

Wheelchairs & Mobility Aids

A WHISTLE STOP TOUR.....!

27th & 28th September 2024

**VIRTUAL ANNUAL
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What will we cover?

- The wheelchair assessment
 - Key principles
- What is included and how to prepare
- Categories of wheelchair user
- Components of wheelchair design
 - How do these affect function?
- Powered wheelchair categories & criteria
- Features of different walking aids

Your question
opportunity at
the end of the
presentation

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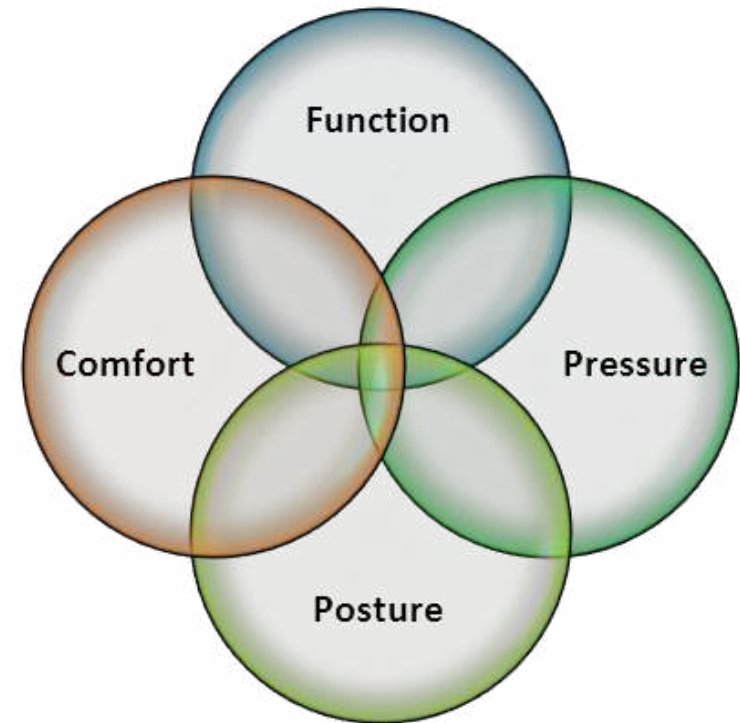
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The Assessment

Key Principles of Mobility Assessments

- Goals
- Benefits
- Trade offs



The Parts of Assessment

- ▶ **Information Gathering**
- ▶ **Body Measurements**
- ▶ **The Mat Assessment**
 - ▶ In the wheelchair (if you have one)
 - ▶ Sitting on a plinth
 - ▶ Lying down



Categories of Wheelchair User

WHO

- Who is WHO?
- Independent International body with client segmentation based on function, not on product
- No black/white scenarios

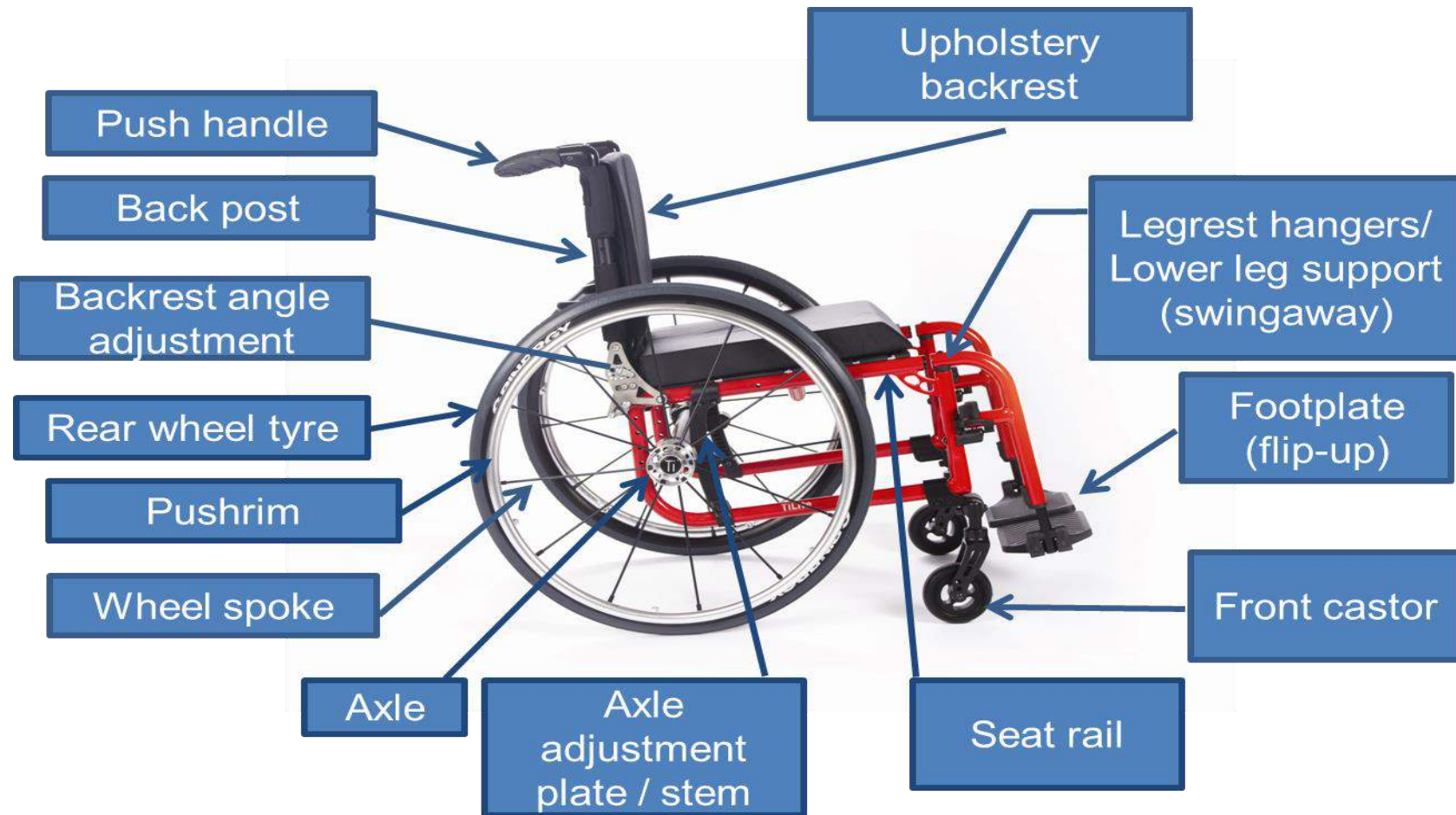
WHO International Classification of Functioning, Disability & Health (ICF)

