

Will this wheelchair fit? Seat width and depth considerations

Medical Aids Subsidy Scheme

31 October 2019

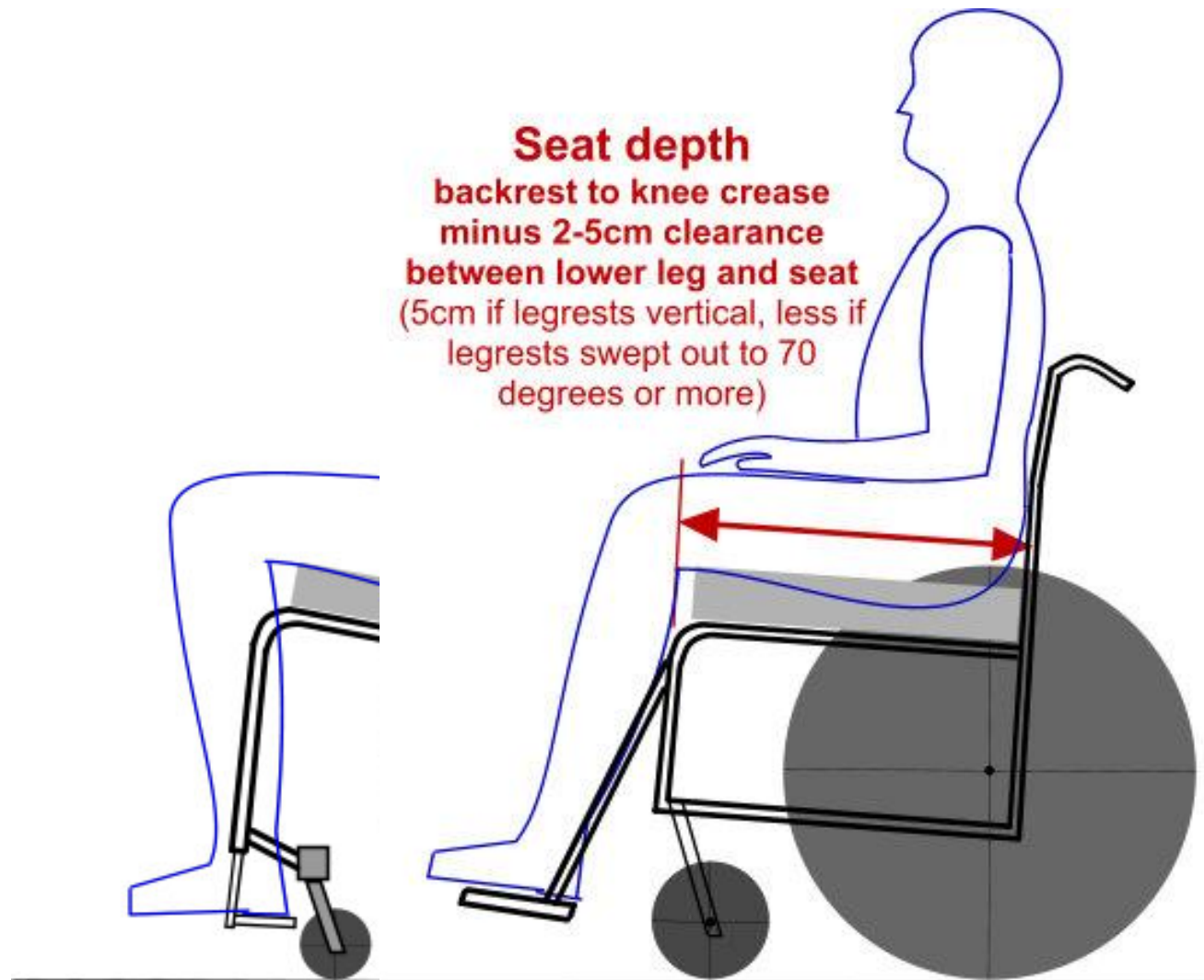
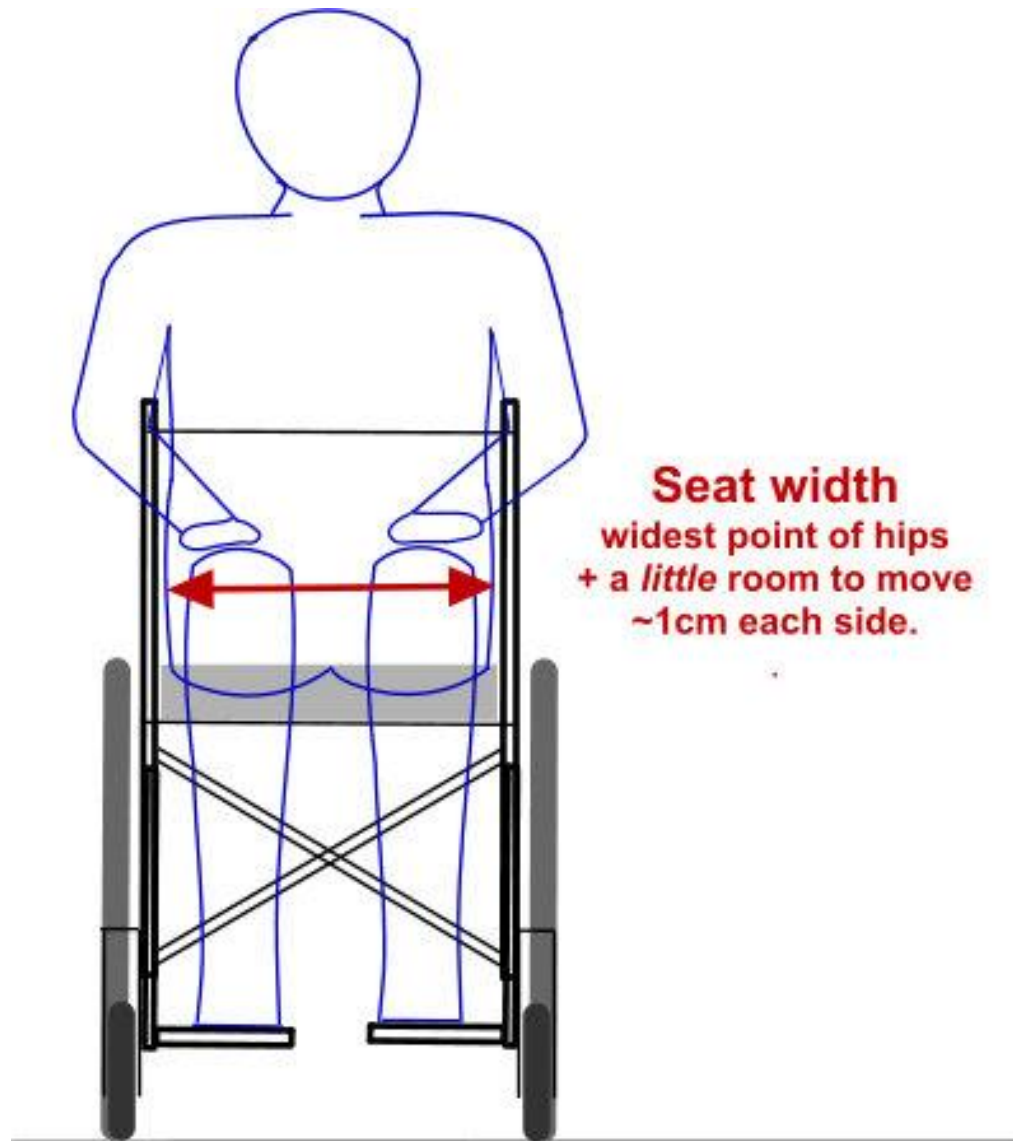


