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INTENSIVE OSTEOPATHIC UPDATE

Virtual

Basic OMT Modality Review

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A.T. Still on Modalities

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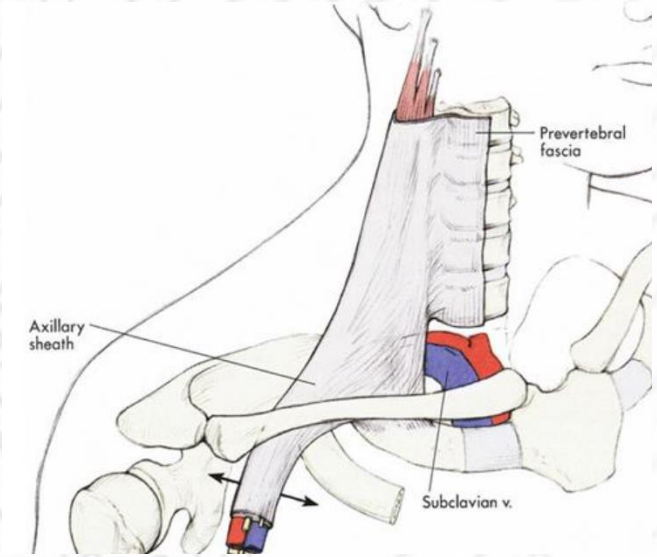
"The choice of methods is a matter to be decided by each operator and depends on his own skill and judgement…It is not a matter of imitation and doing just as some successful operator does, but the bringing of the bone from the abnormal to the normal." - Osteopathy Research and Practice

Basic OMT Modality Review
Learning Objectives

- Identify somatic dysfunction and general indications and contraindications for OMM
- Explain how manipulation targets specific tissues
- Understand the importance of a tissue's range of motion and inherent biomechanics
- Apply the concept of localizing to the Direct or Indirect barrier
- Understand how modalities are defined by their unique steps/activation forces

Somatic Dysfunction and OMT



Foundations of Osteopathic Medicine Figure 4.6

- Somatic dysfunction = impaired/altered tissues
  - Skeletal, **Arthrodial, Myofascial** -> Neuro, Vascular, Lymphatic
- Indication:
  - SD is present
  - Contributor of the patient's complaints
- Contraindications:
  - No somatic dysfunction
  - Patient declines
  - Other modality indicated

Common OMT Modalities

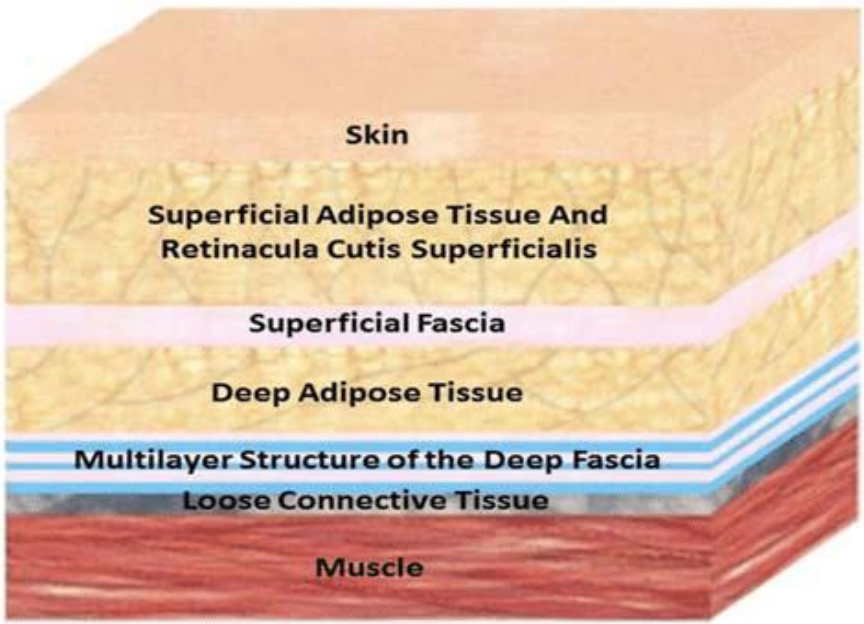
- Soft Tissue
- Counterstrain
- Myofascial Release
- Muscle Energy Technique
- Articular Technique
- High Velocity Low Amplitude
- Balanced Ligamentous Tension
- Facilitated Positional Release
- Still Technique

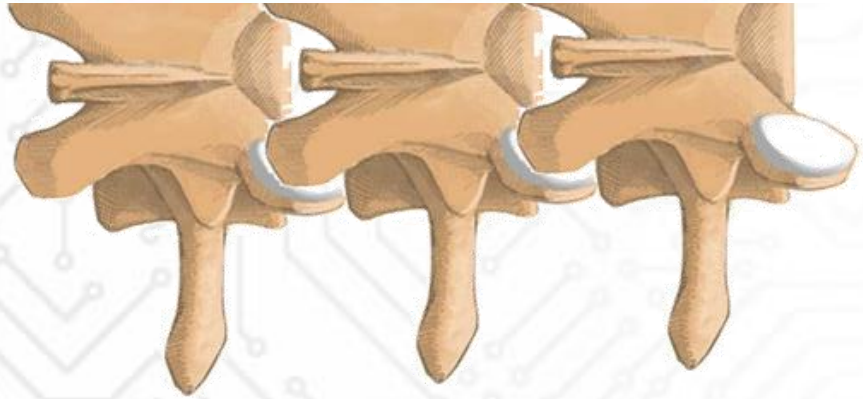
OMM Modalities
In a nutshell…

1. Localize to a target tissue
2. Move to the Direct or Indirect barrier
3. Apply activating force

1. Localize to a target tissue

Superficial





Deep

1. Localize to a target tissue

- Define modality target
  - Myofascial
  - Arthrodial
- Manipulation requires accurate palpation of structure
  - Proper region
  - Proper level of pressure (depth)
  - Leverage
    - Physician/patient position

1. Localize to a target tissue
Localizing to Myofascial

- Myofascial modalities
  - Soft Tissue (ST)
  - Counterstrain (CS)
  - Myofascial Release (MFR)

- Related biomechanics
  - Muscles: origin and insertions
    - Somatic Dysfunction (SD): Hypertonic Muscles
  - Fascia: no specific biomechanics, intrinsic to musculoskeletal system
    - SD: Twisted, Restricted, Tight
    - SD: fascia gliding preference

