

## Severe spasticity

<b>Quality of tone</b>	<ol style="list-style-type: none"> <li>1. Severely increased tone.</li> <li>2. Constant flexor and extensor co-contraction.</li> <li>3. Tone is high at rest, sleep, or when awake.</li> <li>4. Tone pattern is more proximal than distal.</li> </ol>
<b>Distribution of tone</b>	<ol style="list-style-type: none"> <li>1. Quadriplegia, but may manifest as diplegia or paraplegia.</li> </ol>
<b>Range of motion</b>	<ol style="list-style-type: none"> <li>1. Abnormal patterns can lead to:             <ol style="list-style-type: none"> <li>a. Scoliosis.</li> <li>b. Kyphosis</li> <li>c. hip/knee/finger deformity.</li> </ol> </li> <li>2. Forearm pronation contracture.</li> <li>3. Hip subluxation, heel cord subluxation w/ equinovarus or equinovalgus.</li> <li>4. Decreased Trunk, shoulder, and pelvic girdle mobility.</li> <li>5. Limited mid-range control where co-contraction is least balanced.</li> </ol>
<b>Quality of movement</b>	<ol style="list-style-type: none"> <li>1. Decreased midrange, voluntary, and in voluntary movements.</li> <li>2. Slow and labored stereotypical movements.</li> </ol>
<b>Reflexes and reactions</b>	<ol style="list-style-type: none"> <li>1. Obligatory primitive reflexes (positive support, ATNR, STNR, neck righting).</li> <li>2. Protective, righting, and equilibrium reactions are often absent.</li> </ol>
<b>Oral motor</b>	<ol style="list-style-type: none"> <li>1. Immobile, rigid chest.</li> <li>2. Shallow respiration and forced expiration.</li> <li>3. Lip retraction w/ decreased lip closure.</li> <li>4. Tongue thrust.</li> <li>5. Communication through forced expiration.</li> </ol>
<b>Personality characteristics</b>	<ol style="list-style-type: none"> <li>1. Passive, dependent.</li> <li>2. Resistant and adapts poorly to change</li> <li>3. Anxious and fearful of being moved.</li> <li>4. Generally less frustrated than athetoid individuals.</li> </ol>

## Moderate spasticity

<b>Quality of tone</b>	<ol style="list-style-type: none"> <li>1. Moderately increased tone.</li> <li>2. Near normal at rest, but increases w/ excitement, movements attempts, effort, emotion, speech, sudden stretch.</li> <li>3. Agonists and distal muscles more spastic.</li> </ol>
<b>Distribution of tone</b>	<ol style="list-style-type: none"> <li>1. Quadriplegia, but may manifest as diplegia or paraplegia.</li> </ol>
<b>Range of motion</b>	<ol style="list-style-type: none"> <li>1. More available movement.</li> <li>2. More flexor/extensor imbalance can lead to:             <ol style="list-style-type: none"> <li>a. Kyphosis.</li> <li>b. Lordosis.</li> <li>c. hip subluxations.</li> <li>d. Hip and knee flexion contracture</li> </ol> </li> <li>3. Tight hip internal rotators and adductors.</li> <li>4. Heel cord shortening.</li> <li>5. Foot rotation.</li> </ol>
<b>Quality of movement</b>	<ol style="list-style-type: none"> <li>1. May be able to walk.</li> <li>2. Stereotypical, asymmetric, more associated reactions.</li> <li>3. Total movement synergies.</li> </ol>
<b>Reflexes and reactions</b>	<ol style="list-style-type: none"> <li>1. Strong primitive reflexes (MORO, startle, TNR,TLR, positive support prominent</li> <li>2. Decreased neck righting.</li> <li>3. Associated reactions strong.</li> <li>4. Righting may be present, but equilibrium reaction develops to sitting and kneeling.</li> </ol>
<b>Oral motor</b>	<ol style="list-style-type: none"> <li>1. Not as involved as in severe spasticity.</li> </ol>
<b>Personality characteristics</b>	<ol style="list-style-type: none"> <li>1. Lesser degree of traits seen in severe spasticity.</li> </ol>

## Mild spasticity

<b>Quality of tone</b>	<ol style="list-style-type: none"> <li>1. Mildly increased or normal tone at rest.</li> <li>2. Increases with effort, attempts to move.</li> </ol>
<b>Distribution of tone</b>	<ol style="list-style-type: none"> <li>1. Same as in severe spasticity but diplegia and hemiplegia more common.</li> </ol>
<b>Range of motion</b>	<ol style="list-style-type: none"> <li>1. Limitations more distal than proximal.</li> <li>2. Minimal deformities</li> </ol>
<b>Quality of movement</b>	<ol style="list-style-type: none"> <li>1. Often able to walk.</li> <li>2. Seems driven to move.</li> <li>3. Has increased variety of other movements, some stereotypical.</li> </ol>
<b>Reflexes and reactions</b>	<ol style="list-style-type: none"> <li>1. Primitive reflexes used for functional purposes and not obligatory.</li> <li>2. Righting, protective, and equilibrium reactions delayed but established.</li> <li>3. May not develop higher level reactions.</li> </ol>
<b>Oral motor</b>	<ol style="list-style-type: none"> <li>1. Increased mobility, thus more respiratory function for phonation.</li> <li>2. Shortness of breath limits sentence length.</li> <li>3. Better ability to dissociate mouth parts, but poor lip closure causes drooling</li> </ol>
<b>Personality characteristics</b>	<ol style="list-style-type: none"> <li>1. More frustrated and critical about self because of awareness of better performance.</li> <li>2. More patient than children of same age.</li> </ol>