Queensland
Government

Overview

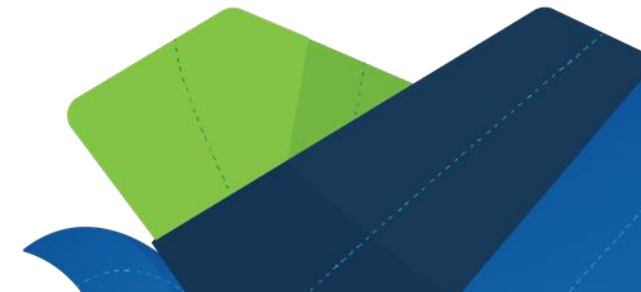
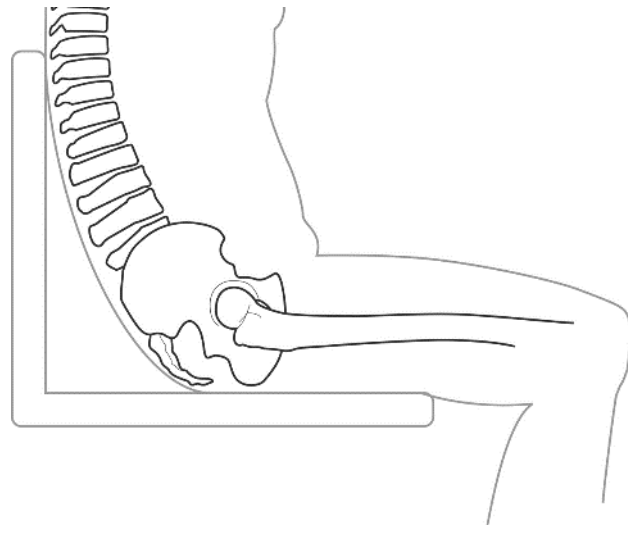
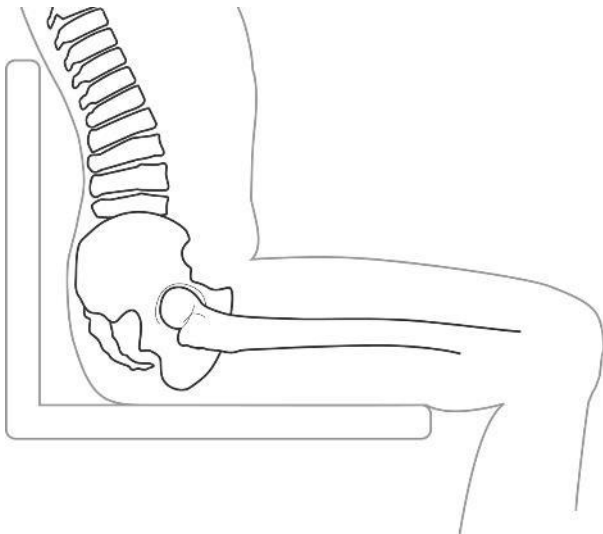
- Pelvic position, growth and weight gain – the impact on seat depth and width
- How to measure the wheelchair user's sitting width and depth
- Translating user measurements to a wheelchair size
- What went wrong with chairs that did not fit on delivery