- Describes how people live with their health condition
- ICF is a classification of health and health related domains that describe body functions and structures, activities and participation.
- The domains are classified from body, individual and societal perspectives
- Since an individual's functioning and disability occurs in a context, ICF also includes a list of environmental factors

Categories:

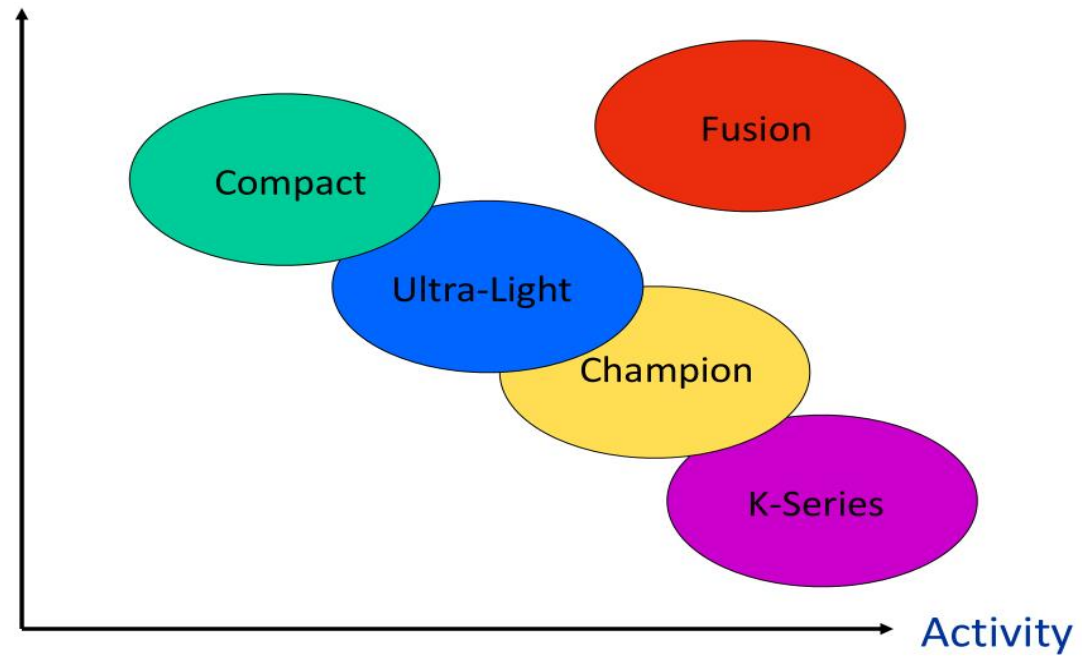
- ▶ Very active client
- ▶ Active client
- ▶ Medium active client (1)
- ▶ Medium active client (2)
- ▶ Passive client
- ▶ Very passive client

Components of a manual wheelchair



User groups / model range

Need of support



Accessories and Options



Footplate options (I)

Two-piece footplate

- For good ground contact when transferring
- Easy to flip to the side
- Set to the front or the back, fixed or angle adjustable



One-piece footplate

- Increases driving performance
- Can be fixed, flip-up or angle adjustable



High-mounted footplate

- Necessary to cater for short leg lengths



Powered wheelchair categories





Walking aids







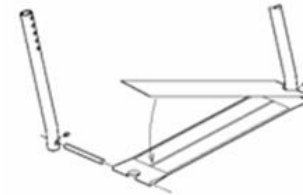
Questions!

