SFMA (SELECTIVE FUNCTIONAL MOVEMENT ASSESSMENT)

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INTRO TO THE SFMA

Objectives

- Determine if the subject is appropriate for the SFMA
- Understand the purpose of the SFMA Top Tier and Breakouts
- Understand how to properly administer the SFMA Top Tier
- Understand how to score the SFMA Top Tier
- Understand how to properly interpret the SFMA Top Tier
- Be able to correctly order breakouts

What is the SFMA?

- It is a comprehensive assessment used to identify injury inducing movement patterns and provides the clinician with a road map for treating injury.
- Its looking at how your mind and body work together to make movement patterns without a fitness LOAD.
- When we find a dysfunctional pattern: we break it down – we take the patient from a loaded position (standing) to an unloaded position (non-WB) we are able to determine whether this is a structural or functional problem.
- Breaking the pattern down allows us to determine whether it is a mobility problem (structural) versus a functional motor control problem (timing, sequencing, coordination, synergy)
- It helps identify **CAUSE** and not just the **SOURCE**
  - **Source –** tissue or patho-anatomical structure that is believed to cause the symptoms
  - **Cause –** kinesiological or mechanical factors/movement impairment that causes tissue irritation

Principles of SFMA

- **Principle #1:** Move well and Move often
- **Principle #2:** Protect. Correct. Develop.
- **Principle #3:** Create systems to protect our principles. The SFMA provides a user-friendly checklist and path for guiding proper treatment

Key Concepts

Alter Motor Control

Neurodevelopmental Perspective

Regional Interdependence

Grading in the SFMA

Function

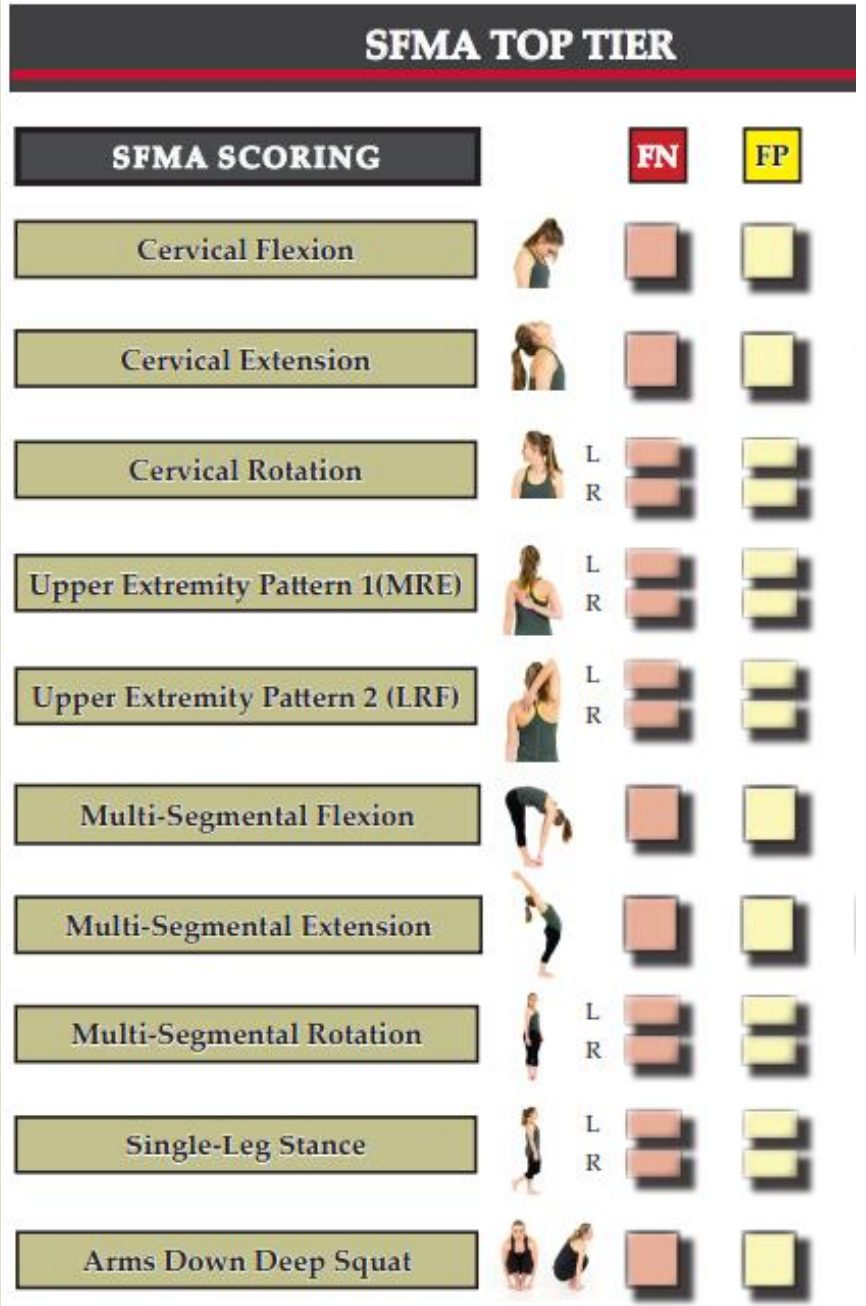
- **Functional** = Meets defined standards **("F")**
- **Dysfunctional** = does not meet defined standards **("D")**

Pain

- **Non-painful** = No increase in pain due to the movement/ position; pain unchanged or decreased **("N")**
- **Painful** = Increase in pain due to movement/ position; often coordinate sign **("P")**

Breaking out from Top Tier

- **Red Light =** Do not proceed further **(FN)**
- **Yellow Light =** Proceed with caution **(DP or FP, secondary area).** MUST breakout these patterns.
- **Green Light =** Proceed with further breakout **(DN, primary area).** Treat at their terminal points.