Pelvic Position

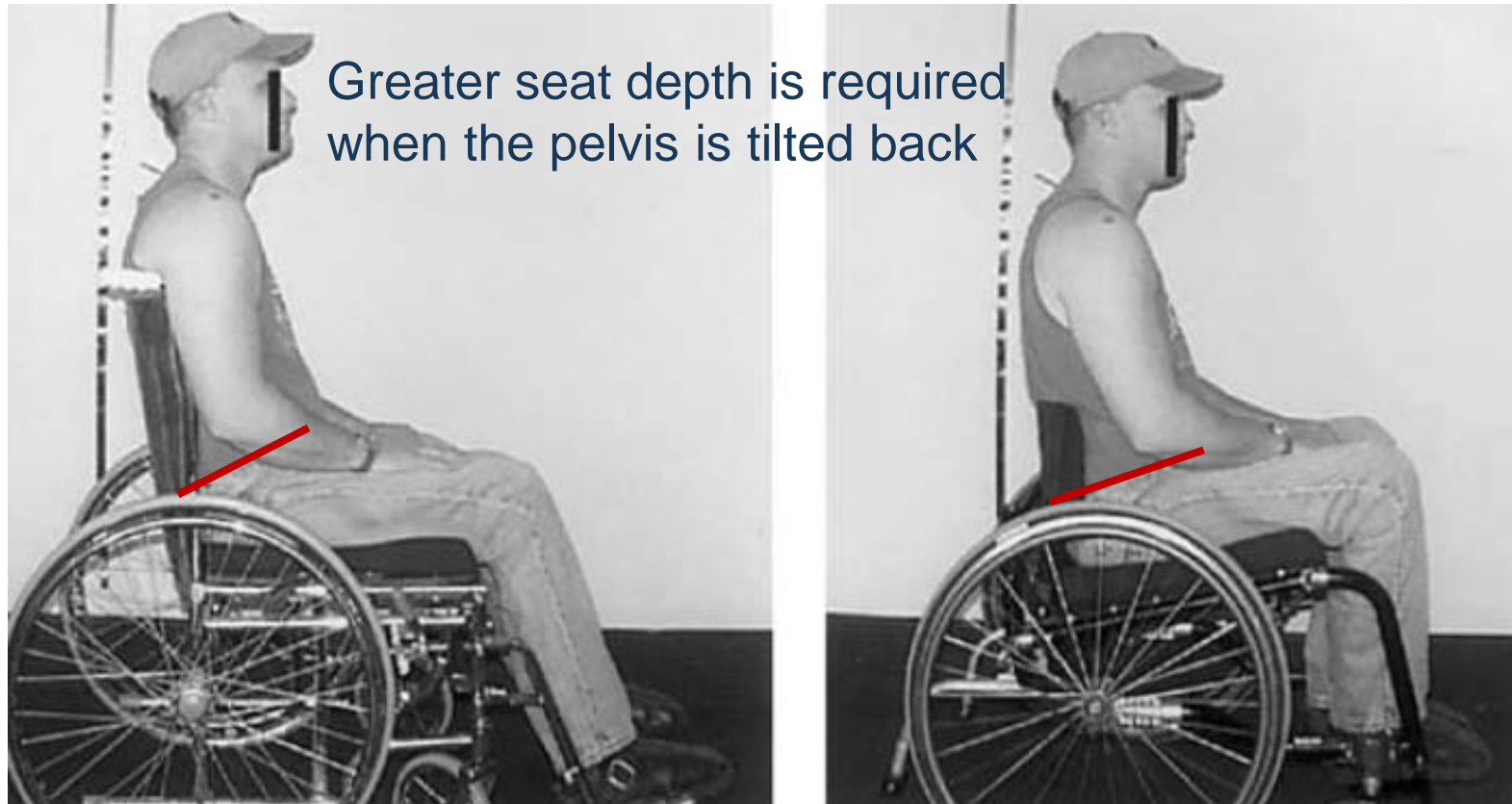
- Normal, can self-correct
- Tilted: backward, forward, sideways (obliquity)
- Rotated



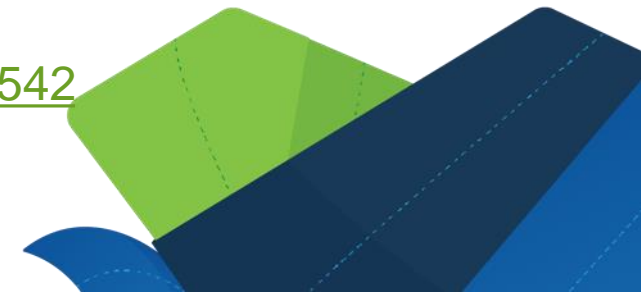
Pelvis tilted back is a postural compensation for many wheelchair users to broaden their base of support to find stability



A more upright pelvic position may be possible by changing wheelchair setup: back height, seat angle, lower limb position.
Can the person tolerate and maintain the position?

