
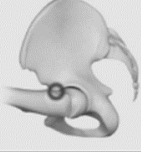
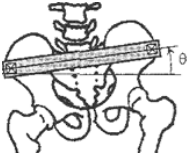
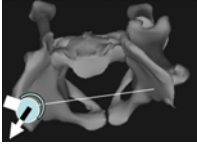


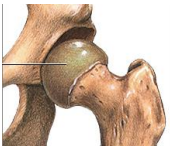
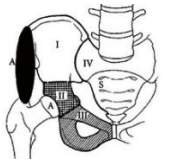
# POSITIONING CHART

PROBLEM	POSSIBLE CAUSE	SUGGESTIONS FOR INTERVENTION	GOALS
<b>PELVIS</b>			
<p><b>POSTERIOR PELVIC TILT</b></p> <ul style="list-style-type: none"> <li>• top of the pelvis is rotated posteriorly</li> </ul> 	<ul style="list-style-type: none"> <li>• low abdominal/trunk tone</li> </ul>	<ul style="list-style-type: none"> <li>• provide support to posterior superior surface of the pelvis to block posterior rotation</li> <li>• anteriorly sloped seat or drop the footrests to allow hip extension</li> <li>• biangular back, PSIS pad</li> </ul>	<ul style="list-style-type: none"> <li>• neutral alignment of the pelvis</li> <li>• support anatomical curvatures of the spine (i.e. prevent kyphosis)</li> <li>• promote weight bearing on ischial tuberosities, reduce pressure risks</li> <li>• best alignment for biomechanical function (e.g. of trunk musculature)</li> <li>• increase proximal stability for function</li> </ul>
	<ul style="list-style-type: none"> <li>• tight hamstrings</li> </ul>	<ul style="list-style-type: none"> <li>• open thigh to back angle and/or decrease thigh to calf angle</li> </ul>	
	<ul style="list-style-type: none"> <li>• depth of wheelchair seat cushion or platform is too long</li> </ul>	<ul style="list-style-type: none"> <li>• provide appropriate seat depth to allow pelvis to be positioned correctly</li> </ul>	
	<ul style="list-style-type: none"> <li>• limited range of motion, particularly limited hip flexion</li> </ul>	<ul style="list-style-type: none"> <li>• accommodate non-reducible limitation in hip flexion by opening seat to back angle to match range limitation</li> <li>• contoured or molded seating system to accommodate asymmetries, as needed</li> </ul>	
	<ul style="list-style-type: none"> <li>• sliding forward on seat</li> </ul>	<ul style="list-style-type: none"> <li>• provide anti-thrust or aggressively contoured seat</li> <li>• stabilize pelvis using appropriately angled pelvic belt (typically 60 degrees) or rigid anterior pelvic stabilizer</li> <li>• change upholstery type</li> </ul>	
	<ul style="list-style-type: none"> <li>• extensor thrust</li> </ul>	<ul style="list-style-type: none"> <li>• provide anti-thrust or aggressively contoured seat</li> <li>• stabilize pelvis using appropriately angled pelvic belt (typically 60 degrees) or rigid pelvic stabilizer</li> <li>• change position in space if caused by reflexive response</li> <li>• increase hip and knee flexion, hip abduction and ankle dorsiflexion</li> <li>• anterior knee supports</li> <li>• dynamic back</li> </ul>	