1. Localize to a target tissue
Localizing to Arthrodial

Arthrodial Modalities

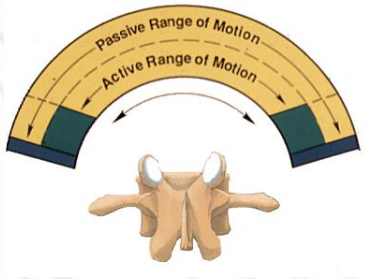
- Muscle Energy Technique (MET)
- Articular Technique (ART)
- High Velocity Low Amplitude (HVLA)
- Balanced Ligamentous Tension (BLT)
- Facilitated Positional Release (FPR)
- Still Technique

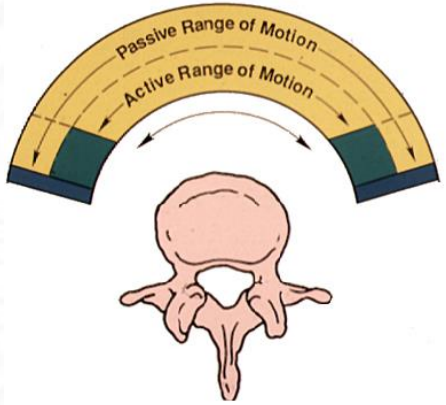
- Related biomechanics
  - Range of motion
    - SD = loss of ROM
  - Coupled motions
    - SD = loss within these motions

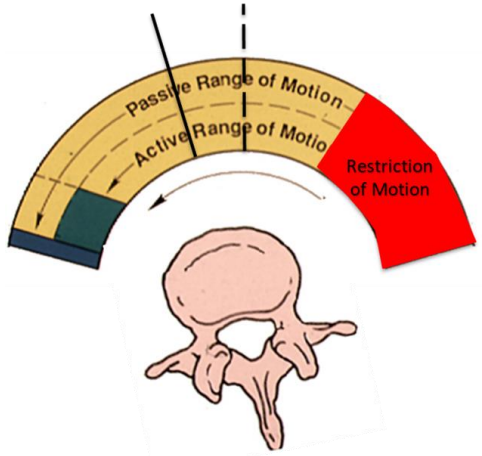
1. Localize to a target tissue
Biomechanics are key!

Thoracic Example

1. Normal Range of motions
   - Flex/Ext, rotation, sidebending
   - Somatic dysfunctions present as loss of range of motion



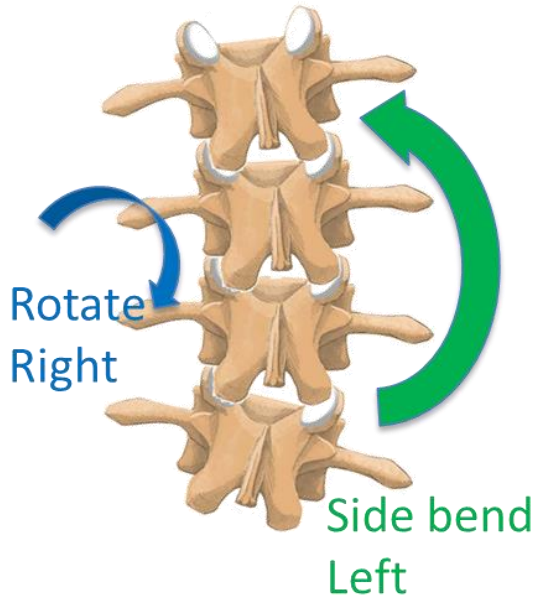


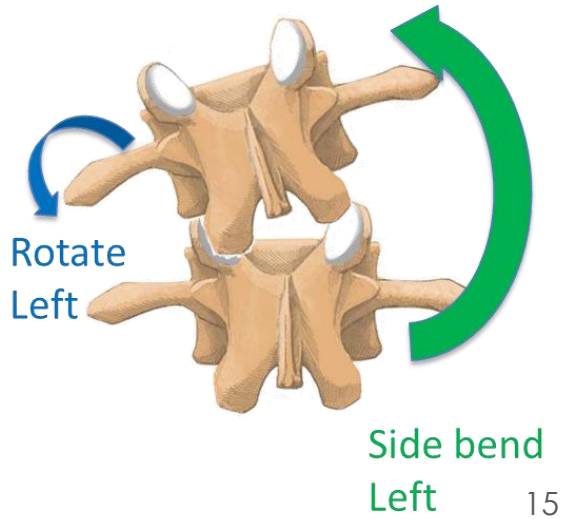


1. Localize to a target tissue
Biomechanics are key!

Thoracic Example

1. Coupled biomechanics
   - Type 1 mechanic:
     - Group vertebrae
     - Neutral
     - Rotate/Sidebend opposite
   - Type 2 mechanic:
     - Single vertebrae
     - Flex/extend
     - Rotate/Sidebend same





1. Localizing to Target tissue/somatic dysfunction Review

Atlas of Osteopathic Techniques Figure 7.13

Atlas of Osteopathic Techniques Figure 10.32

- Ensuring palpation of target tissue
  - Region
  - Level of pressure (depth)
- Understand specific biomechanics
  - Myofascial:
    - Muscles: insertion and origins
    - Fascia: no specific biomechanics (glide)
  - Arthrodial: ROM and coupled motions
- Change patient or physician position for leverage

Common OMT Modalities

Modalities	Target Tissue
Soft Tissue	Myofascial
Counterstrain	Myofascial
Myofascial Release	Myofascial
Muscle Energy	Articular
Articular	Articular
High Velocity Low Amplitude	Articular
Balanced Ligamentous Tension	Articular
Facilitated Positional Release	Articular
Still Technique	Articular