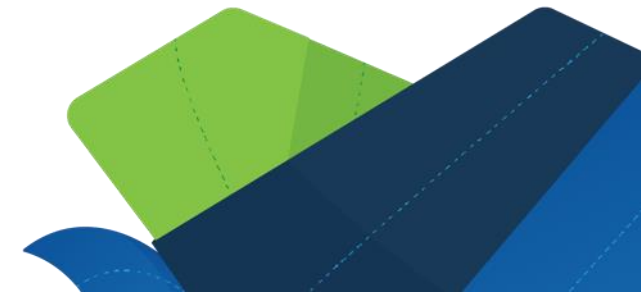


Sourced from <https://www.sciencedirect.com/science/article/pii/S0003999302048542>

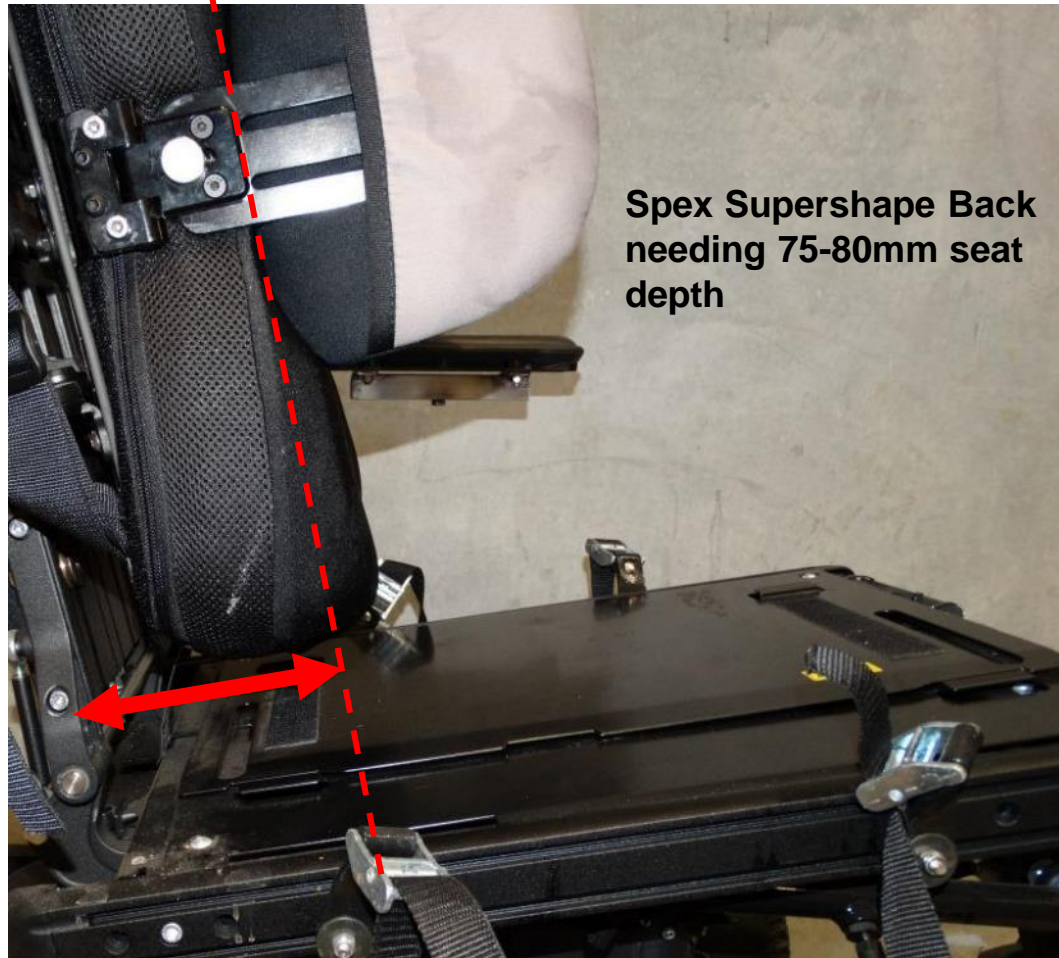


Translating User Measurement to Seat Size:

Is extra width required to stay centred in seat, to not lean to one side or rotate in seat?

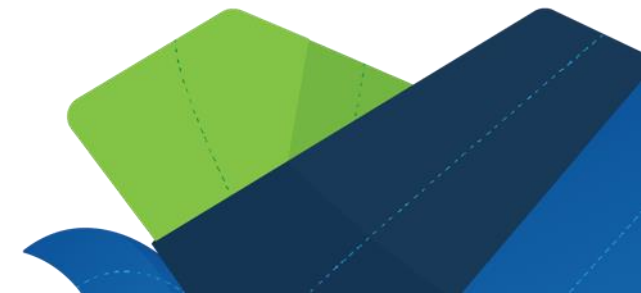


Translating User Measurement to Seat Size: Is extra depth required to fit a supportive backrest?