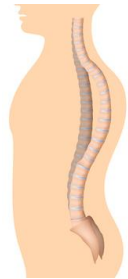
# POSITIONING CHART

PROBLEM	POSSIBLE CAUSE	SUGGESTIONS FOR INTERVENTION	GOALS
<p><b>ANTERIOR PELVIC TILT</b></p> <ul style="list-style-type: none"> <li>• top of the pelvis is tipped forward</li> </ul> 	<ul style="list-style-type: none"> <li>• low trunk tone</li> <li>• muscle weakness</li> <li>• lordosis</li> </ul>	<ul style="list-style-type: none"> <li>• place pelvic positioning belt across ASIS</li> <li>• circumferential support (belly binder, abdominal panel, or corset)</li> <li>• see interventions for lordosis</li> </ul>	<ul style="list-style-type: none"> <li>• reduce lordosis</li> <li>• neutral alignment of the pelvis</li> <li>• promote weight bearing on ischial tuberosities</li> <li>• best alignment for biomechanical function</li> <li>• increase proximal stability for function</li> </ul>
<p><b>PELVIC OBLIQUITY</b></p> <ul style="list-style-type: none"> <li>• one side of the pelvis is higher</li> </ul> 	<ul style="list-style-type: none"> <li>• scoliosis</li> <li>• ATNR</li> <li>• surgeries</li> <li>• discomfort / pain</li> </ul>	<ul style="list-style-type: none"> <li>• change angle of pull of pelvic belt, typically at 90 degrees, 4-point belt may be required</li> <li>• wedge: under low side to correct reducible obliquity, under high side to accommodate non-reducible obliquity</li> </ul>	<ul style="list-style-type: none"> <li>• best alignment for biomechanical function (i.e. of trunk musculature)</li> <li>• level head and then pelvis, if possible</li> <li>• equalize pressure under pelvis</li> <li>• prevent subsequent trunk lateral flexion</li> <li>• reduce fixing to increase function</li> </ul>
<p><b>PELVIC ROTATION</b></p> <ul style="list-style-type: none"> <li>• one side of the pelvis is forward</li> </ul> 	<p>ROM limitations in the hip:</p> <ul style="list-style-type: none"> <li>• abduction</li> <li>• adduction</li> <li>• hip flexion</li> <li>• windswept posture</li> </ul>	<ul style="list-style-type: none"> <li>• align pelvis in neutral and accommodate asymmetrical lower extremity posture, as needed</li> </ul>	<ul style="list-style-type: none"> <li>• neutral alignment of pelvis</li> <li>• support anatomical curvatures of the spine (prevent spinal rotation)</li> <li>• best alignment for biomechanical function (e.g. of trunk musculature)</li> <li>• prevent subsequent trunk rotation</li> <li>• increase proximal stability for distal function</li> <li>• increase pressure distribution over posterior trunk</li> </ul>
<ul style="list-style-type: none"> <li>• non-reducible limitations in spine, pelvis, and/or femoral mobility (i.e. rotational scoliosis)</li> </ul>	<ul style="list-style-type: none"> <li>• pelvis may need to assume asymmetrical posture in order to keep head trunk forward facing</li> </ul>		
<ul style="list-style-type: none"> <li>• unequal femur length</li> <li>• hip dislocation</li> </ul>	<ul style="list-style-type: none"> <li>• check measurement from the pelvis to the plane of the popliteal fossa with the pelvis in neutral position, if possible</li> <li>• create an appropriate seat surface depth for each limb, if non-reducible</li> </ul>		
<ul style="list-style-type: none"> <li>• asymmetrical surface contact over posterior buttocks and trunk</li> </ul>	<ul style="list-style-type: none"> <li>• create contour back surface to “fill-in”, if non-reducible</li> </ul>		
<ul style="list-style-type: none"> <li>• discomfort / pain</li> </ul>	<ul style="list-style-type: none"> <li>• identify source and remediate, or refer to physician</li> </ul>		


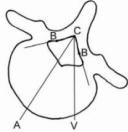
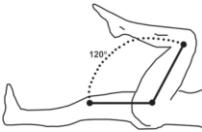
# POSITIONING CHART