2. Move to the Direct or Indirect barrier

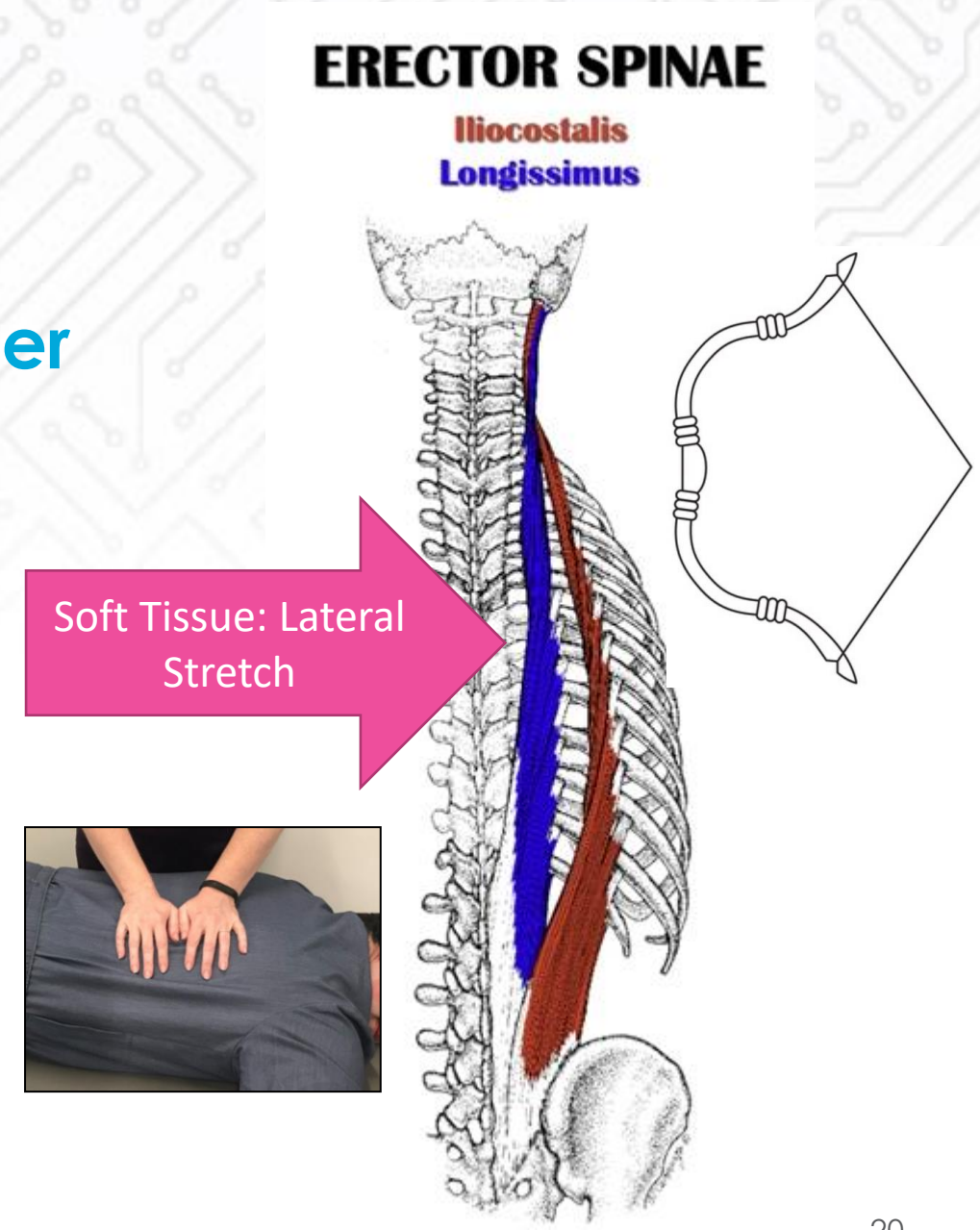
2. Move to the Direct or Indirect barrier
The Barriers

- Most critical step!
  - Triggers tissue relaxation and change
  - Specific palpatory sensation
- Direct barrier
  - Restrictive barrier
  - Direction SD does not want to go
  - Palpatory sensation: Tighten/stiffening (Bind)
- Indirect barrier
  - Balance Point/Point of Ease
  - Position SD prefers
  - Palpatory sensation: Softening/relaxing (Ease)

2. Move to the Direct or Indirect barrier
Myofascial Barriers

Modality: Soft Tissue

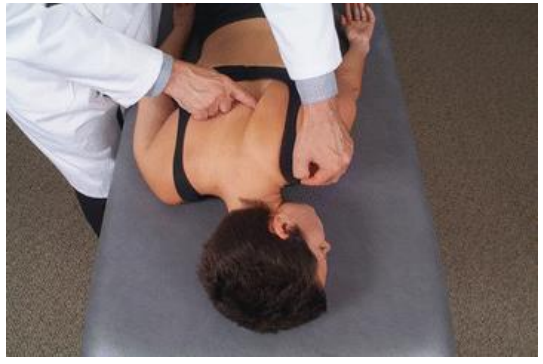
- lengthening muscles (**direct barrier**)

