file – 2MB)



GRADE AIDS

Grade aids are devices that are attached to the wheel locks to prevent the wheelchair from slipping backwards when propelling uphill. Due to their configuration they actually make it more difficult to propel forwards. They are available only on some models of wheelchairs.

PUSH HANDLES

Clients with poor sitting balance often use push handles to lock their arm behind when reaching out of their sitting base. They are also used by attendants pushing the wheelchair and for assistance on stairs and kerbs. Removable push handles are an option on rigid framed chairs and these are important to consider if the client collapses their own wheelchair into the car. Removable handles may not be strong enough to be used by attendants to pull someone up and down stairs in their wheelchair.



REAR TIP BAR

This tip bar is located at the rear of the wheelchair frame and assists an attendant tipping the wheelchair onto its rear wheels when negotiating kerbs, ledges or gutters. Often only one side is required. This is not an anti tip safety device.

IMPROVED SAFETY

ANTI-TIP DEVICES

These are designed to minimise the risk of the wheelchair tipping fully backwards when a client loses their balance. When in place they will also prevent the client negotiating kerbs and gutters. When an attendant is assisting, they often need to be removed as they may catch their legs on them and cause themselves an injury.



They are **not** designed for a client to rest on in the tipped back position and this should always be discouraged.

CASTER LOCKS

These are an option to lock the front casters in place. They may be useful in providing stability of the front wheels during transfers. The client is required to be able to handle the mechanism as well as reaching down to the front casters.

SPOKE GUARDS

Spoke guards are mostly used to prevent fingers being caught between the wheel spokes and to protect the spokes in rough outdoor situations and during sports. Some clients also like the cosmetic features and they are available in various colours and styles.



IMPROVED POSITIONING / POSTURE

CALF STRAPS

Calf straps attach to the footplate hanger on each side and prevent the feet falling backwards or hitting the casters. They are usually adjustable in length to suit the individual. They can be used on both rigid and folding wheelchairs.

HEEL / TOE LOOPS

Heel loops achieve the same aim as the calf straps but are mostly used on swing away removable footplates. Care needs to be taken that they don't cause skin problems from pressure on the heels especially if a client has severe spasticity.

Toe loops are available on some models but are rarely used in practice. If they are useful for the individual client then potential pressure areas needs to be considered.



POSITIONING BELTS

These may be required for clients who have poor balance skills in the wheelchair or severe spasticity that pulls them forward in the wheelchair. Positioning of seat belts vary from the pelvis to up high at the chest level depending on individual needs.

CLOTHING / SIDE GUARDS

These are often available in cloth or plastic. They are designed to protect clothing from being soiled by the wheels and may assist with the positioning of the cushion. Ideally they should be removable to ensure safety for transfers. Monitoring is important to ensure they do not provide potential pressure points especially in the greater trochanter area.

Can cause issues with transfers if are higher than wheel and are not removable.



SOLID SEAT BASES

Solid seat bases may be an option to consider if the client requires significant postural support or the client is very heavy and the seat upholstery sags to a great extent. It is important to remember that this will add significant weight to the wheelchair and will also impact on the chair's collapsibility, although many are removable. A solid seat base can be made from wood, plastic or aluminium.

Some products offer an adjustable height solid seat base to alter the seat height from the floor.

ADJUSTABLE TENSION UPHOLSTERY

As wheelchair back upholstery sags and stretches over time, some models offer an adjustable tension upholstery using velcro straps. Each strap can be individually tightened which may also be adjusted to facilitate a lumbar curve.

TILT-IN-SPACE

With some clients it may be beneficial to incorporate a tilt-in-space option that may assist with pressure relief, fatigue and bladder drainage. This adjustable option is available on some models for clients with high dependency but are mainly only attendant controlled mechanisms and add significant weight to the chair.

EASE OF TRANSPORT

QUICK RELEASE REAR WHEELS

These are standard on all rigid frame wheelchairs and are an option on many folding frame wheelchairs as well. The mechanism allows easy removal of the rear wheels to assist with transport and storage.

QUICK RELEASE CASTER STEMS

Quick release caster stems are an additional option to allow the easy removal of the front casters. They provide extra ability for transport and storage especially into a small vehicle or where there is a large family travelling.

They may also be used for easy interchange of two types of casters. With this scenario, it is important to remember that two different sizes and types of caster will alter the ride and position of the wheelchair frame in relation to the ground and to the client.

TRAVEL WHEELS

Some models offer the option of travel wheels. These are small wheels that are mounted to the wheelchair behind the frame and close to the ground. Once the rear wheels are removed the wheelchair may be pushed through narrow doorways or down the aisles of trains or aeroplanes. They should be removable as they are not always used.

EQUIPMENT MAINTENANCE

FRAME PROTECTORS

These are designed to protect the wheelchair frame from damage and are supplied in various materials eg plastic, cloth or neoprene depending on the wheelchair model. They can be either fixed in place or removable.

TOOL KIT

As it is recommended to adjust the wheelchair to suit the individual and their needs at any time, having the appropriate types and sizes of tools is useful. Wheelchair parts may be metric or imperial in size depending on the manufacturer.

The tools should also be used to maintain the wheelchair and parts in good working condition.

TOUCH UP PAINT

This is a small can of wheelchair frame paint to maintain the paintwork in a good condition and thus may assist in minimising rust.