COMFORT, ALIGNMENT, SKIN PROTECTION: HOW BACK SUPPORTS MEET THESE NEEDS
BRENLEE MOGUL-ROTMAN, BSC.O.T, OT REG (ONT.), ATP/SMS
Toward Independence

Body Orientation

ABDuction
ADDuction
Superior
Inferior
Medial
Lateral
Distal
Proximal
Flexion
Extension
Rotation (internal and external)

The Pelvis

The position of the pelvis dictates one’s alignment and ability to function in the seated position.

The Spine

Functions of the spine
  - Protection of the spinal cord
  - Provides for trunk mobility
  - Connects the upper and lower extremities

Goals of a Solid Back Support System

Provide trunk support
Proximal balance and stability allows distal mobility and functional movement
Support posterior pelvis
Protect skin
Allow horizontal gaze
Support all functional activities - ADLs, mobility, rest

Pelvic/spine/head relationship

Remember,,
The sacrum connects to the spine at S1/L5
The sacrum’s position dictates the rest of the spine reaction
The head is connected to and balances on top of the spine
Closed Kinematic Chain

Adjustments: What are they?

Height
Depth
Angle
Lateral supports

Back Support

- Postural support device intended to contact the posterior surface of the sacral, lumbar and/or thoracic segments of the trunk to provide support to the torso.
- Note 1: A back support is a type of posterior support, and is synonymous with the term “posterior trunk support”.

Back height

Sitting balance, tone, posture, propulsion, type of wheelchair.
Scapula (inferior angle of the scapula)
BUT....
Do you have a gap lower down if you try and get the back to reach the scapula?
What to do? How to decide?

Back Height

- Height
- Linear dimension representing the placement, or location, of a specified point on a postural support device, measured from an external reference point.
- Length
- Linear dimension of a seating support surface measured in the Y-axis direction (up-down) on a line parallel to the support surface reference plane.

PSIS- POSTERIOR SUPERIOR ILIAC SPINE

Key landmark when deciding where to mount the back support
Provides lower trunk control and control of the pelvis

If you need more height, then get a taller back support, don’t mount it higher....

Depth

- Linear dimensions of a seating support surface measured in the X-axis direction (fore-aft) on a line parallel to the support surface reference plane.

Moving the back support forward or back will affect the seat depth
Fwd=less seat depth. Backward=more seat depth
BUT...

Does stability bar interfere?
Is the cushion depth correct?
Do the back canes now interfere with client’s body?
Angle

- **Recline**
  - To change the orientation of a posterior support in the sagittal plane, in a rearward direction from a vertical position, so that the top of the support is more posterior than the bottom of the support. (open seat to back angle)

- **Procline**
  - To change the orientation of a posterior support in the sagittal plane, in a forward direction from a vertical position, so that the top of the support is more forward than the bottom of the support. (closed seat to back angle)

Angle can cause client to sit anterior, neutral or reclined.
Open seat to back angle= recline
Closed seat to back angle= anterior or forward

**Pivot point is key:**
Do you lose PSIS contact?
Is the pelvis (bum) pushed forward?
Do the back canes get in the way of the body?

Thickness/Contour

- **Thickness**
  - Linear dimension of a seating support surface measured perpendicular to the support surface reference plane.

- **Contour**
  - Linear dimension of a concave area of a back support or seat cushion, measured in the Z-axis direction from side to side.
  - Linear dimension of a concave area of a back support or seat cushion, measured from top to bottom (back support) or back to front (seat cushion).

Lateral supports

Symmetrical or asymmetrical placement?
Upper or lower trunk support?
How much depth to the laterals is needed?
Swing away, fixed or built in to shape of back support

Functional Issues

Hooking
Lean to the side to reach
Propulsion
Transfers: can client transfer independently, can transfer board be inserted, can sling be inserted?
Dressing/undressing
Bladder care
Transport in vehicle
It's not all about the Back Support

Combination with cushion and secondary supports
Set up of mobility base:
- seat to back angle/back cane adjustability
- dump/seat to floor difference
- stabilizer bar
- push handles
- clothing guards/adductors
Armrests
Tray

Remember...
Back support is just one component of the overall seating system
Each client needs to be individually assessed
Various options are dependent on client physical, functional and personal needs

References:


7. Wheelchair.ca . wheelchair.ca/seating/backrests.php

Speaker Bio:

Brenlee Mogul-Rotman is an occupational therapist in the Toronto area working in private practice. She is a member of the Professional Standards Board of RESNA.