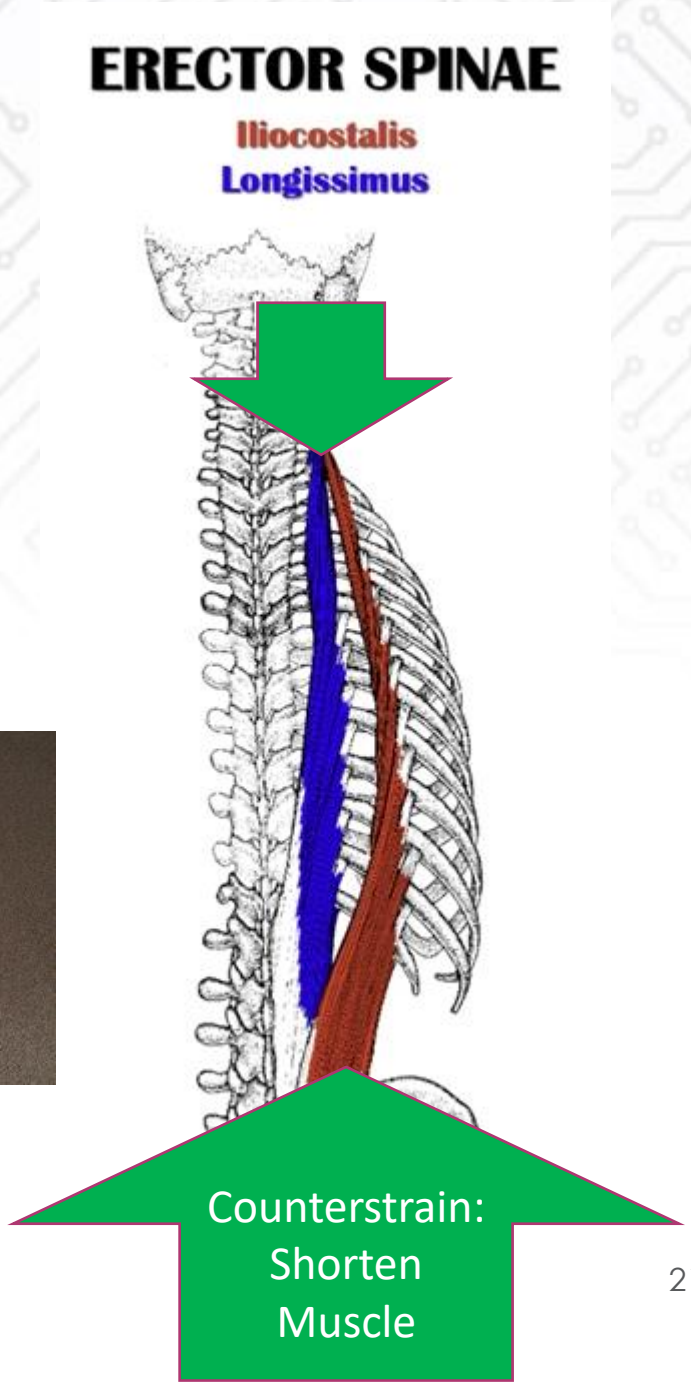


2. Move to the Direct or Indirect barrier
Myofascial Barriers

Modality: Counterstrain

- Shortening muscles (**indirect barrier**)

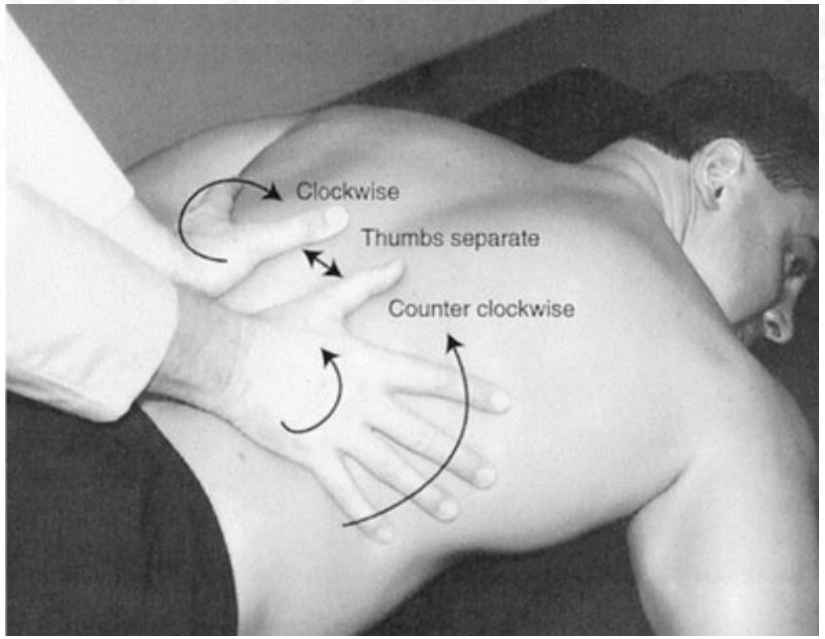




2. Move to the Direct or Indirect barrier
Myofascial Barriers

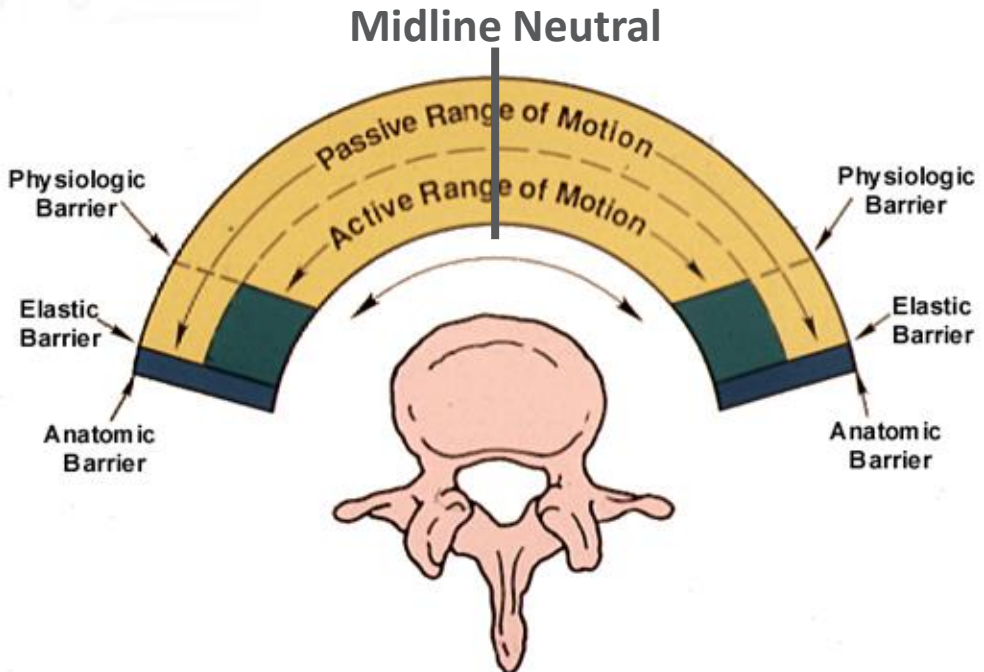
Modality: Myofascial Release

- Gathers the fascia to place tension into it **(direct barrier)**
- Relax it as much as possible **(indirect barrier)**
  - Stack multiple gliding planes

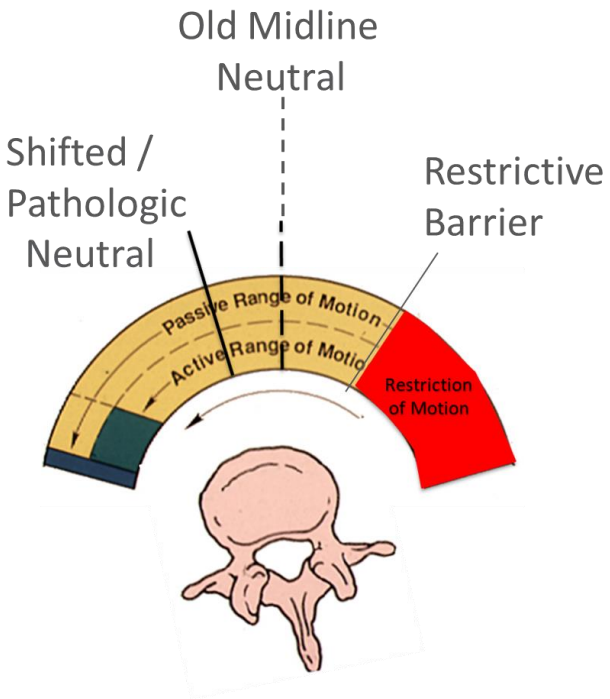


2. Move to the Direct or Indirect barrier
Arthrodial Barriers

- Midline Neutral: center of range of motion
- Active ROM -> physiologic barrier
- Passive ROM -> elastic barrier
- Passing anatomic barrier produces injury