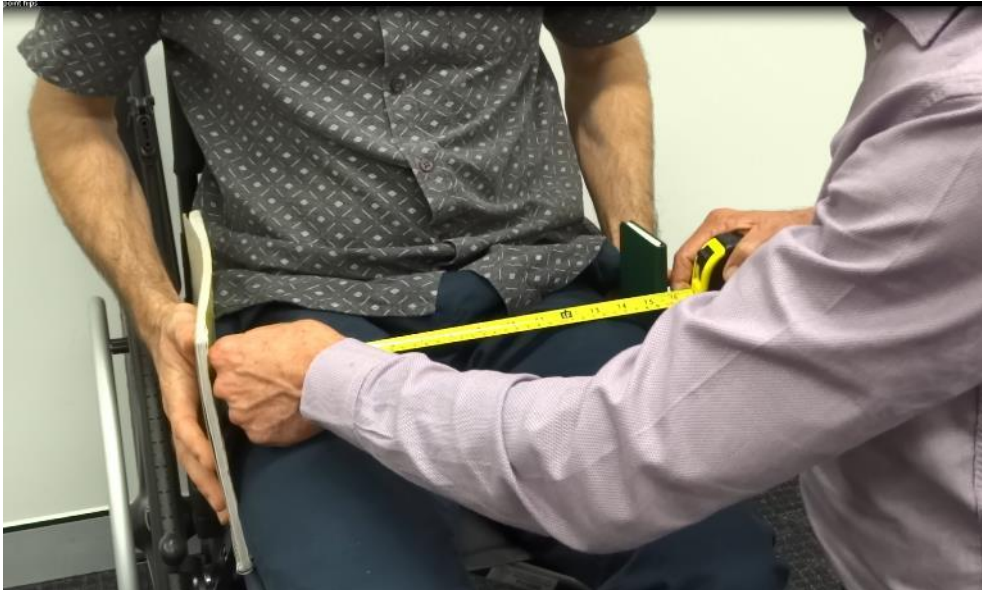


Where and how to measure width and depth?

- In chair if possible: slung upholstery, backrest position influence seat depth measurement
- In sitting if
 - Bariatric or obese with lot of soft tissue – width can be greater in sitting than it is in lying
 - User has some asymmetry, leans to one side, legs rotate to side
- On plinth or firm surface ***if assessing potential*** for improved sitting posture. Allows trial of correction, or change in position

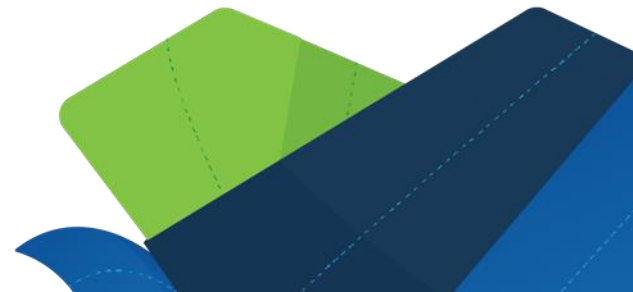


Video measuring width and depth



Growth and weight gain require changes in seat width and depth over time

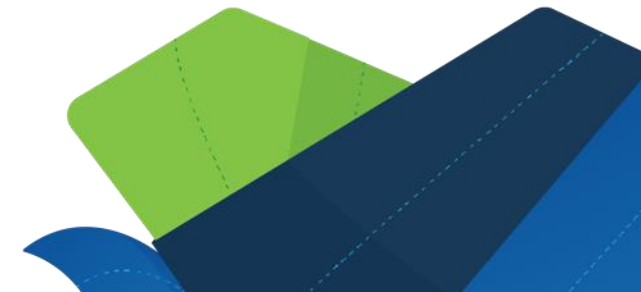
- Folding manual wheelchair: cannot grow width unless change cross-brace
- Power wheelchairs and most tilt-in-space: can grow width without changes to frame, may need to change seat pan
- Rigid manual wheelchair:
 - Need growth kit – change cross-members
 - Need upholstery with growth or change upholstery



