

Evaluation and Treatment of Trunk Instability and
Proximal Weakness / Spasticity in MS

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Evaluation

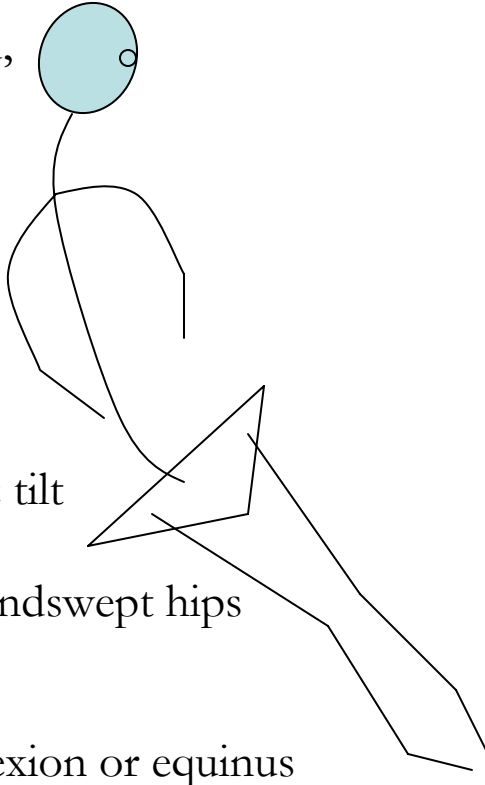
Seated Posture:

Extensor Synergy Spasticity

vs

Normalized Tone

Reversal of cervical
Lordosis;
Protracted head,
shoulders

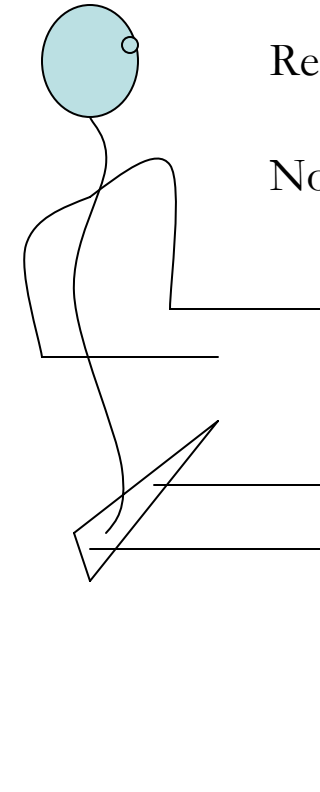


Reversal of
lumbar lordosis

Posterior Pelvic tilt

Adducted or windswept hips

Ankle plantarflexion or equinus



Retracted shoulders

Normal spinal curvature

Anterior Pelvic Tilt

Neutral hip
and ankle
position

Spasticity: Modified Ashworth Scale

Score	Criteria
0	No increase in tone
1	Slight increase in tone (catch and release at end of ROM)
1+	Slight increase in tone, manifested by a catch, followed by minimal resistance throughout remainder (less than half of the ROM)
2	Marked increase in tone through most of ROM, but affected part(s) easily moved
3	Considerable increase in tone; passive movement difficult
4	Affected part(s) rigid in flexion or extension

(Bohannon & Smith, 1987)

Considerations For Modified Ashworth Exam

- Tone is velocity-dependent
 - use quick motions
- Tone is position-dependent
 - keep consistent
- Tone fatigues
 - use first few repetitions to score
- Test in pure planes of motion
- Assess in the patient's available ROM
- Evaluator should be consistent

Spasticity: Modified Ashworth Scale

- LE Muscle Groups typically assessed:
 - Hip adductors
 - Knee flexors
 - Knee extensors
 - Ankle plantarflexors
 - Hip extensors (??)

Assessing True Hip Flexion

- True Hip Flexion PROM
- Stabilize pelvis in best corrected position
- Flex the hip
- When pelvis begins to rock – Stop!
- Do not position



Case #1 – J.T.

- 51 year old male w/ RRMS
- Berg: 29/56
- 25' walk: 22.24 sec w/ rollator; TUG: 33.43 sec, wears L AFO
- Seated MDRT: fwd=11", bkwd=9.5", R lat=12", L lat=11"
- Standing Reach Test: 6.5"
- c/o unstable gait w/ falls, Seated MDRT: fwd=7.5", bkwd=2.5", R lat=4", L lat=4"
- difficulty dressing due to dec sitting balance (donning shirts), proximal weakness

Case #1: J.T.

- Insert treatment video of J.T.....

Case #2: MKH

- 58 year old w/ SPMS, non-ambulatory, transfers with sliding board with max assist yet still falls backwards every 3-4 transfers.
- Berg: 2/56
- Trunk strength: 2-/5 in flexors, extensors, and rotators.
- Seated MDRT: fwd=7.5", bkwd=2.5", R lat=4", L lat=4"
- Her goal is to transfer with mod assist to make it easier for husband (caregiver). Mechanical lifts are declined.
- Seated MDRT: fwd=7.5", bkwd=2.5", R lat=4", L lat=4"

- Insert MKH treatment video...
(clinical DVD#5)

Case #3: GS

- 68 year old male w/ RRMS, spastic triplegia
- Berg: 20/56
- 25' walk: 56.75 sec w/ rollator; TUG: 76.0 sec, wears R AFO
- MAS: R: pf 3, ke 3, kf 2, ha 2; L: 2,2,2,2
- Seated MDRT: fwd=15", bkwd=7", R lat=5", L lat=3"
- Standing Reach Test: 2"
- Strength:
 - RLE Hip flex 0, Hip ext 2+, knee flex 1+, knee ext 4+, ankle DF 0
 - LLE Hip flex 4+, Hip ext 3+, knee flex 3+, knee ext 5, ankle DF 4
 - Trunk flex 3-, ext 3+
- c/o unstable gait w/ falls, minimally ambulatory, and uses w/c primarily. Unstable riding in a car, unable to bend to grab seatbelt.
- difficulty w/ bed mobility due to trunk weakness and spasticity. sitting balance (donning shirts), proximal weakness
- Goals: "stability in car seat, walk safely at home short distances, independent bed mobility".

Case #3: GS

- Insert Treatment video...

Case #3: GS

- Insert Gait video with and without Hip Flexion Assist Orthosis...