2. Move to the Direct or Indirect barrier Dysfunctional Arthrodial Range of Motion



Thoracic Somatic Dysfunction Example

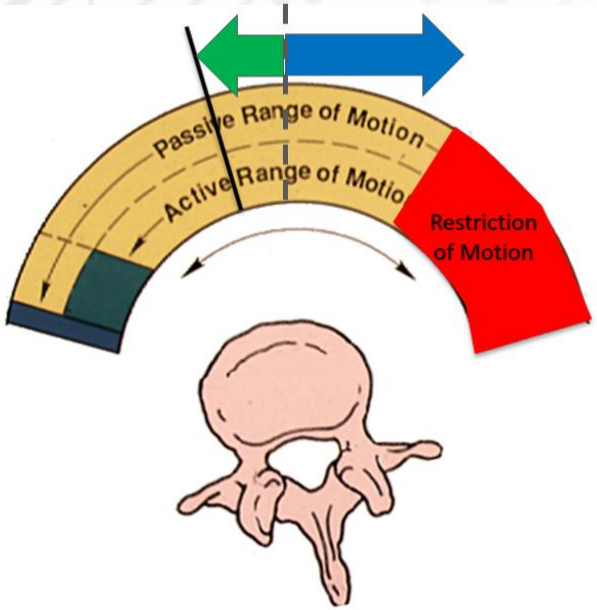
T3 Left Rotated

- Restrictive/Pathologic Barrier
  - loss of range of motion
  - reflexive muscle spasm
  - Direct Barrier
- Left Rotated Somatic Dysfunction
  - Shifted/Pathologic Neutral: new midline
  - Indirect Barrier

2. Move to the Direct or Indirect barrier
Bind versus Ease

Thoracic Somatic Dysfunction Example

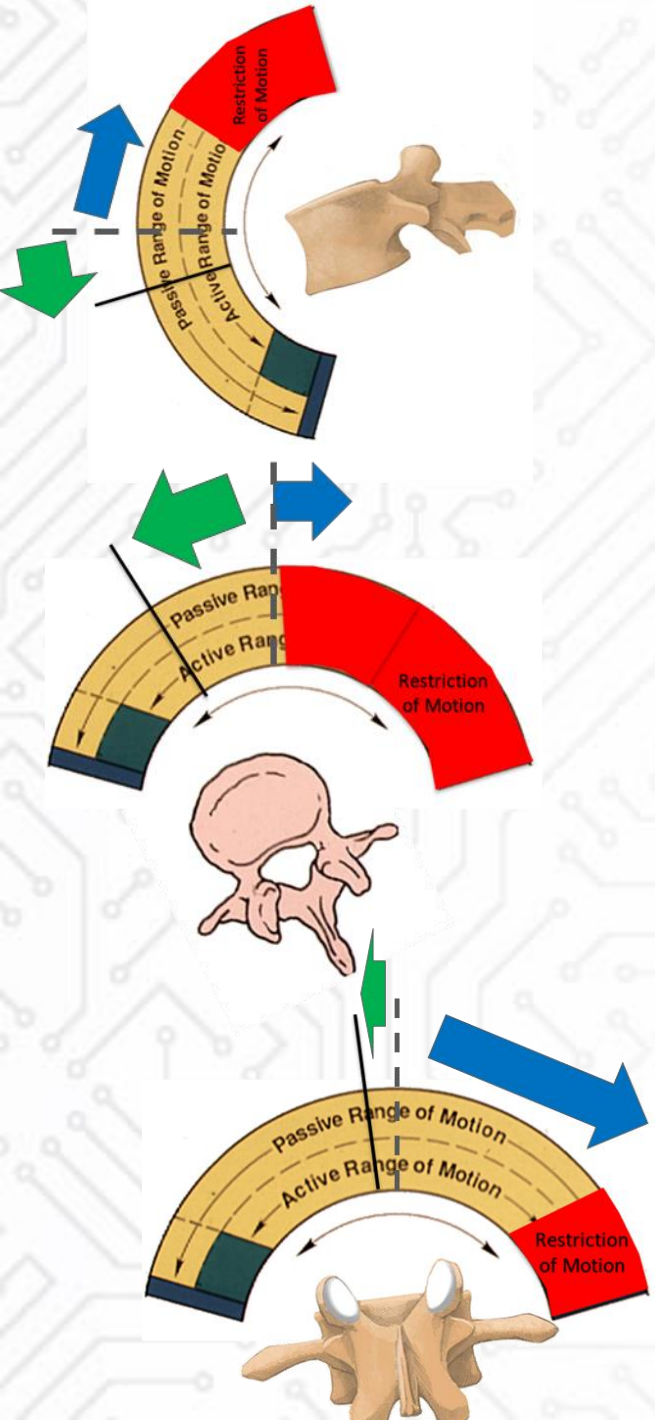
T3 Left Rotated



Starting at old midline neutral

- Bind: Toward Restrictive/Direct Barrier
  - Muscle Energy Techniques
  - Articulatory
  - High Velocity Low Amplitude
- Ease: Toward Pathologic Midline/Indirect Barrier
  - Balanced Ligamentous Tension
  - Facilitated Positional Release
  - Still Technique

Atlas of Osteopathic Techniques Figure 10.32



2. Move to the Direct or Indirect barrier
Stacking Barriers

Thoracic Somatic Dysfunction Example

T3 Flexed Rotated Left Sidebend Left (type 2)

- Direct Barrier: E Rr Sr
- Indirect Barrier: F Rl Sl

Stacking

- Add each plane mindfully
  - Barrier is unique in each plane
- More planes stacked = Better barrier
  - Faster effective treatment