TOP TIER

Objectives

- Understand Top Tier criteria
- Understand how to grade Top Tier movement
- Be able to grade Top Tier movements

Active Cervical Flexion

- Functional Criteria
  - Touch chin to sternum
  - Uniform curve
  - No excessive effort and/or lack of motor control

  - Is the movement painful?

Active Cervical Extension

- Functional Criteria
  - Within 10 degrees of parallel
  - Uniform curve
  - No excessive effort and/or lack of motor control

  - Is the movement painful?

Cervical Rotation Bend

- Functional Criteria (R & L)
  - Nose in line with mid-clavicle
  - No excessive effort and/or appreciable asymmetry or lack of motor control
  - Is the movement painful?

Upper Extremity Pattern 1 (MRE)

- Functional Criteria (R & L)
  - Able to reach inferior angle of scapula
  - No scapular winging
  - No excessive effort and/or appreciable asymmetry or lack of motor control

  - Is the movement painful?

Upper Extremity Pattern 2 (LRF)

- Functional Criteria
  - Able to reach spine of scapula
  - No scapular winging
  - No excessive effort and/or appreciable asymmetry or lack of motor control

  - Is the movement painful?

Multi-Segmental Flexion

- Functional Criteria
  - Can touch toes
  - Sacral angle ≥ 70 degrees
  - Uniform spinal curve
  - Presence of posterior weight shift
  - No excessive effort and/or appreciable asymmetry or lack of motor control

  - Is the movement painful?

Multi-Segmental Extension

- Functional Criteria
  - UE achieves and maintains 170 degrees shoulder flexion
  - ASIS clears toes
  - Spine of scapula clears heels
  - Uniform spinal curve
  - No excessive effort and/or lack of motor control

  - Is the movement painful?

Multi-Segmental Rotation

- Functional Criteria (R & L)
  - Pelvis rotation ≥ 50 degrees
  - Torso rotation ≥ 50 degrees
  - No excessive effort and/or lack of symmetry or motor control

  - Is the movement painful?

Single Leg Stance

- Functional Criteria (R & L)
  - Eyes open ≥ 10 seconds
  - Eyes closed ≥ 10 seconds
  - No loss of height
  - No excessive effort or lack of symmetry or motor control

  - Is the movement painful?

Arms Down Deep Squat

- Functional Criteria
  - Hips able to break parallel
  - Can reach fists to ground within footprint
  - No loss of sagittal plane alignment: Right:____ Left:____
  - No excessive effort, weight shift, or lack of motor control

  - Is the movement painful?

BREAKOUTS FROM TOP TIER

Objectives

- To be able to explain the reasoning behind the sequence and each test in each different breakout

SFMA Breakouts

- Appropriate for painful and non-painful patients
- Assesses basic functional mobility
- Based on progressively eliminating possibilities in a deductive reasoning fashion
- Low threshold functional movement assessment
- Binary scoring:
  - Functional vs. Dysfunctional
  - Non-painful vs. Painful

Breakout Logic

1. It removes body parts
2. It changes stability requirements
3. Active vs. Passive

CERVICAL FLEXION BREAKOUT

Active Supine Cervical Flexion Test (ASCF)

- **Standard:** chin touches sternum without pain or compensation
- **Grading:**
  - **FN:** Indicates a postural SMCD affecting cervical flexion. This includes cervical spine, thoracic spine, and shoulder girdle postural dysfunction.
  - **DN, DP or FP:** Continue to Passive Supine Cervical Flexion Test.