PROBLEM	POSSIBLE CAUSE	SUGGESTIONS FOR INTERVENTION	GOALS
	<ul style="list-style-type: none"> <li>• increased muscle tone and/or reflex activity (ATNR)</li> </ul>	<ul style="list-style-type: none"> <li>• use positioning such as lower extremity abduction with hip, knee flexion, and ankle dorsiflexion to ‘break-up’ tone</li> <li>• pull pelvic belt back on forward side of pelvis</li> <li>• anterior knee support on forward side</li> <li>• anti-thrust seat</li> <li>• aggressively contoured or molded seat, if non-reducible</li> </ul>	
<p>PAINFUL OR DISLOCATED HIP</p> 	<ul style="list-style-type: none"> <li>• increased muscle tone pulling head of femur out of socket and influencing bony development</li> <li>• shallow socket due to lack of weight bearing</li> <li>• surgeries</li> </ul>	<ul style="list-style-type: none"> <li>• use softer materials under and/or around hip</li> <li>• avoid lateral contact with hip</li> <li>• provide lateral support along distal thigh</li> <li>• determine what positions relieve discomfort / pain</li> </ul>	<ul style="list-style-type: none"> <li>• comfort / reduced pain</li> <li>• reduce excessive hip adduction and internal rotation, as tolerated</li> <li>• work with medical team if surgically reduced</li> </ul>
<p>PELVIC AMPUTATION</p> 	<ul style="list-style-type: none"> <li>• Hemipelvectomy</li> <li>• Sacral Agenesis</li> </ul>	<ul style="list-style-type: none"> <li>• Generally, an orthotic is made</li> <li>• cushion is straight forward as the orthotic is being positioned, rather than the pelvis</li> <li>• if no orthotic, then molded seating system</li> </ul>	<ul style="list-style-type: none"> <li>• neutral alignment of trunk over pelvis</li> <li>• support anatomical curvatures of the spine</li> <li>• pressure distribution</li> <li>• best alignment for biomechanical function</li> <li>• increase proximal stability</li> </ul>


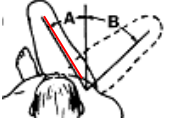
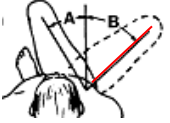
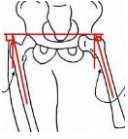
# POSITIONING CHART

PROBLEM	POSSIBLE CAUSE	SUGGESTIONS FOR INTERVENTION	GOALS
<p><b>TRUNK</b></p> <p><b>LATERAL TRUNK FLEXION OR SCOLIOSIS</b></p> <ul style="list-style-type: none"> <li>• scoliosis may be C curve, S curve, and/or rotational</li> </ul> 	<ul style="list-style-type: none"> <li>• increased tone on one side</li> <li>• decreased tone or muscle strength, causing collapse and asymmetrical posture</li> <li>• musculature imbalance</li> <li>• habitual posturing for functional activity or stability</li> <li>• non-reducible scoliosis</li> </ul>	<p>if reducible:</p> <ul style="list-style-type: none"> <li>• generic contoured back</li> <li>• lateral trunk supports (may need to be asymmetrically placed, one lower at the apex of lateral convexity)</li> <li>• anterior trunk supports to correct any rotation (see forward trunk flexion interventions below)</li> </ul> <p>if non-reducible:</p> <ul style="list-style-type: none"> <li>• refer to physician to explore medical or surgical procedures, x-rays</li> <li>• TLSO</li> <li>• aggressively contoured or molded back to provide for support and pressure distribution</li> <li>• horizontal tilt under seat to right head, if pressure distribution between ITs is adequate</li> </ul>	<ul style="list-style-type: none"> <li>• neutral alignment of trunk over pelvis, if reducible</li> <li>• minimize subsequent changes in pelvic and lower extremity posture</li> <li>• level head over trunk for increased vision, social interaction</li> <li>• pressure distribution</li> </ul>
<p><b>FORWARD TRUNK FLEXION OR KYPHOSIS</b></p> 	<ul style="list-style-type: none"> <li>• flexion at hips</li> <li>• flexion at thoracic area</li> <li>• flexion at shoulder girdle with gravitational pull downward</li> <li>• may occur from increased or decreased tone, muscle weakness, decreased trunk control</li> <li>• increased tone (i.e. hamstrings) pulling pelvis back into posterior tilt</li> <li>• posterior pelvic tilt</li> <li>• habitual seating in an attempt to increase stability</li> <li>• non-reducible kyphosis</li> </ul>	<p>if reducible:</p> <p>anterior trunk support</p> <ul style="list-style-type: none"> <li>• chest strap</li> <li>• shoulder straps</li> <li>• butterfly or vest style</li> <li>• shoulder retractors</li> <li>• TLSO</li> <li>• may be a rotational component</li> </ul> <p>posterior trunk support</p> <ul style="list-style-type: none"> <li>• correct posterior pelvic tilt</li> <li>• do not overcorrect limited hip flexion</li> <li>• increase trunk extension with biangular back or PSIS pad</li> </ul> <p>if non-reducible:</p> <ul style="list-style-type: none"> <li>• contoured or molded back to distribute</li> </ul>	<ul style="list-style-type: none"> <li>• prevent spinal changes and subsequent pelvic changes</li> <li>• neutral alignment of trunk over pelvis</li> <li>• if reducible, anatomical alignment</li> <li>• increase head control</li> <li>• reduce neck hyperextension</li> <li>• promote trunk extension</li> <li>• pressure distribution</li> <li>• maintain good visual field</li> <li>• improve safe swallow</li> <li>• improve breathing</li> </ul>