2. Move to the Direct or Indirect Barrier Review

- Myofascial Modalities
  - Soft tissue = Lengthen muscle to direct barrier
  - Counterstrain = Shorten structures to indirect barrier
  - Myofascial = Tense or Relax Fascia (direct or indirect)
- Arthrodial Modalities
  - MET, ART, HVLA- Stack restricted ROM in all planes
  - BLT, FPR, Still -Stack up Pathologic Midline in all planes
  - **ROM loss can be unique in each plane**

Common OMT Modalities

Modalities	Target Tissue	Direct/Indirect
Soft Tissue	Myofascial	Direct
Counterstrain	Myofascial	Indirect
Myofascial Release	Myofascial	Direct or Indirect
Muscle Energy	Articular	Direct
Articular	Articular	Direct
High Velocity Low Amplitude	Articular	Direct
Balanced Ligamentous Tension	Articular	Indirect
Facilitated Positional Release	Articular	Indirect
Still Technique	Articular	Indirect

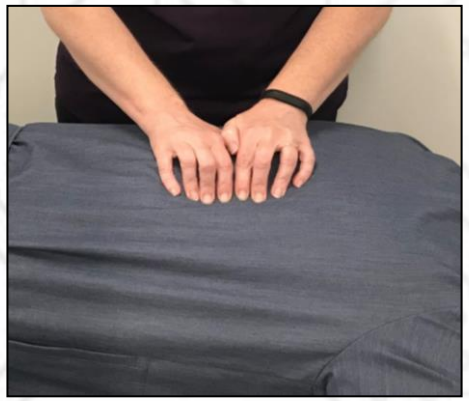
3. Apply an activating force

Activating forces = Different Modalities

3. Apply an activating force
Examples- Right sided upper back pain

- Myofascial Somatic Dysfunction Diagnosis
  - Soft Tissue- **Right hypertonic paraspinal muscles**
  - Counterstrain- **(PT 7 TP tenderpoint)**
  - Fascial- **Flexed Rotated Right Sidebend Left**

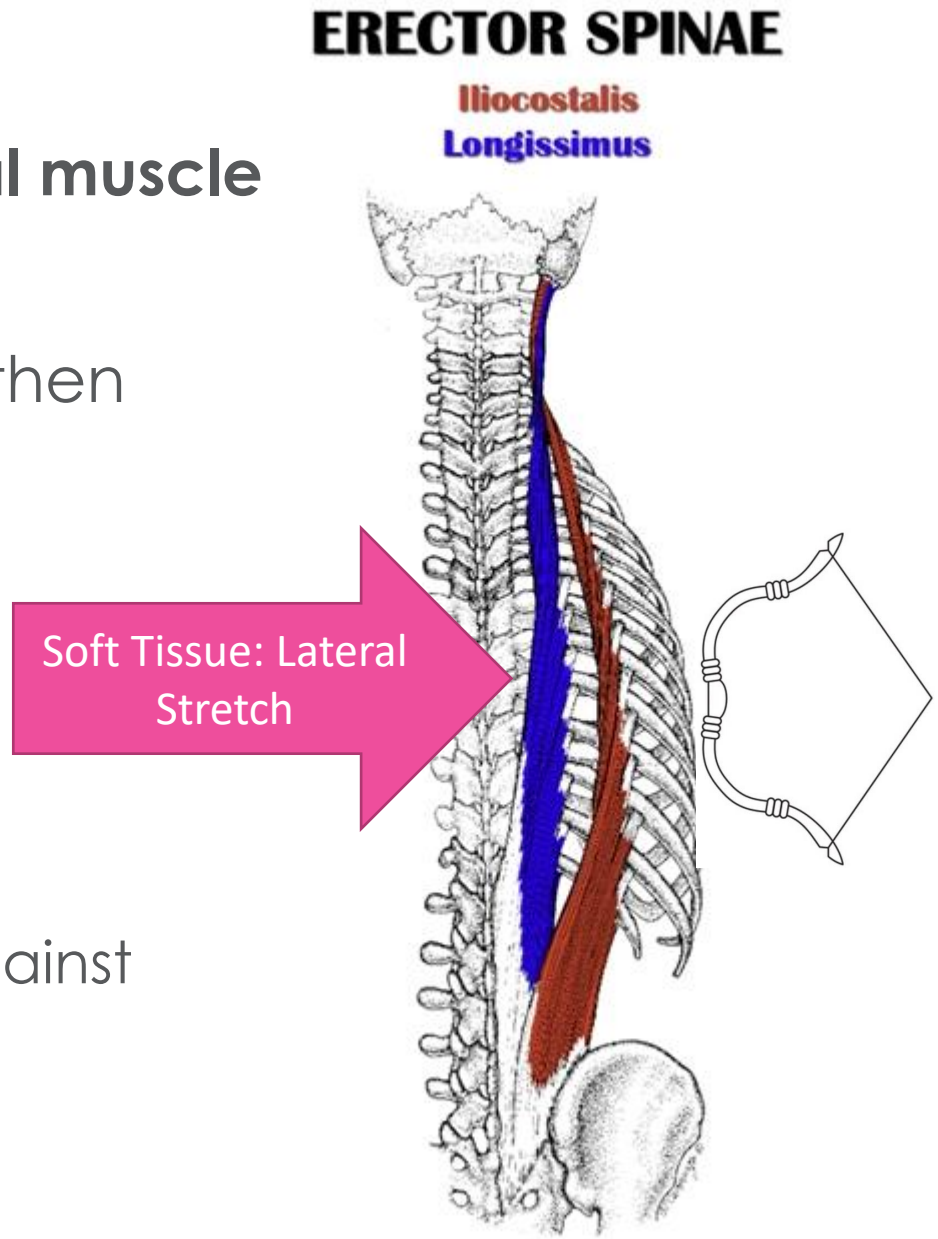
- Arthrodial Somatic Dysfunction Diagnosis
  - **T7 ERISI**

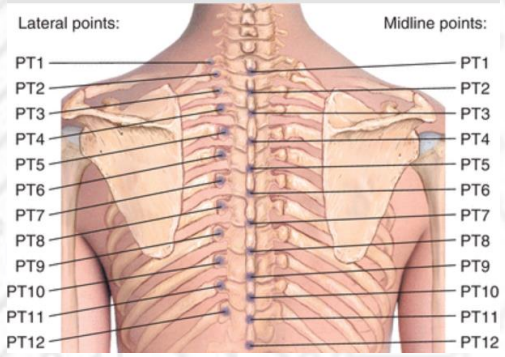


3. Apply activating force
Soft Tissue

SD= Right hypertonic paraspinal muscle

1. Palpate to muscle
2. Move to direct barrier (lengthen muscle)
   - Lateral
   - Linear
   - Inhibitory
3. Activating force:
   - Wait
   - Gentle repetitive pressure against barrier
4. Reassess



