Pelvic & Spinal Postures

	CLINICAL ISSUES	TECHNICAL ISSUES
 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/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 Hypermobiliy 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)

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?*

PELVIS & LOWER EXTREMITIES

PELVIS & SPINE