

CLINICAL ISSUES

TECHNICAL ISSUES

PELVIS & LOWER EXTREMITIES

PELVIS & SPINE



POSTERIOR PELVIC TILT

- Low or absent tone in the trunk muscles
- Limited hip flexion
- Abnormal tone (trunk and/or lower extremities)
- Pathological reflexes in lower extremities or trunk
- Decreased lordosis
- Tight hamstrings
- Increased thoracic kyphosis
- Decreased pelvic/lumbar spine range of motion

- Seat depth too long
- Footplates too high (Thighs not loaded sufficiently)
- Footplates too low (Feet not loaded sufficiently)
- Seat-to-floor height too high for foot propulsion
- Footplate position relative to knee does not accommodate tight hamstrings
- Wheelchair does not provide solid base of support (Sling upholstery)
- Back support too vertical
- Armrests too low
- Back does not support posterior pelvis



PELVIC OBLIQUITY

- Asymmetrical trunk muscle strength
- Asymmetrical muscle tone (trunk and/or lower extremities)
- Asymmetrical soft tissue or muscle mass
- Asymmetrical pelvic/femur one structure
- Asymmetrical hip flexion
- Scoliosis

- No solid base of support
- Wheelchair too wide
- Armrests too low (Upper extremities not supported)
- Seat does not support trochanters



PELVIC ROTATION

- Asymmetrical muscle tone (trunk and/or lower extremities)
- Asymmetrical hip abduction
- Asymmetrical hip adduction
- Asymmetrical hip flexion
- Leg length discrepancy
- Posterior dislocated or subluxed hip
- Unilateral foot propeller

- Trunk not supported
- Back support does not support posterior pelvis
- Seat to floor height too high for foot propulsion



ANTERIOR PELVIC TILT

- Tight hip flexors
- Tight quadriceps
- Tightened paraspinals
- Weakened abdominals
- Obesity
- Increased lumbar lordosis

- Anterior femoral angle (Knees lower than hips)
- Back support too vertical
- Excessive lumbar contour



THORACIC KYPHOSIS

With Reduced Lumbar Lordosis (Full C-Curve)

- Low or absent muscle tone in the trunk muscles
- Compensation for posterior tilted pelvis
- Spinal fusion or structural spinal deformity
- Diminished head control

- Back does not support thoracic spine
- Back does not support posterior pelvis
- Back support too vertical
- Back support too low
- Back does not provide enough lateral support
- Seat to back angle too open



UPPER THORACIC KYPHOSIS

- Diminished disc space in upper thoracic spine
- Hyper extended cervical spine
- Extreme hyper mobility
- Postural deterioration over time
- Diminished head control

- Back support too low
- Arm support too low
- Wheel set up incorrect for hand propulsion
- Back does not support thoracic spine
- Head support mounted too far forward



SCOLIOSIS

- Asymmetrical muscle tone or strength in the trunk muscles
- Compensation for pelvic obliquity and/or pelvic rotation
- Structural spinal deformity
- Inability to hold the head in midline
- Collapsed lung
- Decreased trunk balance
- Asymmetrical upper extremity strength during manual wheelchair propulsion

- Back does not support posterior pelvis
- Back does not support thoracic spine
- Back does not provide enough lateral support
- Seat cushion does not provide pelvic stability
- Wheelchair does not provide solid base of support (Sling upholstery)
- Upper extremity support is too low, too high or too wide
- Not enough head support
- Joystick location inappropriate



INCREASED LUMBER LORDOSIS

With Thoracic Extension

- Low or absent muscle tone in the trunk muscles
- Compensation for anterior tilted pelvis
- Tightened paraspinals
- Obesity
- Hypermobility of lumbar spine

- Anterior femoral angle (knees lower than hips)
- Back too vertical
- Excessive lumbar contour
- Back support too low
- Posterior pelvic support too high
- Orientation in space not optimal (system too upright)

Improper positioning in a wheelchair can cause any of the postures described.

Clinical Assessment Goals

Identify posture/orthopedic deformities at each body segment.

Is it fixed or flexible?