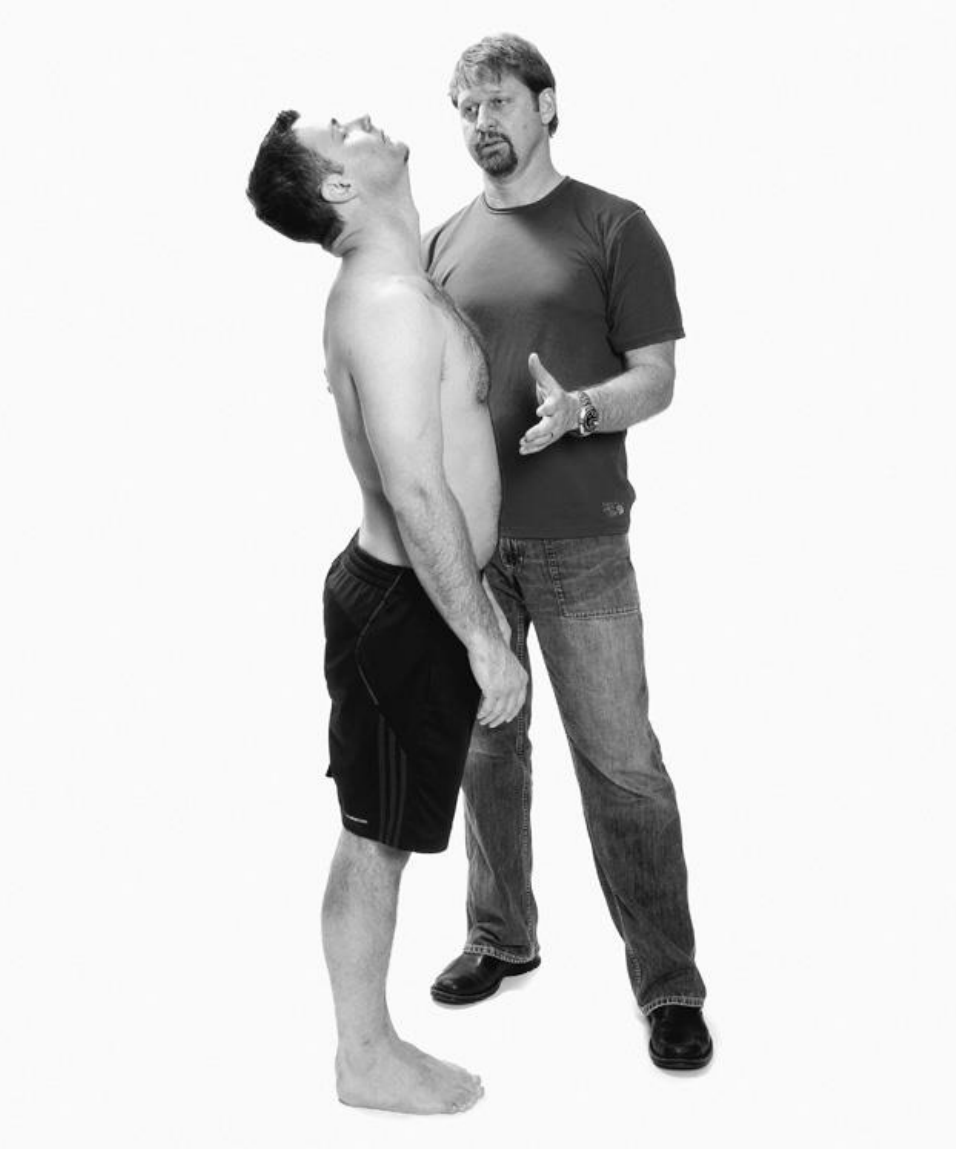
Passive Supine Cervical Flexion Test (PSCF)

- **Standard:** chin touches chest without pain or compensation
- **Grading:**
  - **FN:** Indicates an active cervical spine flexion SMCD
  - **DN:** May indicate a cervical flexion mobility problem, however, we need to rule out the occiput-atlas
  - **DN, DP or FP:** Continue to Active Supine OA Cervical Flexion Test.

Active Supine OA Cervical Flexion Test

- **Standard:** At least 20 degrees of OA flexion bilaterally
- **Grading:**
  - **FN Bilat:** If PSCF was DP or DN, treat as cervical spine flexion MD. If PSCF was FP perform cervical examination.
  - **DN:** OA Flexion MD and possible cervical spine flexion MD.
  - **DP or FP:** Stop and treat cervical pain.

CERVICAL EXTENSION BREAKOUT



Supine Cervical Extension Test

- **Standard:** Face perpendicular to the ground
- **Grading:**
  - **DN:** Cervical extension MD.
  - **FN:** Indicates a postural SMCD affecting cervical extension. This includes cervical spine, thoracic spine, and shoulder girdle postural dysfunction.
  - **DP or FP:** Stop and treat cervical pain

CERVICAL ROTATION BREAKOUT

Active Supine Cervical Rotation Test

- **Standard:** 80 degrees of cervical rotation bilaterally
- **Grading:**
  - **FN:** Indicates a postural SMCD affecting cervical rotation. This includes cervical spine, thoracic spine, and shoulder girdle postural dysfunction.
  - **DN, DP or FP:** Continue to Passive Supine Cervical Rotation Test

Passive Supine Cervical Rotation Test

- **Standard:** 80 degrees of cervical rotation bilaterally
- **Grading:**
  - **FN:** Indicates an active cervical spine rotation SMCD.
  - **DN, DP or FP:** Continue to Active Supine AA Cervical Flexion Test

Supine AA Cervical Rotation Test

- **Standard:** 40 degrees of AA rotation bilaterally
- **Grading:**
  - **FN Bil:** If PSCR was DP or DN, treat as LOWER cervical spine rotation. If PSCR was FP perform cervical examination.
  - **DN:** AA Rotation MD and possible LOWER cervical spine rotation MD.
  - **DP or FP:** Stop and treat cervical pain.