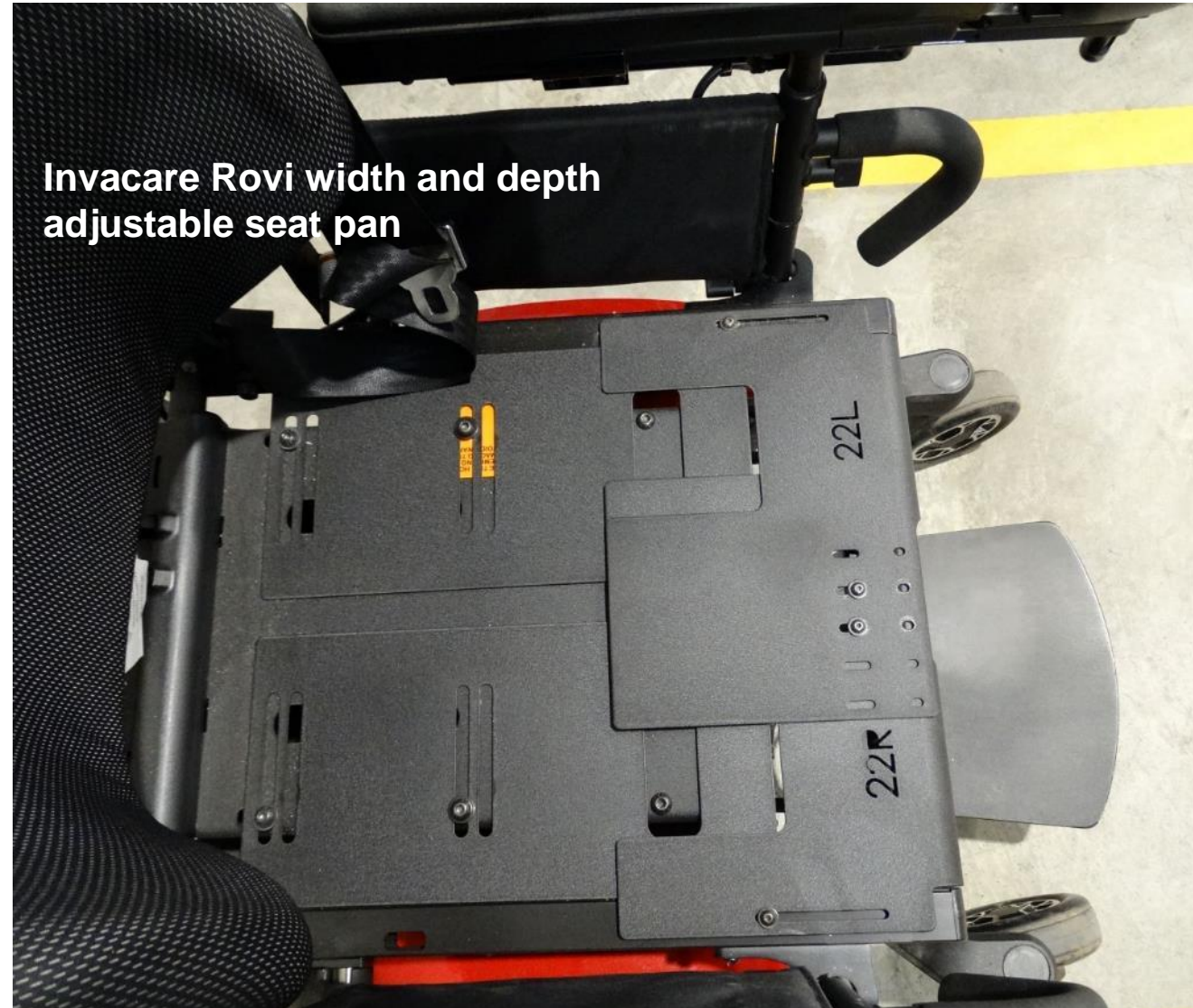
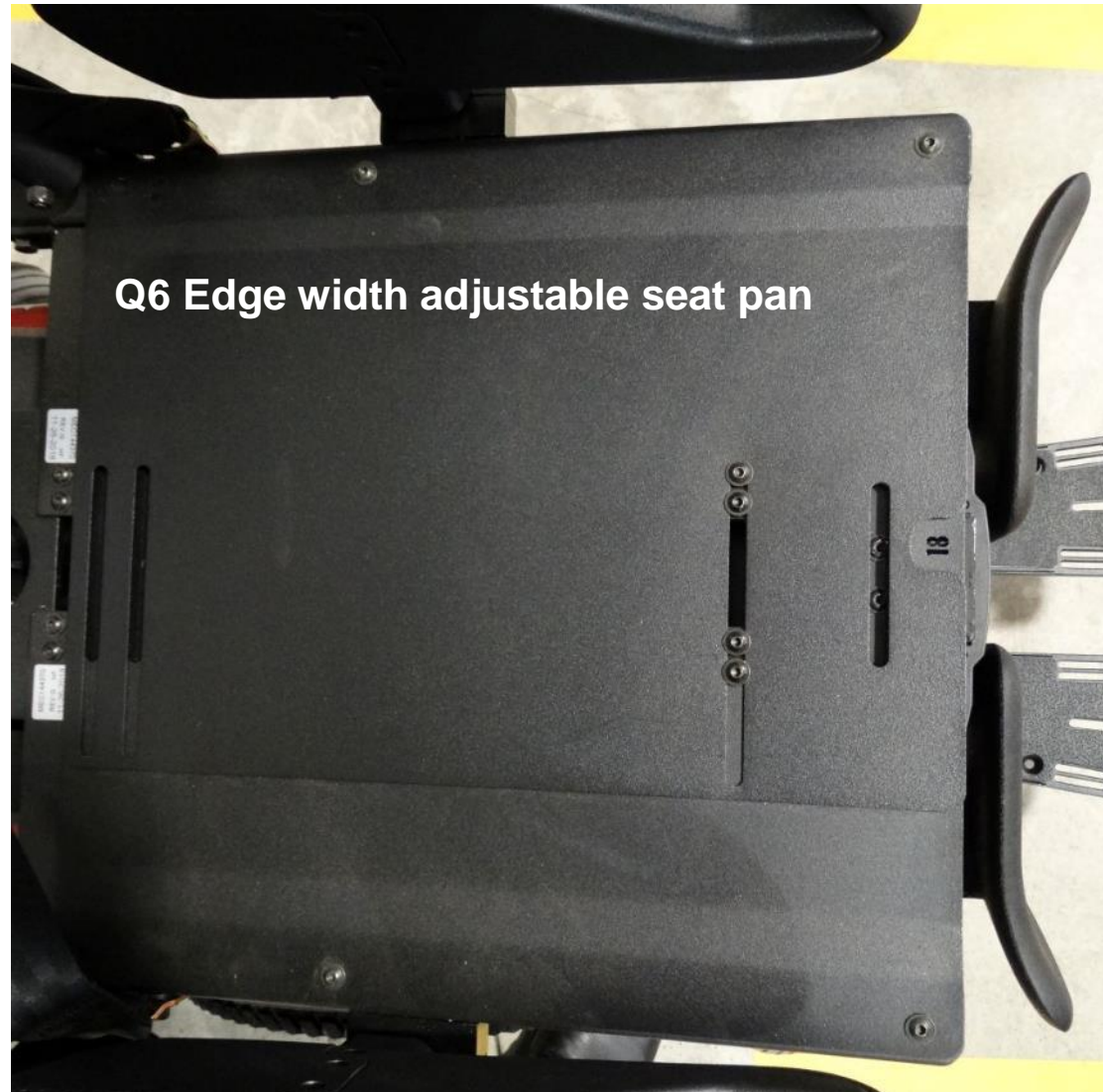
Folding frames: a different crossbrace for every chair width – if measurement is too narrow, a new crossbrace or new chair is required