## Pure athetosis

<b>Quality of tone</b>	<ol style="list-style-type: none"><li>1. Fluctuation of tone from low to normal.</li><li>2. No or little spasticity</li><li>3. No co-activation of flexors and extensors.</li></ol>
<b>Distribution of tone</b>	<ol style="list-style-type: none"><li>1. Quadriplegia with occasional hemiplegia</li></ol>
<b>Range of motion</b>	<ol style="list-style-type: none"><li>1. Transient subluxation of joints such as shoulders and fingers.</li><li>2. May have valgus on feet or knees</li><li>3. Rarely any deformities.</li></ol>
<b>Quality of movement</b>	<ol style="list-style-type: none"><li>1. Writhing involuntary movements, more distal than proximal.</li><li>2. No change with intention to move.</li><li>3. Many fixation attempts caused by decreased ability to stabilize.</li></ol>
<b>Reflexes and reactions</b>	<ol style="list-style-type: none"><li>1. Primitive reflexes not usually obligatory or evoked.</li><li>2. Protective and equilibrium reactions usually present, but involuntary movements affect grading.</li></ol>
<b>Oral motor</b>	<ol style="list-style-type: none"><li>1. Fluctuations adversely affect gross and fine motor performance.</li><li>2. Volume of speech may go up or down with breath.</li><li>3. Feeding may be decreased due to instability and tongue/ jaw/swallow incoordination.</li></ol>
<b>Personality characteristics</b>	<ol style="list-style-type: none"><li>1. Emotional lability.</li><li>2. Less fearful of movement.</li><li>3. More outgoing, but tends to be frustrated.</li></ol>

## Athetosis with spasticity

<b>Quality of tone</b>	<ol style="list-style-type: none"> <li>1. Fluctuates from normal to high.</li> <li>2. Some ability to stabilize proximally.</li> <li>3. Moderate proximal spasticity and distal athetosis.</li> </ol>
<b>Distribution of tone</b>	<ol style="list-style-type: none"> <li>1. Quadriplegia with occasional hemiplegia</li> </ol>
<b>Range of motion</b>	<ol style="list-style-type: none"> <li>1. Incidence of scoliosis.</li> <li>2. Some flexion deformities at hips, elbows, and knees.</li> <li>3. Usually full range of motion proximally and hyper mobile distally.</li> </ol>
<b>Quality of movement</b>	<ol style="list-style-type: none"> <li>1. Decreased ability to grade movements.</li> <li>2. Decreased midline control and selective movement.</li> <li>3. Proximal stability and distal choreoathetosis.</li> <li>4. Varies with case</li> </ol>
<b>Reflexes and reactions</b>	<ol style="list-style-type: none"> <li>1. TNR/TLR strong but intermittent and modified by involuntary movements.</li> <li>2. Equilibrium reactions, when present, unreliable and may or may not be used.</li> </ol>
<b>Oral motor</b>	<ol style="list-style-type: none"> <li>1. Difficulty w/ head control, thus decreased oral motor, strained speech.</li> <li>2. Decreased coordination of suck/swallow, resulting in decreased feeding and speech</li> </ol>
<b>Personality characteristics</b>	<ol style="list-style-type: none"> <li>1. Same as in athetosis</li> </ol>

## Athetosis with tonic spasm

<b>Quality of tone</b>	<ol style="list-style-type: none"> <li>1. Unpredictable tone changes from low to very high.</li> <li>2. Either all flexion or extension of extremities.</li> </ol>
<b>Distribution of tone</b>	<ol style="list-style-type: none"> <li>1. Quadriplegia, hemiplegia, or monoplegia.</li> </ol>
<b>Range of motion</b>	<ol style="list-style-type: none"> <li>1. More pronounced scoliosis.</li> <li>2. More dislocation of arm because of flailing spasm.</li> <li>3. Possible kyphoscoliosis, hip or skull dislocation.</li> <li>4. Possible Flexion contracture on hips/knees.</li> <li>5. Possible subluxation of Hip, fingers, or lower jaw.</li> </ol>
<b>Quality of movement</b>	<ol style="list-style-type: none"> <li>1. Extreme tonic spasm without voluntary control.</li> <li>2. Some involuntary movement, distal more than proximal.</li> </ol>
<b>Reflexes and reactions</b>	<ol style="list-style-type: none"> <li>1. Strong ATNR, STNR, TLR.</li> <li>2. Protective and equilibrium reactions absent during spasm, otherwise present, unreliable, or absent.</li> </ol>
<b>Oral motor</b>	<ol style="list-style-type: none"> <li>1. Feeding may be difficult because aspiration is unpredictable.</li> <li>2. Severe language and speech impairment caused by decreased control.</li> </ol>
<b>Personality characteristics</b>	<ol style="list-style-type: none"> <li>1. Same as athetosis</li> </ol>

