KB35

# The Clinical Benefits of a powered seat riser

## What is a seat riser?

"A seat elevator will raise and lower the user in their seated position through the use of an electro-mechanical lift system, without changing the seated angles or the seat's angle relative to the ground, in order to provide varying amounts of added vertical access. A seat elevator may elevate vertically from a standard seat height, or may lower the user closer to the floor".
(RESNA 2009)

## Why is a seat riser most commonly prescribed?

- Independent/fewer assisted transfers to and from the wheelchair
- Reach
- Independent safe meal preparation
- Independent home Activities of Daily Living (ADL's)
- Independent Community ADL's
- Meet vocational requirement/needs
- Social interaction benefit
- Head and neck pain

## Transfers

Transfers are an essential part of everyday life. For a powerchair user, having a seat riser function on their chair could have a number of benefits when transferring. For instance, being able to adjust the height of the wheelchair above the surface upon which they wish to transfer onto (so they are technically transferring downhill) uses gravity to the advantage of the individual. This not only reduces the amount of energy and physical upper body strength required, it can also put far less pain and strain on hips, knees and ankles if the individual normally does a pivot transfer, helping to keep the individual independent for longer.

## Reach

Studies have shown a connection between overhead activities such as reaching with the development of shoulder pain. The degree of upper arm elevation is one of the most important parameters influencing load on the shoulder muscles. In an elevated position, load on the shoulder is reduced, which is especially important for those with weakened upper extremities or reduced range of motion.

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## Independent safe meal preparation

A seat riser enables users to reach their counter tops, ovens, hobs etc. allowing safe and independent meal preparation.

## Independence with Home ADL's

The seat function may enable an individual to complete ADL activities within the home which they previously could not do due to access issues. For instance, accessing cupboards, completing housekeeping activities etc. A riser function may also enable an individual to dress independently or attend to their own hygiene needs, as they are able to reach into drawers or wardrobes, or even access the bathroom sink or bathroom cabinet for example.

## Independent Community ADL's

A seat riser function may facilitate an individual when it comes to grocery shopping, enabling them to reach shelves or items above their heads within shops, as well as making the access to the till in order to pay far easier.

## Meet vocational requirements/needs

Provision of a seat riser may promote access to the work or school environment, perhaps enabling someone to return to partial or full-time employment following an injury. It may encourage or permit involvement in school activities increasing learning opportunities and experiences.

## Social interaction benefits

The ability to participate in a conversation with someone at eye level can have huge psychological benefits and encourage people to engage more in social interactions, such as have a coffee or drink with a friend at a bar, buying cinema tickets and so on. Not having to constantly look up to be able to converse with another person but to be able to raise the chair in order to do this, not only helps with social interaction, it can also help reduce strain on the neck as the individual no longer has to cervically extend their neck and head in order to communicate with others at standing level.

## Invacare's Ultra Low Maxx anterior assist and seat lift

The seat lift function on the Ultra Low Maxx (ULM) has been designed to help users engage in all areas of daily life by offering 300 mm of additional seat height.

In addition, the ULM also offers anterior assist, designed to help users interact more effectively within their surroundings, by improving access and reach through lowering their knees in relation to their hips. Available in 5 or 10 degree options, this feature could also help with independent transfers in/out of the powerchair.

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## The seating assessment

To select the appropriate seating system, information is needed from the referral where the needs of the user and their environment have been identified:

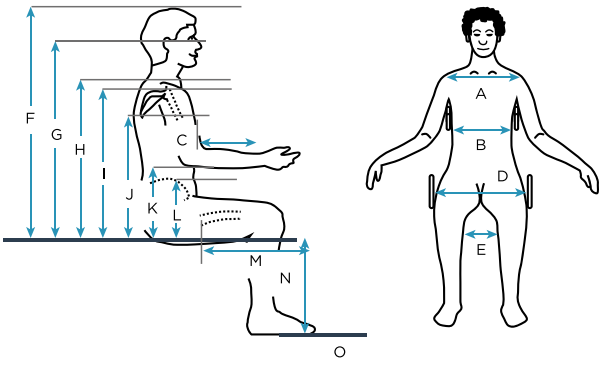
- Identify the context and related concerns:
  - Environment; accessibility; environmental support; transportation
  - Physical context and medical background
- Identify previous seating system, if applicable
- Identify and prioritise goals of the user and the environment

Due to the information that is gathered in the referral, the clinician knows what to look for during the assessment and will gather all the necessary information concerning:

- Physical skills
  - Orthopaedic factors: range of motion, skeletal deformities, skeletal alignment
  - Neuromotor factors: muscle tone, reflex patterns, postural control, voluntary movements
  - Respiratory and circulatory factors
- Sensory skills: vision, perception, tactile sensation, sensorimotor skills
- Cognitive skills: safety, motivation
- Functional skills: transfers; self-care; moving; communication; bowel/bladder function

With all this information, the clinician can now match the appropriate seating system to the user, looking at:

- Technology for postural control (activity – rest)
- Technology for pressure management
- Technology for comfort




| | Measurements in sitting | Left | Right | |
|---|---|---|---|---|
| | **A:** Shoulder width | | | **H:** Seat to top of shoulder |
| | **B:** Chest width | | | **I:** Acromium process (tip of shoulder) |
| | **C:** Chest depth (Front-Back) | | | **J:** Inferior angle of scapula |
| | **D:** Hip width | | | **K:** Seat to elbow |
| | **E:** Between knees | | | **L:** Seat to iliac crest |
| | **F:** Top of head | | | **M:** Upper leg length |
| | **G:** Occiput | | | **N:** Lower leg length |
| | ++Overall width (asymmetrical width for windswept legs or scoliotic posture) | | | **O:** Foot length |

For more seating information in relation to powerchairs, take a look at our, Clinical Guide to Powerchair Provision' document available at www.invacare.eu.com.

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