UPPER EXTREMITY PATTERN 1 BREAKOUT

Active/Passive Lumbar Locked (IR) Ext/Rot Test

- **Standard:** Thoracic rotation ≥ 50 degrees.
- **Grading:**
  - **Active**
    - **FN:** Rules out T-spine as a problem, now must rule out rest of UE pattern 1
    - **DN, DP or FP:** Must complete Passively to determine whether it is a stability problem or a mobility problem.
  - **Passive**
    - **FN:** Thoracic ext/rot SMCD. Must continue onto Active prone UE pattern 1
    - **DP or FP:** Thorax ext/rot pain/Dysfunction. Make a note and continue to Active UE pattern 1.
    - **DN:** Thorax ext/rot MD. Must continue onto Active prone UE pattern 1.

Active Prone Upper Extremity Pattern One

- **Standard:** Touching inferior angle of scapula
- **Grading:**
  - **FN:** If thorax is normal and UE Pattern is normal, we assume a postural and/or shoulder girdle SMCD. Otherwise treat thorax findings.
  - **DN, DP or FP:** Continue to Passive Prone Upper Extremity Pattern One

Passive Prone Upper Extremity Pattern One

- **Standard:** Touching inferior angle of scapula
- **Grading:**
  - **FN:** If thorax was normal assume a postural and/or shoulder girdle SMCD. Otherwise – just treat thorax findings.
  - **DN, DP or FP:** Continue to Active Prone Shoulder 90/90 Internal Rotation Test

Active Prone Shoulder 90/90 Internal Rotation Test

- **Standard:** Internal rotation ≥ 60 degrees or total arc of 150 degrees
- **Grading:**
  - **FN:** This rules out an IR problem. Continue to Active Shoulder Extension Test.
  - **DN, DP or FP:** Continue to Passive Prone Shoulder 90/90 Internal Rotation Test

Passive Prone Shoulder 90/90 Internal Rotation Test

- **Standard:** Internal rotation ≥ 60 degrees or total arc of 150 degrees
- **Grading:**
  - **FN:** Shoulder internal rotation SMCD is present. Continue to Active Prone Shoulder Extension Test
  - **DN:** Shoulder internal rotation MD. Continue to Active Prone Shoulder Extension Test
  - **DP or FP:** Treat shoulder pain. Continue to Active Prone Shoulder Extension Test

Active Prone Extension Test

- **Standard:** Extension ≥ 50 degrees
- **Grading:**
  - **FN:** Rules out a shoulder extension problem. Continue to Active Prone Elbow Flexion Test
  - **DN, DP or FP:** Continue to Passive Prone Shoulder Extension Test

Passive Prone Shoulder Extension Test

- **Standard:** Extension ≥ 50 degrees
- **Grading:**
  - **FN:** Shoulder extension SMCD is present. Continue to Active Prone Elbow Flexion Test.
  - **DN:** Shoulder extension MD. Continue to Active Prone Elbow Flexion Test.
  - **DP or FP:** Treat shoulder pain. Continue to Active Prone Elbow Flexion Test.

Active Prone Elbow Flexion Test

- **Standard:** Touch shoulder with thumb
- **Grading:**
  - **FN:** Consider the elbow normal. If there are no previous findings, consider this a combined UE pattern 1 dysfunction.
  - **DN, DP or FP:** Continue to Passive Prone Elbow Flexion Test

Passive Prone Elbow Flexion Test

- **Standard:** Touch shoulder with thumb
- **Grading:**
  - **FN:** Elbow flexion SMCD is present
  - **DN:** Elbow flexion MD
  - **DP or FP:** Treat elbow pain.

UPPER EXTREMITY PATTERN 2 BREAKOUT

Active/Passive Lumbar Locked (IR) Ext/Rot Test

- **Standard:** Thoracic rotation ≥ 50 degrees.
- **Grading:**
  - **Active**
    - **FN:** Rules out T-spine as a problem, now must rule out rest of UE pattern 2
    - **DN, DP or FP:** Must complete Passively to determine whether it is a stability problem or a mobility problem.
  - **Passive**
    - **FN:** Thoracic ext/rot SMCD. Must continue onto Active prone UE pattern 2
    - **DP or FP:** Thorax ext/rot pain/Dysfunction. Make a note and continue to Active UE pattern 1.
    - **DN:** Thorax ext/rot MD. Must continue onto Active prone UE pattern 2.

Active Prone Upper Extremity Pattern Two

- **Standard:** Touching spine of scapula
- **Grading:**
  - **FN:** If thorax was normal assume a postural and/or shoulder girdle SMCD. Otherwise – just treat thorax findings.
  - **DN, DP or FP:** Continue to Passive Prone Upper Extremity Pattern Two

Passive Prone Upper Extremity Pattern Two

- **Standard:** Touching spine of scapula
- **Grading:**
  - **FN:** If thorax was normal assume a postural and/or shoulder girdle SMCD. Otherwise – just treat thorax findings
  - **DN, DP or FP:** Continue to Active Prone Shoulder 90/90 External Rotation Test

Active Prone Shoulder 90/90 External Rotation Test

- **Standard:** External rotation ≥ 90 degrees or total arc of 150 degrees
- **Grading:**
  - **FN:** Continue to Active Shoulder Flexion Abduction Test
  - **DN, DP or FP:** Continue to Passive Prone Shoulder 90/90 External Rotation Test.