## choreoathtosis

<b>Quality of tone</b>	<ol style="list-style-type: none"><li>1. Constant fluctuations from low to high with no co-contraction.</li><li>2. Jerky movements more proximal than distal.</li></ol>
<b>Distribution of tone</b>	<ol style="list-style-type: none"><li>1. Quadriplegia</li></ol>
<b>Range of motion</b>	<ol style="list-style-type: none"><li>1. Many involuntary movements with extreme ranges but no control at midrange.</li><li>2. Deformities rare, but tendency for shoulder and finger subluxation.</li></ol>
<b>Quality of movement</b>	<ol style="list-style-type: none"><li>1. Wide movement range with no gradation.</li><li>2. Jerky movements more proximal than distal.</li><li>3. No selective movement or flexion of movement.</li><li>4. Weak hands and fingers</li></ol>
<b>Reflexes and reactions</b>	<ol style="list-style-type: none"><li>1. Intermittent TNR.</li><li>2. Righting and equilibrium reactions present to some extent, but abnormal coordination.</li><li>3. Abnormal upper extremity protective extension possible, but often absent.</li></ol>
<b>Oral motor</b>	<ol style="list-style-type: none"><li>1. Facial grimaces, dysarthria, irregular breathing, difficulty sustaining phonation.</li><li>2. Poor intraoral and extraoral surfaces.</li></ol>
<b>Personality characteristics</b>	<ol style="list-style-type: none"><li>1. Same as athetosis</li></ol>

# Flaccidity

<b>Quality of tone</b>	<ol style="list-style-type: none"><li>1. Fluctuating, markedly low muscle tone.</li><li>2. Seen at birth or toddler initially classified as flaccid, later classified as spastic, athetoid, or ataxic.</li></ol>
<b>Distribution of tone</b>	<ol style="list-style-type: none"><li>1. Quadriplegia</li></ol>
<b>Range of motion</b>	<ol style="list-style-type: none"><li>1. Hypermobility joints that tend to subluxate.</li><li>2. Flat chest</li><li>3. Range limitations due to limited movement</li></ol>
<b>Quality of movement</b>	<ol style="list-style-type: none"><li>1. Ungraded movements.</li><li>2. Slow movements difficulty</li><li>3. Many static postures, as if hanging on to anatomic structures instead of active control.</li></ol>
<b>Reflexes and reactions</b>	<ol style="list-style-type: none"><li>1. Usually less reactive because of decreased tone.</li><li>2. Righting is delayed.</li><li>3. Delayed protective extension more available than equilibrium</li></ol>
<b>Oral motor</b>	<ol style="list-style-type: none"><li>1. Quiet, soft voice because of decreased respiration.</li><li>2. Delayed speech.</li><li>3. Increased drooling.</li><li>4. Often expressionless face.</li></ol>
<b>Personality characteristics</b>	<ol style="list-style-type: none"><li>1. Visually attentive cannot move, therefore is "good" baby</li><li>2. Decreased motivation.</li></ol>



# Ataxia

<b>Quality of tone</b>	<ol style="list-style-type: none"> <li>1. Ranges from near normal to normal.</li> <li>2. Increased tone, when present usually involves lower extremity flexion.</li> </ol>
<b>Distribution of tone</b>	<ol style="list-style-type: none"> <li>1. Quadriplegia</li> </ol>
<b>Range of motion</b>	<ol style="list-style-type: none"> <li>1. Range usually not a problem.</li> <li>2. Decreased range, when present, usually in flexion.</li> </ol>
<b>Quality of movement</b>	<ol style="list-style-type: none"> <li>1. Lacks point of stability, therefore co-activation is difficult.</li> <li>2. Uses primitive rather than abnormal patterns hence gross, total patterns.</li> <li>3. Incoordination, thus             <ol style="list-style-type: none"> <li>a. dysmetria</li> <li>b. disdiadochokinesia</li> <li>c. tremors at rest</li> <li>d. symmetric problems</li> </ol> </li> </ol>
<b>Reflexes and reactions</b>	<ol style="list-style-type: none"> <li>1. May develop righting reactions, but these are uncoordinated, exaggerated, and poorly used.</li> <li>2. Equilibrium reactions, when developed, are not coordinated.</li> <li>3. Needs wide base of support because of poor weight shifting.</li> </ol>
<b>Oral motor</b>	<ol style="list-style-type: none"> <li>1. Speech s monotone, and very slow.</li> <li>2. Uses teeth to stabilize tongue or hold cup to mouth when drinking.</li> <li>3. Decreased articulation.</li> </ol>
<b>Personality characteristics</b>	<ol style="list-style-type: none"> <li>1. Does not like to move</li> </ol>