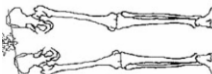
# POSITIONING CHART

PROBLEM	POSSIBLE CAUSE	SUGGESTIONS FOR INTERVENTION	GOALS
		pressure <ul style="list-style-type: none"> <li>• open seat to back angle until head is over pelvis and/or</li> <li>• tilt until head is over pelvis</li> </ul>	
<b>TRUNK EXTENSION OR LORDOSIS</b> <ul style="list-style-type: none"> <li>• hyperextension of the lumbar area</li> <li>• often combined with anterior pelvic tilt</li> </ul> 	<ul style="list-style-type: none"> <li>• tight hip flexors or overcorrection of tight hip flexors</li> <li>• increased tone pulling pelvis forward into an anterior tilt</li> <li>• habitual posturing in an attempt to lean forward for functional activities</li> <li>• “fixing” pattern to extend trunk against gravity (e.g. in conjunction with shoulder retraction)</li> </ul>	if reducible: <ul style="list-style-type: none"> <li>• provide lower back support, as needed</li> <li>• biangular back</li> <li>• may need to change seat to back angle</li> <li>• do not over correct limited hip extension</li> <li>• anterior trunk support (vest style or circumferential support)</li> </ul> if non-reducible: <ul style="list-style-type: none"> <li>• molded back</li> </ul>	<ul style="list-style-type: none"> <li>• neutral alignment of trunk over pelvis</li> <li>• pressure distribution</li> <li>• reduce subsequent shoulder retraction and fixing to allow function</li> <li>• reduce subsequent anterior pelvic tilt</li> </ul>
<b>TRUNK ROTATION</b> <ul style="list-style-type: none"> <li>• often seen in combination with lateral trunk flexion and pelvic rotation</li> </ul> 	<ul style="list-style-type: none"> <li>• pelvic rotation</li> <li>• see lateral trunk flexion causes above</li> </ul>	if reducible: <ul style="list-style-type: none"> <li>• use anterior supports on forward side</li> <li>• Y-strap</li> </ul> if non-reducible: <ul style="list-style-type: none"> <li>• consider placing pelvis asymmetrically in seating system so that trunk and head face forward</li> <li>• molded back to distribute pressure over posterior trunk</li> </ul>	if reducible: <ul style="list-style-type: none"> <li>• neutral alignment of trunk over pelvis</li> <li>• correct pelvic rotation</li> </ul> if non-reducible: <ul style="list-style-type: none"> <li>• pressure distribution</li> <li>• forward facing posture</li> </ul>
<b>LOWER EXTREMITIES</b>			
<b>HIP FLEXION</b> 	<ul style="list-style-type: none"> <li>• tight hip flexors</li> <li>• fixing with hip flexors due to lack of hip extension or stability</li> <li>• poor positioning</li> <li>• poor range of motion management</li> </ul>	if reducible: <ul style="list-style-type: none"> <li>• strap feet or even thighs</li> <li>• padded lap tray (underside)</li> </ul> if non-reducible: <ul style="list-style-type: none"> <li>• do not overcorrect and cause anterior pelvic tilt</li> <li>• asymmetric seating surface if hip angles are not symmetrical</li> </ul>	<ul style="list-style-type: none"> <li>• prevent anterior pelvic tilt</li> <li>• prevent lordosis</li> <li>• prevent further loss of hip extension</li> </ul>