Passive Prone Shoulder 90/90 ER Test

- **Standard:** External rotation ≥ 90 degrees or total arc of 150 degrees
- **Grading:**
  - **FN:** Shoulder external rotation SMCD is present. Continue to Active Prone Shoulder Flexion Abduction Test
  - **DN:** Shoulder external rotation MD. Continue to Active Prone Shoulder Flexion Abduction Test
  - **DP or FP:** Treat shoulder pain. Continue to Active Prone Shoulder Flexion Abduction Test

Active Prone Shoulder Flexion Abduction Test

- **Standard:** Flexion ≥ 170 degrees
- **Grading:**
  - **FN:** Continue to Active Prone Elbow Flexion Test
  - **DN, DP or FP:** Continue to passive Prone Shoulder Abduction Test

Passive Prone Shoulder Flexion Abduction Test

- **Standard:** Flexion ≥ 170 degrees
- **Grading:**
  - **FN:** Shoulder flexion abduction SMCD is present. Continue to Active Prone Elbow Flexion Test.
  - **DN:** Shoulder flexion abduction MD. Continue to Active Prone Elbow Flexion Test.
  - **DP or FP:** Treat shoulder pain. Continue to Active Prone Elbow Flexion Test.

Active Prone Elbow Flexion Test

- **Standard:** Touch shoulder with thumb
- **Grading:**
  - **FN:** Consider the elbow normal. If there are no previous findings, consider this a combined UE Pattern 2 dysfunctiona
  - **DN, DP or FP:** Continue to Passive Prone Elbow Flexion Test

Passive Prone Elbow Flexion Test

- **Standard:** Touch shoulder with thumb
- **Grading:**
  - **FN:** Elbow flexion SMCD is present
  - **DN:** Elbow flexion MD is present
  - **DP or FP:** Treat elbow pain/dysfunction

MULTI-SEGMENTAL FLEXION BREAKOUT

Long Sitting

- **Standard:** Patient touches toes, uniform spinal curve, sacral angle ≥ 80 degrees
- **Grading:**
  - **FN:** Weight Bearing Hip Flexion SMCD
  - **DN, DP or FP:** Continue to Active Straight Leg Raise

Active Straight Leg Raise

- **Standard:** Active Straight leg raise ≥ 70 degrees
- **Grading:**
  - **FN:** This clears hip flexion and HS so Continue to Prone Rocking Test
  - **DN, DP or FP:** Continue to STABILIZED Straight Leg Raise Test.

Stabilized ASLR Test (70 degrees)

- **Standard:** maintain core engagement, neutral ankle, SLR > 70 degrees
- **Grading:**
  - **FN:** Core (Pelvic Orientation) SMCD
  - **DN, DP or FP:** Continue to Passive SLR

Passive Straight Leg Raise

- **Standard:** ≥ 80 degrees, stop when you feel tension
- **Grading:**
  - **FN:** Active hip flexion SMCD. Continue to Prone Rocking test.
  - **DN, DP or FP:** Continue to Supine Knees to Chest Holding Thighs

Supine Knee to Chest

- **Standard:** Thighs are against abdomen/chest – approximately 120 degrees
- **Grading:**
  - **FN:** Rules out the hip joint, so this leaves a posterior chain MD or if PSLR was FP, it could be an Active Hip flexion SMCD.
  - **DN:** Hip Flexion (joint) MD and potential posterior chain MD
  - **DP or FP:** Hip Flexion Pain Dysfunction. Continue to Prone Rocking Test.

Prone Rocking

- **Standard:** Uniform spinal curve
- **Grading:**
  - **FN:** If the spine had a non-uniform curvature in any previous test, this a WB Spine Flexion SMCD.
  - **DN:** Spinal Flexion MD
  - **DP or FP:** Spine Flexion Pain/Dysfunction

MULTI-SEGMENTAL EXTENSION BREAKOUT – SPINE/UPPER BODY

Press Up

- **Standard:** ASIS should not come off the table more than 2-1/2 inches, looking for a uniform spinal curve
- **Grading:**
  - **FN:** This rules out the spine. Active Prone Shoulder Girdle Flexion Test (170 degrees)
  - **DN, DP or FP:** Continue to Lumbar Locked (Internal Rotation) – Active Extension/ Rotation test

Active/Passive Lumbar Locked (IR) Ext/Rot Test

- **Standard:** Thoracic rotation ≥ 50 degrees.
- **Grading:**
  - **Active**
    - **FN:** Continue to Active Prone on Elbow Unilateral Extension/ Rotation test.
    - **DN, DP or FP:** Must complete Passively to determine whether it is a stability problem or a mobility problem.
  - **Passive**
    - **FN:** Thoracic ext/rot SMCD. Must continue onto Active Prone on Elbow Unilateral Ext/Rot Test.
    - **DN:** Thorax ext/rot MD. Must continue onto Active Prone Shoulder Girdle Flexion Test.
    - **FP:** Thorax Ext/Rot SMCD with pain. Continue to Active Prone on Elbow Ext/Rot test (30 degrees)
    - **DP:** Thorax Ext/Rot MD with Pain. Continue to Active Prone Shoulder Girdle Flexion Test.