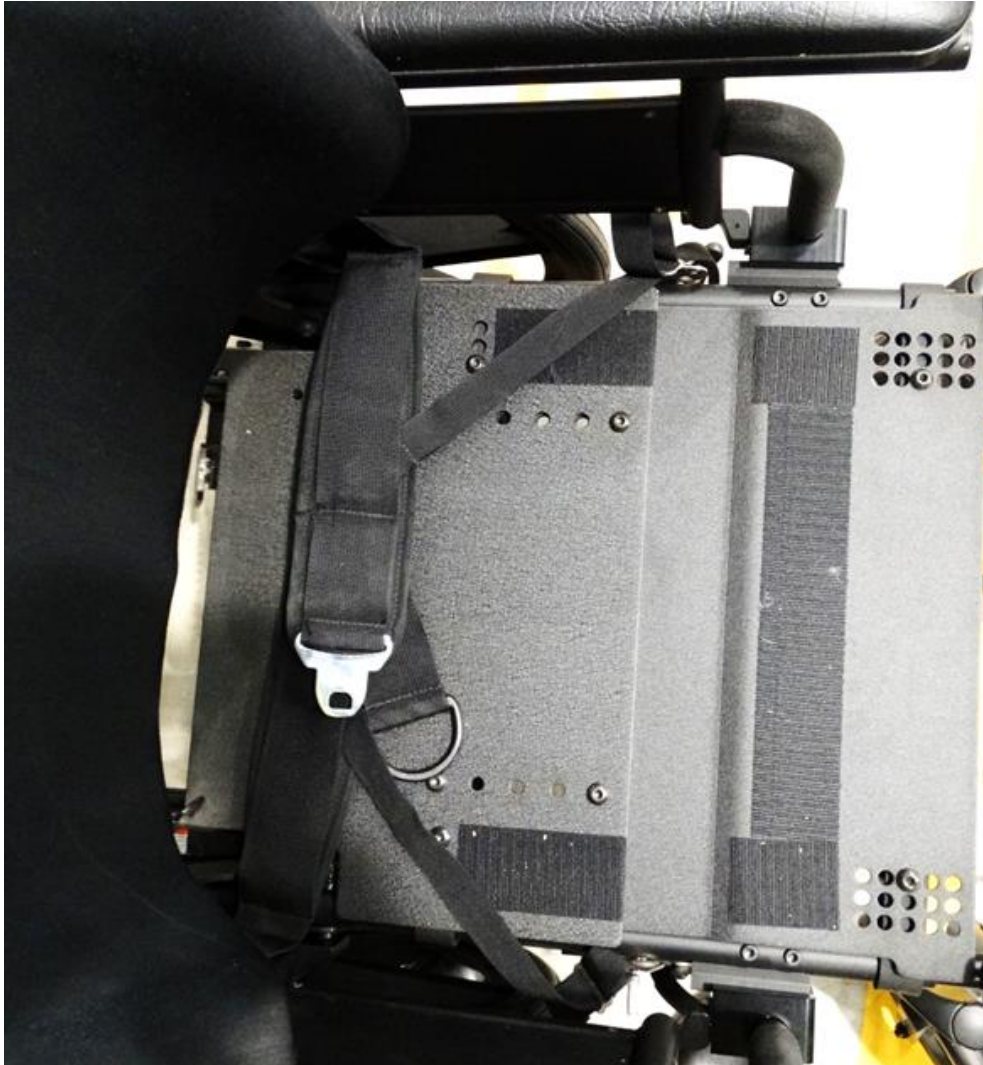
Rigid frames: Growth adjustable upholstery, change frame members to grow. A paediatric chair may offer up to 100mm growth in seat upholstery



Power and tilt-in-space wheelchair frames and seat pans offer more adjustment options