OVER TO YOU.....

Footplate options (II)

Foot strap

- Textile band to replace a footplate
- Increases comfort when bear-foot
- Available on the Ultra-Light



Heel loops

- Best suited to wheelchairs with swing-away leg-rests
- The leg-rest can be swung sideways without having to dis-assemble a leg-strap



Foot loops

- Useful to avoid the client's feet from sliding forward and off the footplate



Castors (I)

Castor size

- 5 castor sizes available in the küschall® range
- Criteria for choice :
 - Level of activity of the client
 - Degree of comfort expected
 - Quality of environment in which the wheelchair will be used
- Small castors present good driving performances, but can block on uneven ground
- Large castors ensure good comfort and safety, but create more rolling resistance

Castors (II)

Castors types

- A variety of hardness and shapes can be chosen from
- The harder the castors, the more manoeuvrable the wheelchair
 - Soft castors reduce potential discomfort, but also performance

Supersport 3"

- Very little ground contact and small turning circle of the wheelchair
- The hard rubber ensures manoeuvrability, but increases the danger of blocage



Castors (III)

Skater wheel 4"

- Still retaining high performance thanks to very little ground contact, but a little bigger and therefore better suitable for the outdoor use



Light or sports wheel

- Available in 4, 5, 6 or 7"
- Light, hard wheels with a simple design



Softroll wheel 5"

- Soft rubber for increased comfort
- Wide tire width improves stability
- Reduced driving performance due to extensive ground contact



Castors (IV)

Starec castors 4" or 5"

- Attractive 5 branch design, available in 6 colours
- Hard rubber supplies good driving performance
- 4" version for increase performance, or 5" version for more security



Air tyre castors 6" or 7"

- Highest level of comfort
- Reduced driving performance if not systematically and regularly pumped-up
- For frequent outdoor rides and uneven grounds, the 7" castor is often chosen for maximum comfort and security



Frames (I)

Foldable versus rigid frames

- Foldability reduces bulkiness
- Rigidity improves driving performance and manoeuvrability



Front frame angle

- 2 front angles available on most küschall wheelchairs
- Standard active frame angle (75°) provides comfortable leg position and is recommended when the client cannot sit with his knees in a 90° angle
- Closed dynamic frame angle (90°) enables to shorten the wheelchairs length, improve the client's seating position and improve the wheelchair's driving performance



Brakes (I)

- Assembled on 90% of wheelchairs
- Avoided when extreme lightness is desired and when user is highly active
- Used solely as blocking brake, not during a ride

Pull brake

- Recommended in connection with swing-away leg-rests
- Will not be released by the leg-rest when the latter is swung away



Brakes (II)

Push brake

- Easy handling; available with a straight or bent lever
- Bent lever avoids trapping clothes during transfers

Active brake

- Best handled by active users
- Advantage : Completely disappears under the seat when inactive



Performance brake

- Swing-away brake which avoids fingers getting trapped whilst driving



Brakes (III)

Stoplock brake

- Brake positioned in the rear wheel hub
- Avoids front hand brake and is easier to operate



Attendant brakes (drum brakes)

- Brake operated from the push handles by the attendant
- Give the carer the possibility to control the wheelchair during the ride and in parking situation



Siderests (I)

The higher the trunk stability and shoulder function,
the lighter the side-rests

Clothes-guards

- Lightest solution; avoids clothes catching dirt from the rear wheels
- Allows to support hip position
- Should be carefully passed over during transfers (risks of injury)



Siderests (II)

Mud-guards

- Extended cloth-guard which covers rear wheels
- Provide higher level of cloth protection and reduced risk of injury during transfers



Armrests

- Arm and shoulder function support
- Reduces mobility range of the trunk and should only be used if required
- Several versions available : Light and advanced support, adjustable or fixed, always retrievable



Rear wheels (I)

Size

- Determined according to seat height requirement and body proportions
- For a client with average proportion, 24" wheels provide best propulsion conditions

Types of spokes

- Radial spokes : rigidity in driving performance and design
- Crossed spokes : partial shock absorbance and strength



Rear wheels (III)

Tyres

- Pneumatic tyres : Ensure best driving performance and good level of shock absorption. Must be pumped up regularly for maximum efficiency
- Hard tyres (airless) : For heavily solicited or indoor wheelchair use. Do not break easily but reduce driving performance. Available in flat, hexagonal or profile version.



Rear wheels (IV)

Handrims

- **Standard handrim**
light, anodised aluminium –
Adequate when hand and
finger functions are
complete (low grip)
- **Supergrip handrim** Coated
with a rubber layer for
maximum grip