# POSITIONING CHART

PROBLEM	POSSIBLE CAUSE	SUGGESTIONS FOR INTERVENTION	GOALS
<p><b>HIP EXTENSION</b></p> 	<ul style="list-style-type: none"> <li>• increased extensor tone</li> <li>• tight hip extensors</li> <li>• poor positioning</li> <li>• poor range of motion management</li> </ul>	<p>if reducible:</p> <ul style="list-style-type: none"> <li>• dynamic back</li> </ul> <p>if non-reducible:</p> <ul style="list-style-type: none"> <li>• open seat to back angle</li> <li>• increase knee flexion, if hamstrings are tight</li> <li>• asymmetric seating surface if hip angles are not symmetrical</li> <li>• contoured or molded seat</li> </ul>	<ul style="list-style-type: none"> <li>• prevent further loss of range leading to a more reclined, and less functional, position affecting vision, feeding and breathing</li> <li>• prevent posterior pelvic tilt</li> <li>• avoid putting extensors on stretch</li> </ul>
<p><b>HIP ADDUCTION</b> Often seen with hip extension and internal rotation</p> 	<ul style="list-style-type: none"> <li>• extensor tone</li> <li>• tight hip adductors</li> <li>• sling seat</li> <li>• poor positioning</li> <li>• poor range of motion management</li> </ul>	<ul style="list-style-type: none"> <li>• contoured seat</li> <li>• leg troughs</li> <li>• medial knee support</li> <li>• anterior knee support</li> <li>• leg straps</li> </ul>	<ul style="list-style-type: none"> <li>• pressure distribution between knees</li> <li>• anatomical alignment between hips and lower extremities</li> <li>• prevent stimulation of stretch reflex or initiation of extensor tone patterns</li> <li>• limit hip internal rotation</li> <li>• ease ADLs, such as dressing and toileting</li> </ul>
<p><b>HIP ABDUCTION</b></p> 	<ul style="list-style-type: none"> <li>• tight hip abductors</li> <li>• initial low tone</li> <li>• surgeries</li> <li>• poor positioning</li> <li>• poor range of motion management</li> </ul>	<ul style="list-style-type: none"> <li>• contoured seat</li> <li>• leg troughs</li> <li>• lateral knee supports</li> <li>• lateral pelvic/thigh supports</li> </ul>	<ul style="list-style-type: none"> <li>• anatomical alignment</li> <li>• pressure distribution (prevent pressure between lower leg and footrest hanger)</li> <li>• prevent further range loss which can lead to an overly wide seating system and impact accessibility</li> </ul>
<p><b>WINDSWEPT POSTURE</b> One leg is abducted/ext. rotated, the other is adducted/int. rotated</p> 	<ul style="list-style-type: none"> <li>• pelvic rotation</li> <li>• range limitations</li> <li>• destructive sleep positions</li> </ul>	<ul style="list-style-type: none"> <li>• pelvic rotation interventions (see above)</li> <li>• hip adduction and abduction interventions (see above)</li> <li>• sleep positioning interventions</li> </ul>	<ul style="list-style-type: none"> <li>• same as for pelvic rotation (see above)</li> </ul>

