

Pelvic & Spinal Postures

POTENTIAL CLINICAL CAUSES

POTENTIAL TECHNICAL (EQUIPMENT) CAUSES

Low or absent tone in the trunk muscles/low tone/muscle control in pelvis or trunk Abnormal (high, low, or fluctuating) tone in trunk and/or lower extremities Pathological reflexes in lower extremities or trunk/abnormal reflexes in + SAGITTAL trunk/lower extremities
Limited hip flexion
Decreased lordosis
Decreased pelvic/lumbar spine range of motion
Decreased hamstring ROM PELVIC ANGLE (Posterior Pelvic Tilt)

Seat depth too long
Footplate position relative to knee does not accommodate tight
hamstring
Front end angle/hanger angle doesn't accommodate hamstring

range
Footplates too high (thighs not loaded sufficiently)
Footplates too low (feet not loaded sufficiently)
Lack of posterior pelvis/sacral support
Back support too upright
Seat-to-floor height too high for foot propulsion
Armrests too low

SAGITTAL PELVIC ANGLE

Increased lumbar lordosis Tightened paraspinals

Weakened abdominals (Anterior Pelvic Tilt) Tight quadriceps Tight hip flexors Obesity

Anterior femoral angle (knees lower than hips) Excessive lumbar contour Trunk not supported Back support too upright



FRONTAL PELVIC ANGLE

Asymmetrical trunk or lower limbs
Asymmetrical muscle tone (trunk and/or lower extremities)
Asymmetrical trunk muscle strength
Asymmetrical soft tissue or muscle mass
Asymmetrical pelvic/femur bone structure
Asymmetrical hip flexion range of motion
Limited hip abduction and/or adduction
Limited hip internal or external rotation

Poor base of support - i.e. sling upholstery
Footplates, position and/or seat-to-back angle or
front end angle may not match client's
available range of motion
Seat shape does not support trochanters
Wheelchair too wide
Seat and/or back does not provide enough
lateral pelvic support
Joystick and/or wheel location inappropriate
Armrests too low (upper extremities not
supported)



(Obliquity)

TRANSVERSE PELVIC ANGLE

Scoliosis or roto scoliosis
Asymmetrical hip flexion
Asymmetrical muscle tone (trunk and/or lower leg length discrepancy)
Posterior dislocated or subluxed hip Limited hip abduction and/or adduction range of motion
Asymmetrical muscle mass in the posterior polyic

pelvis Unilateral foot propeller (extremities)

Trunk not fully supported Lack of posterior pelvis/sacral support Seat and or/or backrest contours too narrow Seat-to-floor height too high for foot propulsion Wheel set up incorrect for hand propulsion

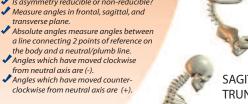


Low/absent muscle tone in the trunk muscles Compensation for posterior pelvic tilt Diminished head control Postural deterioration over time

Extreme hyper mobility
Hyper extended cervical spine
Diminished disc space in upper thoracic spine

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

Wheel set up incorrect for hand propulsion

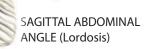


SAGITTAL TRUNK ANGLE (Kyphosis)

Low tone/poor muscle control in pelvis or trunk Compensation for posterior pelvic tilt Structural spinal deformity Diminished head control Compensation for visual impairment

Back does not match shape of posterior trunk Back does not match snape of posterior trunk Seat-to-back angle too open or closed Lack of adequate posterior pelvis/sacral support/back does not support posterior pelvis Back support too vertical Back support too low Head support mounted too far forward or too low

Arm supports too low



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

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



Compensation for pelvic obliquity and/or pelvic rotation Asymmetrical muscle tone or strength in the trunk muscles Decreased trunk balance

Structural spinal deformity
Asymmetrical upper extremity strength during manual
wheelchair propulsion
Inability to hold the head in midline

Back does not match shape of posterior trunk
Back does not support posterior pelvis
Back does not provide enough lateral support
Wheelchair does not provide solid base (sling upholstery)
Seat cushion does not provide pelvic stability
Upper extremity support is too low, too high, or too wide
Joystick or wheel location inappropriate

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