Active Prone on Elbow Unilateral Ext/Rot

- **Standard:** ≥ 30° of rotation, no pelvis rotation
- **Grading:**
  - **FN:** If Thoracic was normal, consider this a WB Spine Extension SMCD or Anterior Torso MD. If there were any previous findings, consider lumbar normal. Continue to Active prone shoulder girdle flexion test
  - **DN, DP or FP:** Continue to Passive Prone on Elbow Unilateral Extension/Rotation test.

Passive Prone on Elbow Unilateral Ext/Rot

- **Standard:** ≥ 30° of rotation
- **Grading:**
  - **FN:** Lumbar Extension/Rot SMCD
  - **DN:** Lumbar Extension/Rotation MD
  - **DP or FP:** Treat Lumbar extension/rotation pain/Dysfunction

Active Prone Shoulder Girdle Flexion Test (170 degrees)

- **Standard:** 170 degrees flexion
- **Grading:**
  - **FN:** Shoulder Girdle Flexion is Normal – Go to Lower Body Extension Flowchart
  - **DN, DP or FP:** Complete a passive prone shoulder girdle Flexion Test

Passive Prone Shoulder Girdle Flexion Test (170)

- **Standard:** 170 degrees flexion
- **Grading:**
  - **FN:** Shoulder girdle flexion SMCD – go to lower body extension flowchart
  - **DN:** Shoulder Girdle Flexion MD – Go to lower body extension flowchart
  - **DP or FP:** shoulder girdle flexion pain/dysfunction – go to lower body extension flowchart

MULTI-SEGMENTAL EXTENSION BREAKOUT – LOWER BODY

FABER Test

- **Standard:** Knee is within two of patient's fist widths from the table
- **Grading:**
  - **FN:** Continue to Modified Thomas test
  - **DN, DP or FP:** Continue to stabilized FABER test

Stabilized FABER Test

- **Standard:** Knee is within two of patient's fist widths from the table
- **Grading:**
  - **FN:** Core (Pelvic Orientation) SMCD. Continue to Modified Thomas test.
  - **DN:** Hip/SI MD
  - **FP or DP:** Hip Extension Pain/Dysfunction

Modified Thomas Test

- **Standard:** Leg lowers to table with thigh touching table, 90° knee flexion, and no abduction from neutral.
- **Grading:**
  - **FN:** If FABER was DN, DP or FP then stop and treat FABER
  - **DN:** Hip Extension MD
  - **DP or FP:** Treat Hip Extension Pain

Prone Active Hip Extension

- **Standard:** ≥ 10° hip extension
- **Grading:**
  - **FN:** If spine extension was dysfunctional, then consider hip normal. If not there is a Weight Bearing Hip/Spine Extension SMCD and/or Ankle Mobility Dysfunction (refer to ADDS & SLS
  - **DN, DP or FP:** Continue to Prone Passive Hip Extension test

Prone Passive Hip Extension

- **Standard:** ≥ 10° hip extension
- **Grading:**
  - **FN:** Core SMCD and/or Active Hip Extension SMCD
  - **DN:** Hip Extension MD
  - **DP or FP:** Treat Hip Pain/Dysfunction

MULTI-SEGMENTAL ROTATION BREAKOUT – SPINE

Seated Rotation

- **Standard:** ≥ 50° of spinal rotation
- **Grading:**
- **Bilateral FN:** Go to Lower quarter external rotation Flowchart
- **DN, DP or FP:** Continue to Active Lumbar Locked (Internal Rotation) Extension/Rotation test

Active/Passive Lumbar Locked (IR) Ext/Rot Test

- **Standard:** Thoracic rotation ≥ 50 degrees.
- **Grading:**
  - **Active**
    - **FN:** Continue to Active Prone on Elbow Unilateral Extension/ Rotation test.
    - **DN, DP or FP:** Must complete Passively to determine whether it is a stability problem or a mobility problem.
  - **Passive**
    - **FN:** Thoracic ext/rot SMCD. Must continue onto Active Prone on Elbow Unilateral Ext/Rot Test.
    - **DN:** Thorax ext/rot MD. Must continue onto Lower quarter ER flowchart
    - **FP:** Thorax Ext/Rot SMCD with pain. Continue to Active Prone on Elbow Ext/Rot test (30 degrees)
    - **DP:** Thorax Ext/Rot MD with Pain. Continue to Lower quarter ER flowchart

Active Prone on Elbow Unilateral Ext/Rot

- **Standard:** ≥ 30° of rotation, no pelvis rotation
- **Grading:**
  - **FN:** If Thoracic was normal, consider this a WB Spine Extension SMCD or Anterior Torso MD. If there were any previous findings, consider lumbar normal. Continue to Lower quarter ER flowchart
  - **DN, DP or FP:** Continue to Passive Prone on Elbow Unilateral Extension/Rotation test.

Passive Prone on Elbow Unilateral Ext/Rot

- **Standard:** ≥ 30° of rotation
- **Grading:**
  - **FN:** Lumbar Extension/Rot SMCD. Continue to lower quarter ER flowchart
  - **DN:** Lumbar Extension/Rotation MD. Continue to lower quarter ER flowchart
  - **DP or FP:** Treat Lumbar extension/rotation pain/Dysfunction. Go to lower quarter ER flowchart.