# POSITIONING CHART

PROBLEM	POSSIBLE CAUSE	SUGGESTIONS FOR INTERVENTION	GOALS
<p><b>KNEE FLEXION</b></p> 	<ul style="list-style-type: none"> <li>• decreased range of motion of hamstrings</li> <li>• flexor tone</li> <li>• structural knee issues</li> </ul>	<p>if reducible:</p> <ul style="list-style-type: none"> <li>• refer to physician to explore medical or surgical procedures to prevent range loss</li> <li>• alternative positioning</li> </ul> <p>if non-reducible:</p> <ul style="list-style-type: none"> <li>• open seat to back angle</li> <li>• move footplates back</li> <li>• close thigh to lower leg angle</li> <li>• anteriorly sloped seat</li> <li>• bevel front edge of seat, as needed</li> <li>•</li> </ul>	<ul style="list-style-type: none"> <li>• decrease tension in the hamstrings and thus minimize pull into posterior pelvic tilt</li> <li>• comfort / reduced pain</li> <li>• clear front castors of wheelchair</li> <li>• ease transfers</li> </ul>
<p><b>KNEE EXTENSION</b></p> 	<ul style="list-style-type: none"> <li>• extensor tone</li> <li>• decreased range in quadriceps</li> <li>• over lengthening of the hamstrings</li> <li>• structural knee changes</li> </ul>	<p>if reducible:</p> <ul style="list-style-type: none"> <li>• ankle straps</li> <li>• anterior knee supports</li> <li>• dynamic footrests</li> <li>• refer to physician to explore medical or surgical procedures</li> </ul> <p>if non-reducible:</p> <ul style="list-style-type: none"> <li>• move footplates forward</li> <li>• appropriately angled footrest hangers</li> <li>• elevating legrests</li> <li>•</li> </ul>	<ul style="list-style-type: none"> <li>• alleviate pull on pelvis and lower leg</li> <li>• accommodate in extended position, if non-reducible</li> <li>• dynamic footrests: reduce active tone, reduce client injury, reduce equipment breakage</li> </ul>
<p><b>LEG LENGTH DISCREPANCY</b></p> 	<ul style="list-style-type: none"> <li>• pelvic rotation</li> <li>• hip subluxation / dislocation</li> <li>• surgeries</li> <li>• unequal femur length</li> </ul>	<ul style="list-style-type: none"> <li>• correct any pelvic rotation, if possible</li> <li>• asymmetrical seat depth</li> </ul>	<ul style="list-style-type: none"> <li>• to provide adequate pressure distribution for each leg</li> <li>• to correct any pelvic rotation</li> </ul>

# POSITIONING CHART

PROBLEM	POSSIBLE CAUSE	SUGGESTIONS FOR INTERVENTION	GOALS
<p><b>LOWER EXTREMITY EDEMA</b></p> <ul style="list-style-type: none"> <li>fluid retention and/or swelling</li> </ul> 	<ul style="list-style-type: none"> <li>feet consistently lower than knees</li> <li>constriction at knees</li> <li>medical issues (i.e. blood pressure, decreased circulatory function)</li> </ul>	<ul style="list-style-type: none"> <li>provide alternative positioning out of the chair to elevate the legs above the level of the heart</li> <li>open the thigh to calf angle if ROM is possible and hamstrings are not put on stretch; must evaluate pull on pelvis</li> <li>check that feet and lower leg are supported</li> <li>raise footplates to alleviate pressure on distal thigh</li> <li>check for pressure areas around proximal lower leg</li> <li>compression socks (consult medical team)</li> </ul>	<ul style="list-style-type: none"> <li>reduce edema</li> <li>minimize potential for constriction, pressure or edema</li> <li>comfort / reduced pain</li> </ul>
<p><b>ANKLE LIMITATIONS FOOT DISTORTIONS</b></p>	<ul style="list-style-type: none"> <li>tonal patterns</li> <li>lack of weight bearing</li> <li>surgery</li> <li>discomfort / pain</li> </ul>	<ul style="list-style-type: none"> <li>angle adjustable foot plates (sagittal and frontal planes)</li> <li>padded foot boxes</li> <li>molded foot support</li> <li>specialized shoes (i.e. for Diabetes)</li> </ul>	<ul style="list-style-type: none"> <li>accommodate non-reducible distortions</li> <li>prevent pressure to foot</li> <li>protect feet from injury</li> <li>comfort / reduced pain</li> </ul>
<p><b>LOWER EXTREMITY AMPUTATION</b></p>	<ul style="list-style-type: none"> <li>congenital</li> <li>acquired</li> </ul>	<p>Below knee</p> <ul style="list-style-type: none"> <li>increase pressure distribution along thigh as much as possible</li> <li>use calf pad or panel to support residual limb</li> <li>avoid weight bearing on distal end of leg</li> </ul> <p>Above knee</p> <ul style="list-style-type: none"> <li>ensure pelvis is level</li> <li>increase pressure distribution for pelvis and thighs, as much as possible</li> </ul>	<ul style="list-style-type: none"> <li>distribute pressure</li> <li>comfort / reduced pain</li> <li>not to interfere with transfers</li> </ul>



