

# Seating Shapes

## ASSESSMENT GOALS

### Pelvis and Spine

- ✓ Assess posterior pelvic stability
- ✓ Assess posterior-lateral pelvic stability
- ✓ Assess lumbar support
- ✓ Assess posterior thoracic stability
- ✓ Assess lateral thoracic stability



### Posterior Sacral Support Not Present

- Pelvis will collapse into a posterior pelvic tilt
- Flattening of the lumbar spine
- Increase in thoracic spine kyphosis
- Hips sliding forward



### Posterior-Lateral Sacral Support Not Present

- Pelvis and spine may become asymmetrical
- Pelvis may collapse into a posterior tilt and rotated position
- Flattening of the lumbar spine
- Hips may slide forward
- Pelvis may shift laterally
- Pelvis may become oblique, spine may become laterally flexed

### Posterior Thoracic Support (Shape)



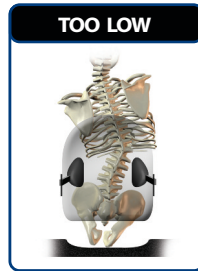
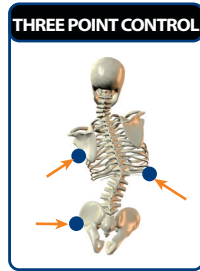
#### Too Little

- May cause inadequate accommodation of thoracic spine creating forward or lateral collapse of trunk
- May cause poor head position/control
- In absence of correct shape may push pelvis and/or trunk forward



#### Too Much

- May inhibit function
- May encourage a collapsed trunk posture
- This can be common with bariatric clients



### Lateral Thoracic Support

- Vertical Placement Range**
- Location must support the ribcage
  - Provide three points of control

#### Too Low/Too Shallow

- Thoracic spine may not be supported
- May lead to collapse of trunk and poor trunk control
- May cause skin irritation

#### Too Deep

- May interfere with upper extremity function and/or cause injury

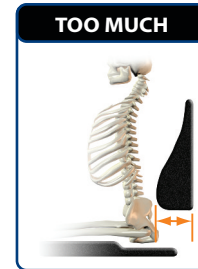
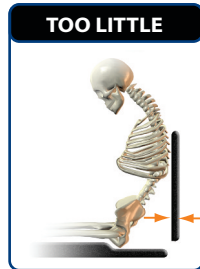
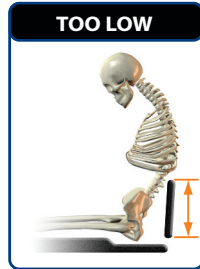
### Thoracic Support (Height)

#### Too Low

- Thoracic and/or lumbar spine may not be supported
- May lead to collapse of trunk and poor trunk control

#### Too High

- Upper extremity function may be compromised
- May cause instability or discomfort
- May cause sliding away from backrest
- May cause increased pressure on scapula and thoracic area



### Lumbar Support (Shape)

#### Too Little

- In the absence of posterior pelvic support contour, the lumbar area may collapse
- May cause posterior pelvic tilt
- May cause sliding of pelvis forward

#### Too Much

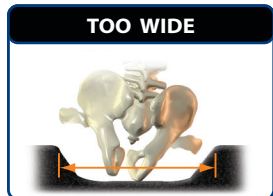
- Pelvis may rotate posteriorly or anteriorly
- Trunk can fall forward
- Extensor muscles may compensate for leaning forward and inhibit function

## ASSESSMENT GOALS

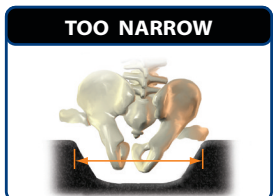
### Pelvis and Lower Extremities

- ✓ Assess hip flexion Range of Motion (ROM)
- ✓ Assess hamstring length
- ✓ Provide lateral stability
- ✓ Provide anterior stability
- ✓ Maximize surface contact area

**Pelvic Contour Width**  
Consider protecting the trochanters via offloading or immersion/envelopment.



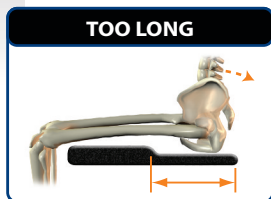
- Too Wide**  
Trochanters not supported may cause:
- Lateral instability and/or pelvic obliquity
  - Ischial Tuberosities (ITs) can bottom out
  - This may be common in pediatric patients



- Too Narrow**
- This can be common with clients who are bariatric
  - Creates a pelvic obliquity
  - Increases pressure on greater trochanters

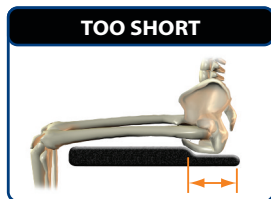
### Pelvic Contour Length

Buttocks should be supported while loading femurs for stability. Ischial Tuberosities (ITs) need to be protected during activity.



#### Too Long

- ITs can slide forward into posterior pelvic tilt which can lead to additional loading on coccyx
- Possible inadequate femoral loading
- May cause increased shear force at ITs

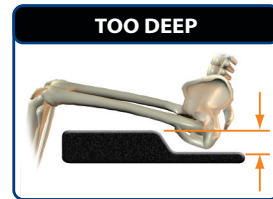


#### Too Short

- Results in insufficient space for IT movement for functional activity
- ITs may press into anterior shelf of cushion causing potential skin integrity issues

### Pelvic Contour Depth

The buttocks should be supported while maintaining optimal hip angle. Correct height depends on difference in height between ischials and posterior aspect of femur.



#### Too Deep

- May cause interference with hip angle
- May increase or decrease hip flexion angle, depending on hip ROM and amount of support at posterior pelvis
- The pelvis may not be optimally loaded which can lead to additional loading at coccyx



#### Too Shallow

- Femurs will not be loaded
- May not prevent sliding
- May not provide optimal pressure reduction at the ischials

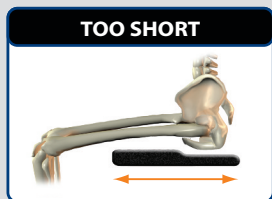
### Femoral Support Length

Femoral loading stabilizes the pelvis, positions the lower extremities, and redistributes pressure.



#### Too Long

- Pulls the hips forward in the seat which may cause sliding
- Inhibits function
- Increases pressure behind knees



#### Too Short

- Not enough surface contact area for loading
- Ischials may have increased pressure
- Lower extremities may not be optimally positioned

## REFERENCES:

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