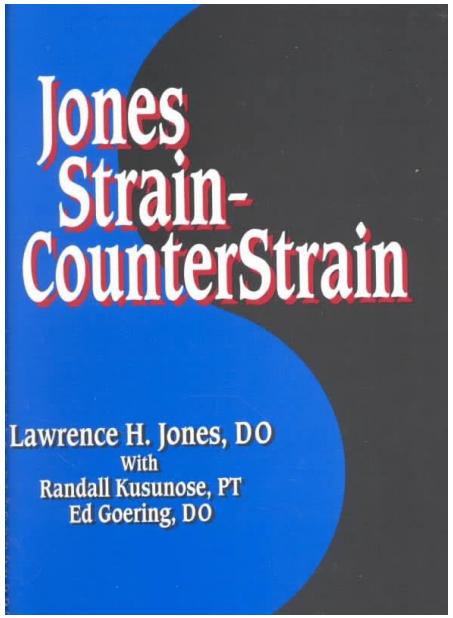


3. Apply activating force Counterstrain

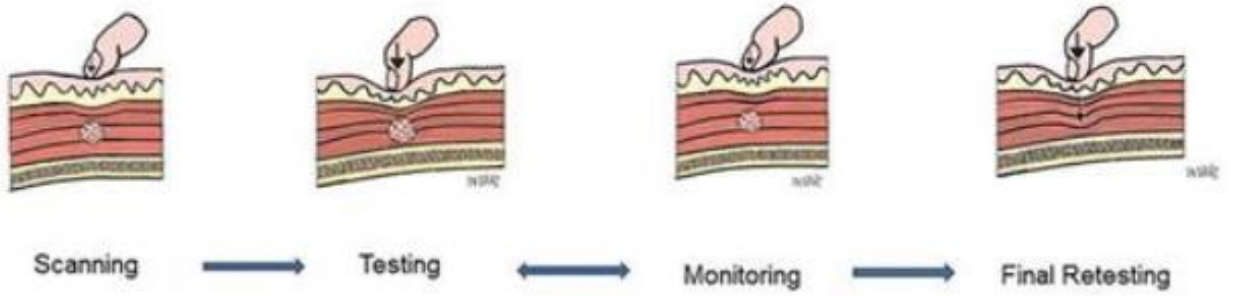
SD= PT 7 TP tenderpoint

- Tenderpoints are in muscle, tendon, ligaments, fascia

1. Find a tender point (Scanning/Testing)
2. Set a tender scale (0-10 scale)
3. Stack to the indirect based on instructions
4. Activating force: Wait 90 seconds (Monitor)
5. Slow release
6. Reassess (Retest)

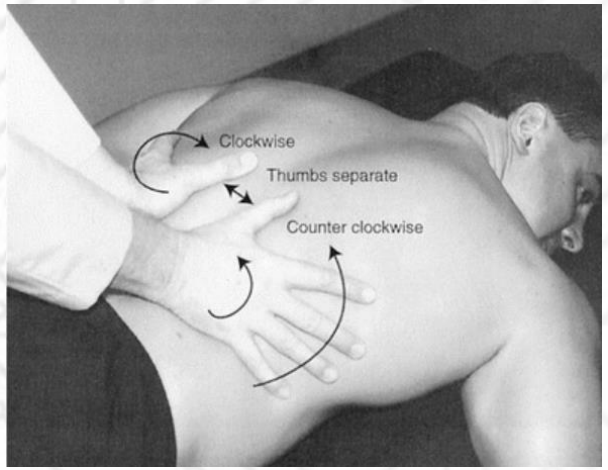


PT 7 TP Tenderpoint Treatment =
Extend Rotate Toward Sidebend away



3. Apply activating force
Myofascial Release

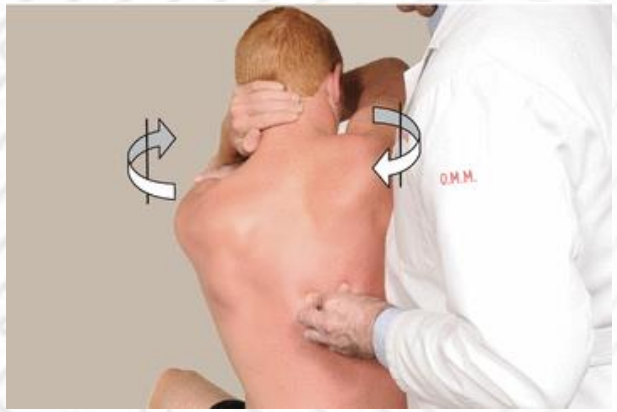
SD= Flexed Rotated Right Sidebend Left



1. Palpate to fascial layer
2. Stack to the direct or indirect barrier
3. Activating force:
   - Dynamically follow tissues release
   - Wait
   - Respiratory Assistance (Deep breaths)
4. Reassess when release ends

Direct Treatment = Extend Rotate Left Sidebend Right
Indirect Treatment = Flex Rotate Right Sidebend Left

3. Apply activating force
Muscle Energy Technique

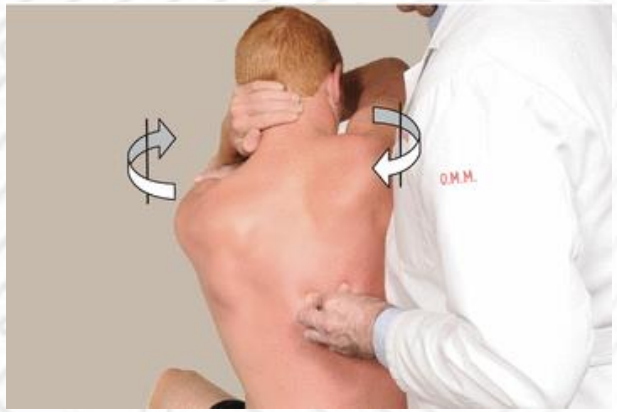


SD= T7 ERISI

1. Palpate to joint/bone
2. Stack to the direct barrier
3. Activating force:
   - Post-isometric Relaxation = move indirect
   - Reciprocal Inhibition = move direct
   - Respiratory Assistance
4. Repeat as needed
5. Reassess

