



**Spinal Seating Professional Development Project  
Reference Document RD8.1: Handy Tips For Seating And Wheelchair Adjustments**

**Handy Tips For Seating And Wheelchair Adjustments**

**Handy tips for seat depth adjustment**

Adjust seat depth by:

- using a rigid backrest featured with depth adjustment
- changing backrest padding thickness or lumbar pad
- adjusting the back post along the seat rails ( a feature in most PWC and some MWC models)
- extending or retracting the seat rails featured with telescopic frame or legrest hangers / lower leg support mounting assemblies to allow changes in seat depth from the front of the PWC
- be aware of the " domino " effects:
  - a new seat cushion may be required
  - PWC: assess the position of driving control
  - MWC: check stability and propulsion efficiency
  - assess for potential environmental and access issues

**Handy tips for seat width adjustment**

The seat width adjustment feature is available in many PWCs and some MWCs. A new seat board, cushion and backrest may be required.

If the seat is too wide and the frame cannot be adjusted, the following tips may be considered:

- Provide adjustable lateral thigh supports which may assist with thigh position
- Provide lateral pelvic supports on cushion or backrest system to centre the pelvis
- When the seat is too wide, the client is more at risk of shoulder pain during MWC propulsion. To allow better reach pattern to the rear wheels, minimise rear wheel spacing and consider removing the armrests, if not required.
- a new prescription may be required

If the seat is too narrow for the client:

- the rear wheel spacing in MWC can be widened to increase the distance between the rear wheels
- loosen the fabric guard in MWC to accommodate tissue bulk at the hips
- consider reducing the rear wheel camber of MWC to allow more space between the top of rear wheels
- a new MWC prescription may be required, particularly when the wheelchair frame is causing skin breakdown, e.g., the back posts were digging into the trunk because the frame width is narrower than the trunk width.

Seek advice from suppliers or Spinal Seating Services



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## **Handy tips for assessing and adjusting seat to foot support distance**

- ensure the pelvis is against the back support. Use tilt to assist, if available, to reposition client rearward.
- palpate for posterior superior iliac spine (PSIS) to check the client's position.
- adjust foot support height to allow the footplates to support the feet without lifting the thighs upward / losing contact on the cushion.
- further adjustment between the left and right side of the foot support may be required to accommodate ankle contractures.
- recheck thigh contact on cushion and ankle / foot placement after footplate adjustment.
- adjust seat to foot support height for each cushion trial, due to the varying profile / height of the cushions.

For clients who are dependent sitters, pre-setting the foot support to the best estimated measurement may minimise the risk of sliding down the wheelchair and facilitates adjustment to the foot support and cushion set up for optimal pressure management. Provided that the seat depth and seat to back angle are set up appropriately for the client, an approximate calculation for seat to foot support distance is the lower leg length + shoes / heel height – estimated cushion height.

For some clients who have longer lower leg length than the available wheelchair lower leg support adjustment, the footplates may not be lowered enough. Foam seat block, seat wedges have been used with cautions below, as an interim, in order to improve contact under thighs. A longer set of lower leg supports should be requested through the supplier. Consult with Spinal Seating Service for custom seat base solutions.

### Cautions for using seat wedge / seat raiser blocks:

- An anterior-posterior seat wedge reduces the seat to back angle- check for hip angle / hamstring restriction.
- A raised seat surface height with a seat / foam block will require height adjustment to armrest, backrest and headrest.
- Check the centre of gravity for wheelchair propulsion and head clearance in and out of the vehicle.
- Refer to Seating service for a custom seat base such as the contour foam base and pressure evaluation with interface pressure assessment tools.

## **Handy tips for seat to back support adjustment:**

- To determine the correct adjustment, compare the thigh to trunk angle in MAT to the seating "true" angle (the angle between back support surface to seat surface, - e.g., measure the angle from the centreline of seat upholstery to back upholstery when the client is in the MWC).
- many commercial backrests have options for adjustable mounting hardware
- seat rail to back post angle adjustment is needed if backrest has no angle adjustment – backrest height may need to be adjusted so that the lateral trunk support is not too high or low and to maintain sufficient contouring surface to the rib cage
- consider accommodation to kyphotic and lordotic curves
- pay attention to high risk areas such as scapulae and spinous processes