



POSTERIOR PELVIC TILT

Low or absent tone in the trunk muscles
 Limited hip flexion
 Abnormal (high, low or fluctuating) tone in 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 upright
 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 bone structure
 Asymmetrical hip flexion
 Limited hip abduction and/or adduction
 Limited hip internal or external rotation
 Scoliosis

No solid base of support
 Wheelchair too wide
 Armrests too low (Upper extremities not supported)
 Seat shape does not support trochanters
 Seat and or back does not provide enough lateral pelvic support
 Footplate position and/or seating angles do not support hip range limitations
 Joystick and/or wheel location inappropriate

PELVIC ROTATION

Asymmetrical muscle tone (trunk and/or lower extremities)
 Asymmetrical hip flexion
 Leg length discrepancy
 Posterior dislocated or subluxed hip
 Unilateral foot propeller
 Limited hip abduction and / or adduction range of motion
 Asymmetrical muscle mass in the posterior pelvis
 Scoliosis plus or minus rotation and/or bony deformity

Trunk not supported
 Back support does not support posterior pelvis
 Seat to floor height too high for foot propulsion
 Seat and or/ backrest contours too narrow
 Wheel set up incorrect for hand 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 upright
 Excessive lumbar contour
 Trunk not supported

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
 Compensation for visual impairment

Back does not match shape of posterior trunk
 Back does not support posterior pelvis
 Back support too vertical
 Back support too low
 Seat to back angle too open or closed
 Head support mounted too far forward or too low
 Arm supports too low

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 match shape of posterior trunk
 Head support mounted too far forward or too low
 Seat to back angle too closed

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 match shape of posterior trunk
 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 or wheel location inappropriate

INCREASED LUMBAR 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
 Compensation for instability

Anterior femoral angle (knees lower than hips)
 Back too vertical
 Excessive lumbar contour
 Back support too low
 Posterior pelvic support too high
 Back does not match shape of posterior trunk
 Orientation in space not optimal (system too upright)

Clinical Assessment Goals

✓ Identify posture/orthopedic deformities at each body segment.

✓ Is it fixed or flexible?