MULTI-SEGMENTAL ROTATION BREAKOUT – LE ER

Prone Active Hip ER

- **Standard:** ≥ 40° external rotation
- **Grading:**
  - **FN:** rules out Hip ER. Continue onto active seated external tibial rotation test (20 degrees)
  - **DN, DP or FP:** Continue to Stabilized Prone External Hip Rotation.

Stabilized Prone Hip ER

- **Standard:** ≥ 40° external rotation
- **Grading:**
  - **FN:** Core (Pelvic Orientation) SMCD
  - **DN, DP or FP:** Continue to Passive Prone External Hip Rotation Test

Prone Passive Hip ER

- **Standard:** ≥ 40° external rotation
- **Grading:**
- **FN:** WB or Active External Hip Rotation SMCD
- **DN:** External Hip Rotation MD
- **DP or FP:** Treat Hip Pain and continue to Active Seated External Tibial Rotation Test (20)

Active Tibial ER Test (20 degrees)

- **Standard:** ≥ 20° tibial external rotation
- **Grading:**
  - **FN:** External Tibial Rotation is normal. Go to lower quarter IR
  - **DN, DP or FP:** Complete passively

Passive Tibial ER Test (20 degrees)

- **Standard:**
- **Grading:**
  - **FN:** External Tibial Rotation SMCD – Go to lower quarter IR
  - **DN:** External Ti bial Rot MD – go to IR flowchart
  - **DP or FP:** External Tibial Rot pain/dysfunction – go to lower quarter IR Flowchart

MULTI-SEGMENTAL ROTATION BREAKOUT – LE IR

Prone Active Hip IR (30 degrees)

- **Standard:** ≥ 30° internal rotation
- **Grading:**
  - **FN:** rules out hip IR problem. Check active seated internal tibial rotation.
  - **DN, DP or FP:** Continue to Stabilized Prone Internal Hip Rotation Test (30

Stabilized Prone Hip IR

- **Standard:** ≥ 30° Internal hip rotation
- **Grading:**
  - **FN:** Core (Pelvic Orientation) SMCD. Continue to Seated Internal Tibial Rotation Test
  - **DN, DP or FP:** Continue to Passive Prone Internal Hip Rotation Test

Prone Passive Hip IR

- **Standard:** ≥ 30° internal rotation
- **Grading:**
- **FN:** WB or Active Internal Hip Rotation SMCD
- **DN:** Internal Hip Rotation MD
- **FP or DP:** Internal Hip Rot Pain/Dysfunction

Active Tibial IR

- **Standard:** ≥ 20° tibial internal rotation
- **Grading:**
  - **FN:** Tibial internal rotation mobility is normal. If no previous signs of rotation dysfunction consider WB Rotation SMCD.
  - **DN, DP or FP:** Continue to Seated Passive Internal Tibial Rotation test

Passive Tibial IR

- **Standard:** ≥ 20° tibial internal rotation
- **Grading:**
  - **FN:** Tibial Internal Rotation SMCD.
  - **DN:** Internal Tibial Rot MD
  - **DP or FP:** Treat Tibial Pain.

SINGLE LEG STANCE BREAKOUT – VESTIBULAR & CORE

Vestibular Test – mCTSIB (Static Head)

- **Standard:** 20 seconds with no excessive postural sway or loss of balance for all conditions. Feet approximately pelvic width apart. A 50% increase in sway is normal from condition 1 to condition 2.
- **Grading:**
  - **FN:** Continue to CTSIB (Dynamic Head Movement)
  - **DN, DP or FP:** Potential Static Vestibular Dysfunction. Continue to Half Kneeling Narrow Base test.

Vestibular Test – mCTSIB (Dynamic Head)

- **Standard:** No excessive postural sway or loss of balance for all conditions at a rate of 1 second per repetition of movement (up to 50% is normal)
- **Grading:**
  - **FN:** Continue to Half Kneeling Narrow Base test.
  - **DN, DP or FP:** Potential Dynamic Vestibular Dysfunction. Continue to Half Kneeling Narrow Base test.

Half Kneeling Narrow Base

- **Standard:** Hold position for 10 seconds on both sides.
- **Grading:**
  - **FN:** Consider half kneeling normal Go to Single Leg Stance Ankle Breakout.
  - **DN, DP or FP:** Continue to Quadruped Diagonals test.

Quadruped Diagonals

- **Standard:** Hold for three seconds bilaterally
- **Grading:**
  - **FN:** Weight-Bearing Spine and/or Core SMCD. If Hip Extension is DN treat it first. Go to Single Leg Stance Ankle Breakout.
  - **DN:** Weight-Bearing Hip and/or Core SMCD. If Hip Extension and/or Shoulder Flexion are DN treat them first. Go to Single Leg Stance Ankle Breakout.
  - **DP or FP:** Quadruped Stability Pain/Dysfunction – go to SLS ankle flowchart

SINGLE LEG STANCE BREAKOUT – ANKLE

Active Tandem Dorsiflexion – Knee Extended Test

- **Standard:** Can the patient get their toe off the ground keeping the leg straight.
- **Grading:**
  - **FN:** Rules out a Dorsiflexion problem. Continue on to check plantarflexion.
  - **DN, DP, or FP:** Check passive prone dorsiflexion – knee extended Test (20 degrees)