Treatment Position =
FRrSr
Post isometric =
Rotate Left
Reciprocal inhibition =
Rotate Right
Respiratory Assistance =
Deep breaths

3. Apply activating force
Articulatory and High Velocity Low Amplitude

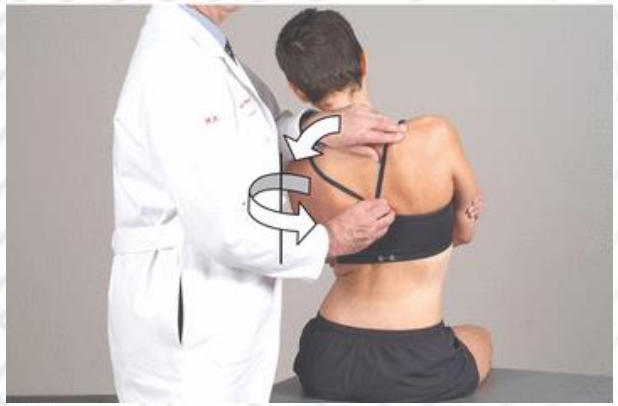


SD= T7 ERISI

1. Palpate to joint/bone
2. Stack to the direct barrier
3. Activating force:
   - Articulatory
     - Gentle repetitive pressure <u>against</u> barrier
   - High Velocity Low Amplitude
     - Single quick thrust <u>through</u> restrictive barrier
4. Repeat as needed
5. Reassess

Treatment Position = FRrSr
ART = Repetitive bumps at the barrier
HVLA = Popping through the barrier

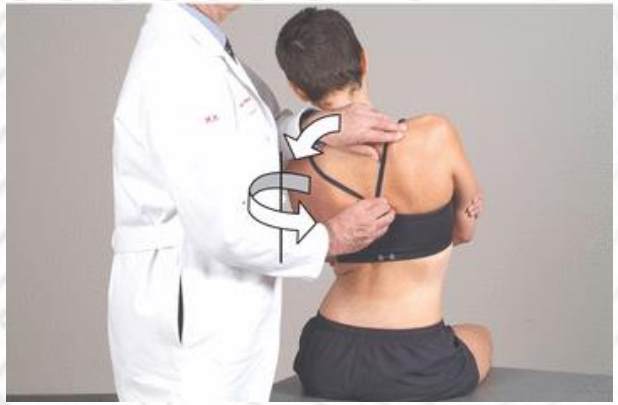
3. Apply activating force
Balanced Ligamentous Tension



SD= T7 ERISI

1. Palpate to joint/bone
2. Stack to the indirect barrier
3. Respiratory Assistance (4th plane)
   - Inhalation = flatten spinal curve
   - Exhalation = increase spinal curve
4. Activating force:
   - Air Hunger (hold breath)
5. Repeat as needed
6. Reassess

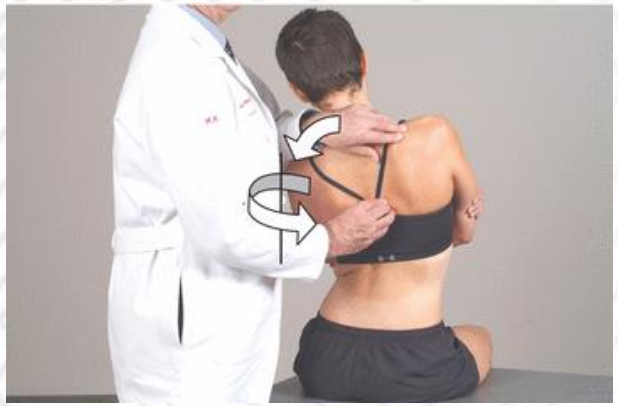
3. Apply activating force
Facilitated Positional Release



SD= T7 ERISI

1. Palpate to joint/bone
2. Flatten spinal curves (4th plane)
   - Extend kyphosis
   - Flex lordosis
3. Stack to the indirect barrier
4. Compression (5th plane)
5. Activating force:
   - Wait
6. Repeat as needed
7. Reassess

3. Apply activating force
Still Technique



SD= T7 ERISI

1. Palpate to joint/bone
2. Stack to the indirect barrier
3. Compression or Traction (4th plane)
4. Activating force:
   - Move the patient into direct barrier
5. Repeat as needed
6. Reassess

Common OMT Modalities

Modalities	Target Tissue	Direct/Indirect	Activating Force
Soft Tissue	Myofascial	Direct	Bounce against/Wait
Counterstrain	Myofascial	Indirect	Wait
Myofascial Release	Myofascial	Direct/Indirect	Dynamically Follow/Wait/Breath
Muscle Energy	Articular	Direct	Contract/Breath
Articular	Articular	Direct	Bounce against
High Velocity Low Amplitude	Articular	Direct	Thrust through
Balanced Ligamentous Tension	Articular	Indirect	Respiratory hunger
Facilitated Positional Release	Articular	Indirect	Wait
Still Technique	Articular	Indirect	Thrust through

Common OMM Modalities
Starting Point = Interchangeable

1. Localize to a target tissue
   - Accurate palpation (Anatomy)
   - Articular is basically Soft tissue but for an articular somatic dysfunction
   - Muscle Energy for hypertonic muscles

Common OMM Modalities
Starting Point = Interchangeable

2. Move to the Direct or Indirect barrier
    - Critical Step
    - ROM/Biomechanics (Physiology)
    - Can stack > 3 planes
        - Compression/Traction/flattening curves
    - Personal Opinion
        - Direct = easier to palpate/faster
        - Indirect = more tolerable, hard to fix SD

Common OMM Modalities
Starting Point = Interchangeable

3. Apply activating force
   - Waiting and breathing = enough
   - Switch as patient tolerates
   - Combine to speed treatment

Common OMM Modalities
Parting thoughts

Palpation/Localization > Number of modalities

- Focus on anatomy and physiology
  - pathophysiology
- Treatment positions = leverage and ergonomics
- Intentional practice

References

Images and information from

- *Atlas of Osteopathic Techniques (3rd ed). Nicholas, A, Nicholas, E. Wolters Kluwer. 2016*
- *Foundations of Osteopathic Medicine (4th ed.) Seffinger, Michael A. (editor). Wolters Kluwer. 2018*
- *Greenman's Principles of Manual Medicine (5th ed.) DeStefano, Lisa A. Wolters Kluwer. 2017*