# POSITIONING CHART

PROBLEM	POSSIBLE CAUSE	SUGGESTIONS FOR INTERVENTION	GOALS
<b>UPPER EXTREMITIES</b>			
<b>SHOULDER RETRACTION</b> <ul style="list-style-type: none"> <li>• often in conjunction with elbow flexion</li> </ul>	<ul style="list-style-type: none"> <li>• increased tone in scapular adductors or retractors</li> <li>• weakness of muscles in shoulder girdle with decreased ability to protract shoulder</li> <li>• “fixing” pattern to extend trunk against gravity, stabilize, or as a righting response</li> <li>• anxiety, startle</li> </ul>	<ul style="list-style-type: none"> <li>• build up posterior back support with wedges or increased foam behind scapular area</li> <li>• adjust tilt-in-space</li> <li>• strap forearms (trunk must be anteriorly supported)</li> <li>• provide stability elsewhere to break-up fixing pattern</li> </ul>	<ul style="list-style-type: none"> <li>• neutral alignment for function</li> <li>• reduce risk of injury (arms may get caught in doorways)</li> <li>• break-up fixing patterns for function</li> <li>• reduce neck hyperextension often seen in conjunction with scapular retraction</li> <li>• protect integrity of shoulder girdle</li> </ul>
<b>ELBOW EXTENSION</b> <ul style="list-style-type: none"> <li>• often in conjunction with shoulder horizontal abduction</li> </ul>	<ul style="list-style-type: none"> <li>• muscle imbalance</li> <li>• habitual pattern to laterally stabilize trunk</li> <li>• habitual pattern to extend trunk</li> <li>• ATNR</li> <li>• anxiety, startle</li> <li>• effort or stress</li> </ul>	<ul style="list-style-type: none"> <li>• pad attached to back cushion, armpad, or tray to block upper extremity laterally and/or posteriorly (limiting shoulder horizontal abduction)</li> <li>• strap forearms</li> </ul>	<ul style="list-style-type: none"> <li>• neutral alignment for function</li> <li>• reduce risk of injury (arms may get caught in doorways)</li> <li>• minimize orthopedic risks to elbow joint</li> <li>• break-up patterns of movement for function</li> </ul>
<b>UNCONTROLLED MOVEMENT OF UPPER EXTREMITIES</b>	<ul style="list-style-type: none"> <li>• increased tone due to effort</li> <li>• athetosis/dystonia</li> <li>• anxiety</li> </ul>	<ul style="list-style-type: none"> <li>• block or strapping to decrease movement</li> <li>• forearm weights</li> <li>• dynamic strapping to allow some movement but decreasing extraneous movement</li> <li>• distal stabilizer for independent grasp</li> </ul>	<ul style="list-style-type: none"> <li>• stabilization</li> <li>• reduce anxiety</li> <li>• to allow dependent tasks, such as feeding, to proceed</li> <li>• to protect client from injury</li> </ul>
<b>SELF-ABUSIVE BEHAVIOR</b>	<ul style="list-style-type: none"> <li>• self-abuse</li> <li>• self-stimulation</li> </ul>	<ul style="list-style-type: none"> <li>• same as uncontrolled movement interventions above</li> <li>• provide alternate sensory input, if appropriate</li> </ul>	<ul style="list-style-type: none"> <li>• to reduce risk of injury to client or others</li> <li>• to calm / reduce anxiety</li> </ul>
<b>SHOULDER SUBLUXATION OR DISLOCATION</b> Usually in conjunction with upper extremity weakness	<ul style="list-style-type: none"> <li>• decreased shoulder or upper extremity strength</li> <li>• paralysis</li> <li>• decreased muscle control</li> <li>• decreased tone</li> <li>• increased tone</li> <li>• postures that continually pull on humerus</li> </ul>	<ul style="list-style-type: none"> <li>• Upper Extremity Support System (tray)</li> <li>• widened armrests</li> <li>• arm trough</li> <li>• posterior or lateral elbow supports</li> <li>• forearm straps</li> <li>• dual shoulder straps crossing the clavicle and acromian processes</li> <li>• slings or mobile arm supports</li> </ul>	<ul style="list-style-type: none"> <li>• comfort / reduce pain</li> <li>• enhance functional use of arm</li> <li>• prevent further loss of integrity of shoulder girdle</li> </ul>