Passive Prone Dorsiflexion – Knee Extended Test

- **Standard:** Patient is able to demonstrate a minimum of 20° of dorsiflexion
- **Grading:**
  - **FN:** Dorsiflexion SMCD. Continue on to test plantarflexion
  - **DN:** Dorsiflexion MD. Continue on to test plantarflexion
  - **DP or FP:** Treat Dorsiflexion Pain/Dysfunction. Continue on to check plantarflexion

Active Tandem Plantarflexion Test

- **Standard:** 40 degrees of plantarflexion
- **Grading:**
  - **FN:** Rules out a plantarflexion problem. Continue onto Inversion
  - **DN, DP or FP:** Check plantarflexion passively in prone

Prone Passive Plantar Flexion

- **Standard:** Patient is able to demonstrate a minimum of 40° of plantar flexion.
- **Grading:**
  - **FN:** Plantarflexion SMCD. Continue on to check inversion and eversion
  - **DN:** Plantar Flexion MD. Continue on to check inversion and eversion
  - **DP or FP:** Treat Pain. Continue to Active Ankle Inversion/Eversion test.

Active Seated Ankle Inversion/ Eversion

- **Standard:** Patient should be able to perform motion without moving hips and knees.
- **Grading:**
  - **FN:** Rules out inversion/eversion. If no Green boxes so far = Proprioceptive Deficit.
  - **DN, DP or FP:** Continue to Passive Ankle Inversion/Eversion.

Passive Ankle Inversion/Eversion

- **Standard:** Should be able to smoothly move ankle through motion
- **Grading:**
  - **FN:** Ankle Inversion/Eversion SMCD. Perform local Ankle/Foot Exam.
  - **DN:** Ankle Inversion/Eversion MD
  - **DP or FP:** Treat Pain

ARMS DOWN DEEP SQUAT BREAKOUT

Active Tandem Dorsiflexion – Knee Flexed Test

- **Standard:** 40 degrees Dorsiflexion
- **Grading:**
  - **FN:** Clears DF. Go on to check ankle inversion/eversion
  - **DN, DP or FP:** Continue to Passive Prone DF Test – knee flexed Test (30 degrees)

Passive Prone Dorsiflexion – Knee Flexed Test

- **Standard:** 30 degrees Dorsiflexion
- **Grading:**
  - **FN:** Dorsiflexion SMCD. Continue to check ankle inversion/eversion
  - **DN:** Dorsiflexion MD. Continue to check ankle inversion/eversion
  - **DP or FP:** Dorsiflexion Pain/Dysfunction

Active Seated Ankle Inversion/ Eversion

- **Standard:** Patient should be able to perform motion without moving hips and knees.
- **Grading:**
  - **FN:** Rules out inversion/eversion. Continue onto check hip and knee mobility.
  - **DN, DP or FP:** Need to check Ankle Inversion/Eversion Passively

Passive Ankle Inversion/Eversion

- **Standard:** Should be able to smoothly move ankle through motion
- **Grading:**
  - **FN:** Ankle Inversion/Eversion SMCD. Continue on to test hip and knee flexion
  - **DN:** Ankle Inversion/Eversion MD. Continue on to test hip and knee flexion
  - **DP or FP:** Treat Pain. Continue on to test hip and knee flexion

Supine Knees to Chest Holding Shins

- **Standard:** Thighs are against abdomen/chest with hip and knees fully flexed
- **Grading:**
  - **FN:** continue to active seated IR
  - **DN, DP or FP:** Continue to Supine Knees To Chest Holding Thighs test.

Supine Knees to Chest Holding Thighs

- **Standard:** Thighs are against abdomen/chest
- **Grading:**
  - **FN:** Knee flexion MD
  - **DN:** Hip flexion MD and possible knee flexion MD
  - **DP or FP:** Hip flexion pain/dysfunction

Seated Active Hip IR

- **Standard:** ≥ 30° internal rotation
- **Grading:**
  - **FN:** Continue to Active External Hip Rotation
  - **DN, DP or FP:** Check rotation passively

Seated Passive Hip IR

- **Standard:** ≥ 30° internal rotation
- **Grading:**
  - **FN:** Hip SMCD for Internal Rotation with Hip Flexed. Continue to Prone Active External Hip Rotation
  - **DN:** Hip MD for Internal Rotation with Hip Flexed. Continue to External Hip Rotation
  - **DP or FP:** Treat Hip IR Pain. Continue to check ER

Seated Active Hip ER

- **Standard:** ≥ 40° external rotation
- **Grading:**
  - **FN:** If no previous findings – WB Ankle, Knee and/or Hip SMCD and/or Normal Anatomical Variances
  - **DN, DP or FP:** Continue to Seated Passive External Hip Rotation test

Seated Passive Hip ER

- **Standard:** ≥ 40° external rotation
- **Grading:**
  - **FN:** Active External Hip Rotation SMCD with hip flexed
  - **DN:** External Hip Rotation MD with hip flexed
  - **DP or FP:** External Hip Rotation Pain/Dysfunction