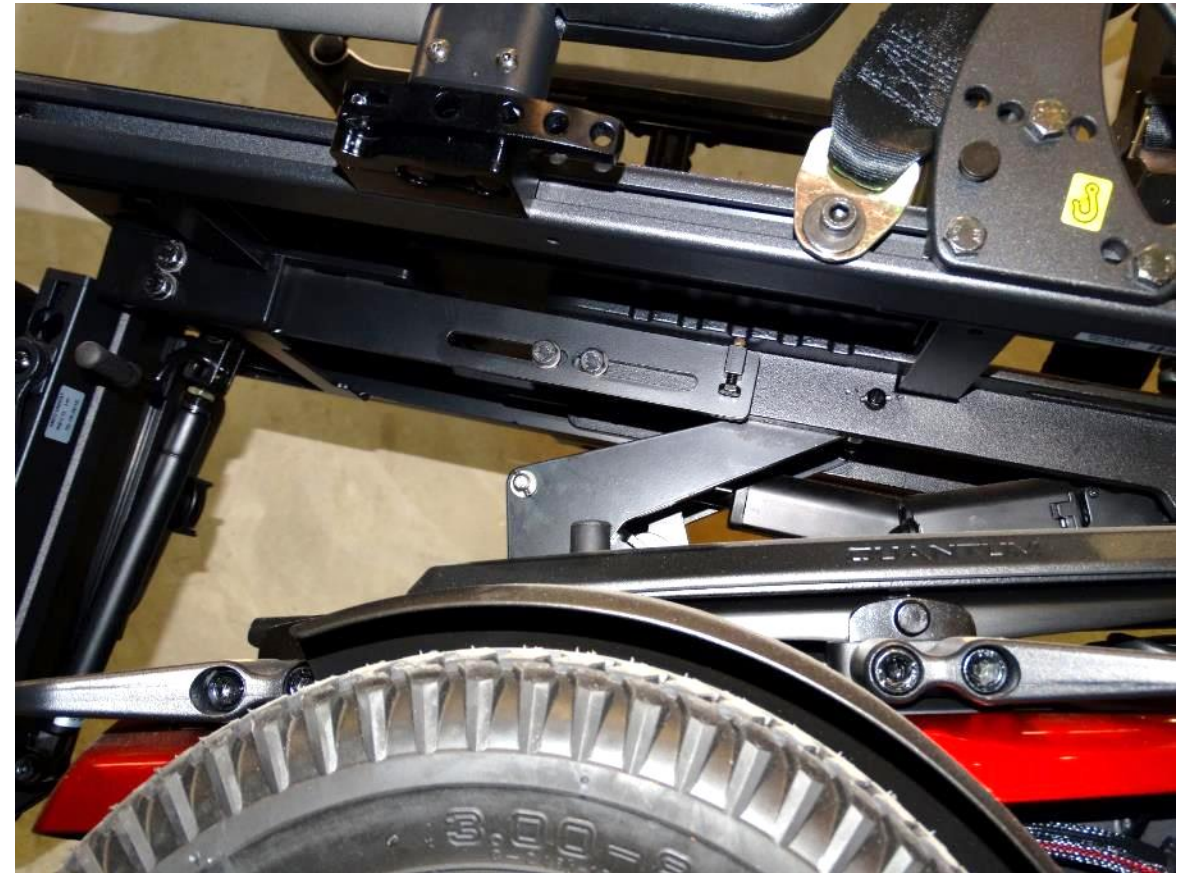


Power and tilt-in-space wheelchair frames and seat pans offer more adjustment options



Left: Quickie Iris depth adjustable seat pan
Above: Quickie Iris width adjustable frame

Power and tilt-in-space wheelchair frames and seat pans offer more adjustment options



Q6 Edge 3.0 seat depth is adjustable by changing backrest mounting position along channel at edge of seat, seat depth also adjustable under seat. Many power wheelchairs in the current market offer similar adjustment systems.



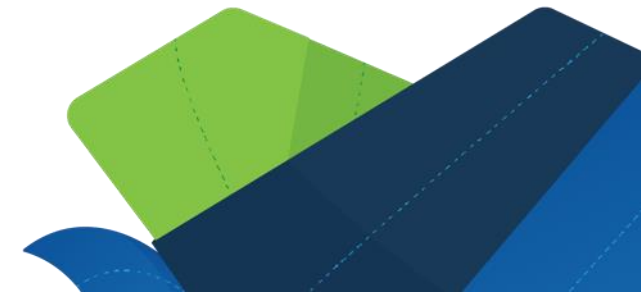
Adjustable Seat Depth: Gets you out of trouble if seat depth is too long, can slide entire crossbrace back on frame. Available on configurable economical wheelchairs but not with higher specification chairs



What went wrong: Measuring the wrong width on chair that was tried, then ordering a seat width that is not wide enough



- On all wheelchairs the seat width that is ordered is the outside frame width, not the seat sling width
- If trial chair had seat rails inside the side frame members (as shown in the blue framed chair), the chair was a good fit and you measured the seat sling width instead of outside frame width: the supplier provides a seat width equal to outside frame width, then then chair will be 50mm or 2" too narrow when delivered



What went wrong: Ordering a seat depth that is too long or too short



Seat depth is too long so it forces the person to adopt a posterior pelvic tilt



Seat depth is too short and complicated by the use of elevating legrests which tend to pull the pelvis into posterior tilted position. A greater seat depth and using tilt before elevating legrests is recommended