# POSITIONING CHART

PROBLEM	POSSIBLE CAUSE	SUGGESTIONS FOR INTERVENTION	GOALS
<b>HEAD</b>			
DECREASED OR NO HEAD CONTROL	<ul style="list-style-type: none"> <li>• decreased neck strength</li> <li>• hyperextension of neck in compensation for poor trunk control</li> <li>• forward tonal pull</li> <li>• visual impairment               <ul style="list-style-type: none"> <li>• vertical midline shift</li> <li>• cortical visual impairment (CVI)</li> <li>• blindness</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• posterior head support</li> <li>• providing only support at the neck may elicit increased neck extension and may not provide adequate surface area support, particularly in tilt</li> <li>• change pull of gravity against head by reclining or tilting seating system</li> </ul> <p>solutions for little or no head control:</p> <ul style="list-style-type: none"> <li>• forehead strap or pad</li> <li>• snug lateral supports</li> <li>• collars</li> <li>• chin support/orthosis</li> <li>• superior head support (Head Pod)</li> <li>• refer to behavioral optometrist, if appropriate</li> </ul>	<ul style="list-style-type: none"> <li>• visual attention to the environment, peers, etc.</li> <li>• improved swallow, feeding, breathing</li> <li>• increased function</li> <li>• elongation of neck extensors (if shortened by neck hyperextension)</li> <li>• capital flexion (e.g. “chin tuck”)</li> <li>• prevent subsequent orthopedic changes to neck and shoulder girdle</li> <li>• prevent overstretching of neck extensors and shortening of neck flexors (if head is usually hanging down)</li> </ul>
LATERAL NECK FLEXION NECK ROTATION	<ul style="list-style-type: none"> <li>• decreased neck strength</li> <li>• muscle imbalance/tone</li> <li>• ATNR</li> <li>• scoliosis</li> <li>• visual impairment, particularly a horizontal midline shift (lateral flexion)</li> <li>• Torticollis</li> </ul>	<ul style="list-style-type: none"> <li>• address scoliosis</li> <li>• lateral head support</li> <li>• posterior support with 3 point lateral control; either side of head and along jawline that is deviated laterally</li> <li>• custom molded headrest</li> <li>• horizontal tilt, if severe and if pressure over both ITs is in acceptable range</li> <li>• refer to behavioral optometrist, if appropriate</li> </ul>	<ul style="list-style-type: none"> <li>• prevent subsequent orthopedic changes to neck and shoulder girdle</li> <li>• right head for vision, feeding and respiratory status</li> </ul>