A Guide to Selecting Manual Wheelchairs

There are many types of manual wheelchairs. They come in different sizes with standard features or can be customised to suit individual needs.

In order to select the right wheelchair there are many factors that need to be considered. These include:

- The user’s needs, abilities and limitations
- The carer’s needs, abilities and limitations
- Environmental factors
- Transport factors
- Financial factors

Assessment of these areas will determine the type of wheelchair required, its size and accessories that are appropriate.

Types of Manual Wheelchairs

Rear Wheel Drive Wheelchairs:
Have large wheels on the back and swivelling castors at the front. These large rear wheels are generally removable via a quick-release axle to assist with transport or storage. Push rims are usually metal, however rubber coated push rims can assist with gripping.

Transit wheelchairs:
Have small rear wheels, usually a diameter of 30 centimetres (12 inches), and are generally used when someone cannot push themselves, or where the person in the wheelchair is likely to injure themselves or their carer by grabbing the wheel. A wheelchair with small rear wheels is generally easier to get into a car. However it can be harder for the carer to push up curbs or over grass.

One Arm Drive Wheelchairs:
Allow a user to propel themselves using one hand by either:
- A push/pull lever action.
- Two push rims located on the same side of the chair with the inner rim attached to the opposite wheel.

Amputee set up:
Accommodates for the change in the centre of gravity of a person with an amputation. Other accessories, such as a stump support, may also be available.

Reclining Back:
Increases the angle between the hip and back to allow the person to ‘lie back’ in their wheelchair.

Tilt-in-Space:
Changes the orientation of the person, without changing their hip to back angle.
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The Independent Living Centre provides a free and impartial information and advisory service to help you choose the right product for you

Standard Wheelchair Features

Manual wheelchairs have standard features that include:

**Frame:**
May be fixed / rigid which is strong and efficient for the self propeller, or folding which may be easier to transport.

**Upholstery:**
This can be slung upholstery made of a material such as nylon. Other chairs can be fully upholstered like a car seat or offer an upholstered backrest with a solid seat on which a specialised cushion can be placed.

**Armrests:**
There are two types: Full length armrests or desk-style (which enables the user to get closer to a table). They may be removable or flip up and may be height adjustable.

**Footrests:**
These may be swing-away and removable, or fixed. They may be height adjustable. Footplates can be single or two piece. Some legrests can be elevated.

Brakes:
It is important that the brakes on a wheelchair are easily activated. Different styles are available to suit people with different abilities (for example brakes that push on, brakes that pull on, ones that are mounted down low on the wheelchair, or that swing out of the way under the seat). Extension levers are also available to make it easier for someone who has reduced strength or reduced reach to apply the brakes.

Rear Tyres:
Are available in a variety of materials including pneumatic, puncture-proof and solid.

Pneumatic tyres are air-filled which provides a cushioned ride, but are more prone to punctures and need to have their air pressure checked regularly.

Puncture-proof tyres are similar to pneumatic tyres in providing a cushioned ride but instead of air they are filled with foam, plastic or a rubber insert; this increases the weight of the tyre.

Solid tyres require minimal maintenance and are easier to propel over a smooth surface but do not provide much shock absorption over an uneven surface, creating a rougher ride for the user.
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High-pressure sports tyres have very little tread and have less rolling resistance for efficient self-propulsion.

**Front Castors:**
Are available in many different sizes. Larger castors make it easier to go over bumps and uneven terrain but do require more effort to change direction. Smaller castors make it easier to change direction but are more suited to smoother terrain or to users that can easily lift the front of their wheelchair from the ground whilst self-propelling.

**Backrests:**
Are designed to support the trunk of the user and can vary in height depending on the functional ability of the wheelchair user. Users with poor sitting balance may require a higher backrest than users with good upper body strength. It is important that the height of the backrest on a self-propelling wheelchair does not affect the ability of the user to propel the rear wheels.

Backrests can vary in style (fixed, removable, folding or height-adjustable) and material (slung, tension-adjustable or solid). Most wheelchairs are supplied with a slung material backrest, however there is a large range of other options available.

**Postural Support:**
For people who find it difficult to sit upright, postural support can be helpful. They can include support for the trunk and hips that can form part of the backrest or seat cushion shape or can be components that are added on separately.

**Headrests:**
Can be mounted to a backrest if head and neck support is required by the wheelchair user.

**Camber:**
Refers to the angle of the rear wheel. Increasing wheel camber involves setting the rear wheel so that the top is angled in towards the wheelchair user and the bottom of the wheel is angled away from the chair.

This increases the base width of the chair which will make it more laterally stable and easier to manoeuvre but which may also decrease access (it may be harder to get through doorways).

**Cushions:**
Many wheelchairs come with a basic cushion, if any. If you are spending any length of time in a wheelchair, have a history of pressure issues or are at risk of developing pressure injuries, it may be worth considering a better quality cushion.

Cushions for pressure relief can be made from many different materials depending on need. It is best to consider the cushion that will be used at the time the wheelchair is purchased, as it will have an impact on the size of the chair and how it is set up.
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It is advisable to seek advice from your Occupational Therapist who can assist with choosing the right wheelchair for you.

Other Considerations

Environment:
It is important to consider the type of environment in which the wheelchair will be used; including how easy it is to access and manoeuvre the chair within commonly-accessed areas such as the person’s home, their workplace and local shopping areas.

Floor coverings such as high pile carpet may affect a person’s ability to self-propel.

Outdoor terrain such as steep inclines, uneven ground, sand and distances travelled need to be considered when selecting a chair and if required, it may be worth considering whether a powered mobility device is a more suitable option.

Transfers:
Certain features can make it easier to get in and out of the wheelchair. If standing up when transferring out of a wheelchair, having footplates that can be flipped up and removed or swung away can make it easier.

If a person slides across from the side to transfer, it might be easier to have arm rests that can be removed or flipped back. Brakes should always be applied when transferring on or off a wheelchair.

Maintenance and support:
Consider availability of local support for servicing, maintenance and repair.

Advice:
With such a large range of wheelchairs and so many different options available, it is a good idea to trial products and get some professional advice. One way you can do this is by visiting the Independent Living Centre.

Measuring for a Wheelchair
Getting the right size wheelchair is critical to the user’s comfort and posture.

Measurements that need to be taken for the user’s and carer’s comfort are:
• Seat width, depth and height.
• Armrest height.
• Backrest height.
• Footplate to seat measurement.
• Push handles height.

As the purchase of a wheelchair has such positive benefits for people with limited mobility, it is important that careful consideration be given prior to purchase.

The Independent Living Centre can:
• Provide information on the range of wheelchairs and wheelchair features available, in relation to the needs of the individual, carers and environmental considerations.
• Provide an opportunity to trial a variety of chairs from a range of suppliers.
• Provide short term hire of manual wheelchairs.

Further information:

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