Healing Through Movement: A Common-Sense Osteopathic Approach to Low Back Pain and Activity Prescription

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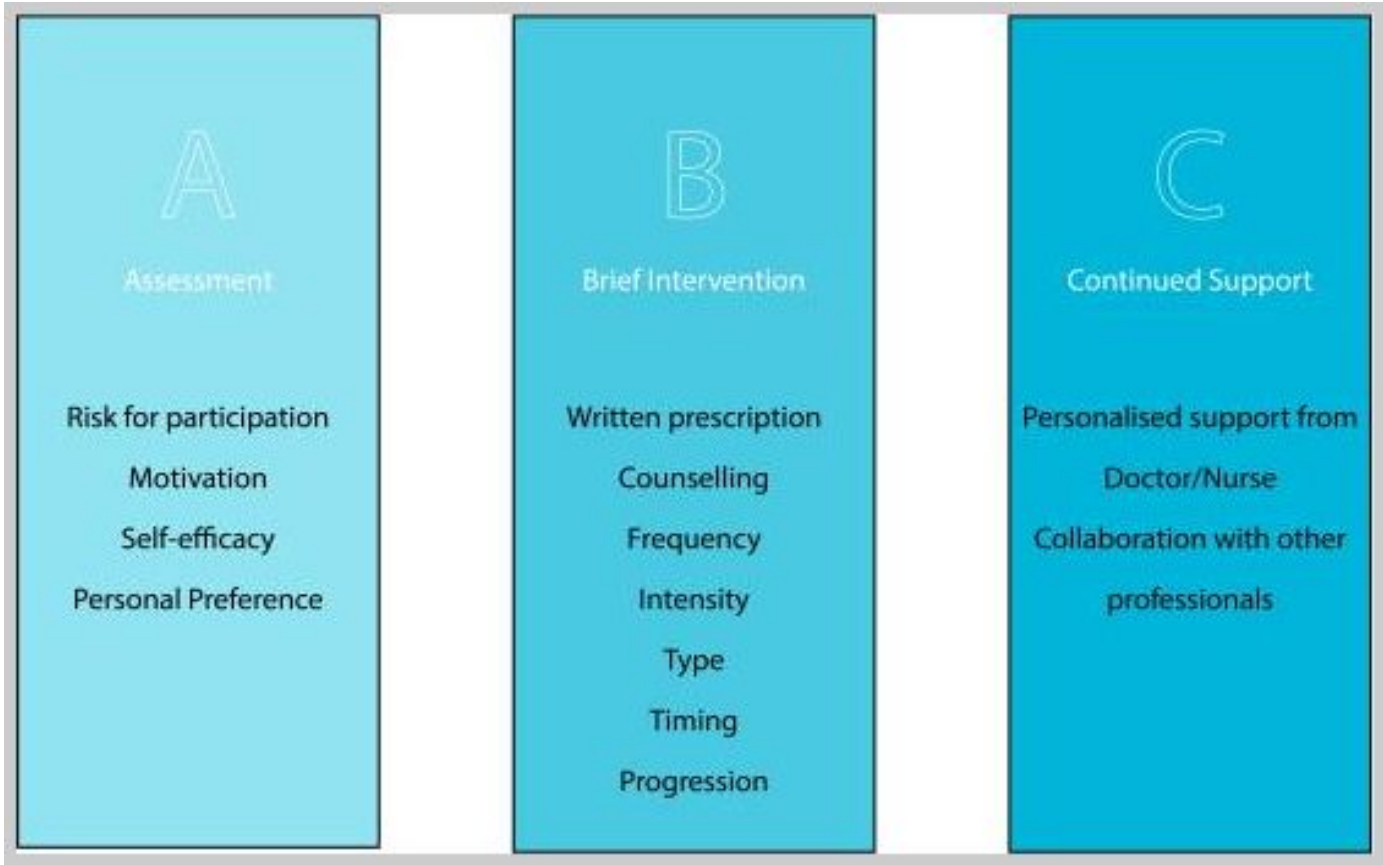
Why is movement important?

- Physical inactivity is the fourth leading cause of death worldwide.[1]
- Inactivity is estimated to cost the world economy $53.8 Billion annually.[2]
- Hundreds of Billions spent globally on medications, while exercising is often free.[3]



ABCs of Prescribing Exercise[4]

Photo by Dr. Mark Beard aka @docbarba on IG

Definition of Somatic Dysfunction

“Impaired or altered function of related components of the somatic (body framework) system: skeletal, arthrodial, and myofascial structures, and related vascular, lymphatic, and neural elements.”

“Somatic Dysfunction: An Osteopathic Conundrum” (2018)[5]

Gary Fryer, PhD

- “anachronistic, obsolete concept from the early 20th century that reinforces the belief in an esoteric, structural cause of pain” that are “diagnosed exclusively by osteopaths using palpation, that impacts pain, function, and general health, and is appropriately treated using manipulation”
- That TART (tenderness, asymmetry, range of motion abnormality, and tissue texture changes) are more likely indication of:
    - injury and inflammation of the zygapophysial joint
    - entrapment or extrapment of synovial folds within the zygapophysial joint
    - connective tissue remodelling within and around the zygapophysial joint
    - derangement or degeneration of the intervertebral discs

Poor Interrater Reliability of Somatic Dysfunction – $\kappa=0.17$[6]

- Three trained Osteopathy students in Rome were asked to evaluate TART parameters on 52 subjects' sacrums.
- Intraclass coefficient (ICC)
  - tissue texture abnormality ($\kappa=0.28$), asymmetry ($\kappa=0.29$)
  - restriction of motion ($\kappa=0.32$)
  - tenderness ($\kappa=0.34$)
  - landmark position ($\kappa=0.06$)
  - **diagnosis of somatic dysfunction ($\kappa=0.17$)**
- The ICC ranges from 0 to 1, with 1 indicating complete correlation and 0 indicating no correlation.

Moderate Interrater Reliability of reduced movement variability - κ=0.78 to 0.54[7]

- Institute of Osteopathy in Milan
- Published in January 2024
- 27 young healthy adults tested for asymmetry of motion around resting joint position in 6 body regions (i.e., the Variability Model)
- Result compared to 3D-Gait Analysis
- Results:
    - **Interrater Reliability for the detection of reduced movement variability ranged from 0.78 to 0.54**
    - Palpation of movement had a **sensitivity and specificity of 0.62 and 0.53** for detection of altered body function involving the MSK system (aka Somatic Dysfunction)
    - NOTE: Kemp Test commonly used to evaluate for facet arthropathy, evaluate the need for facet Spine Intervention, and generally for MSK dysfunction has a sensitivity of 0.50 to 0.70 and specificity of 0.67[8]

Variability Model[9]

- Institute of Osteopathy in Milan
- Principal Researcher Andrea Bergna
- Published in 2020
- Literature review and hypothesis of new model: Variability Model
- Assessment of range of motion in the Neutral Zone (NZ)
    - aka joint rest position
    - Distinguished by low presence of “passive brakes”[10,11]
    - NZ represents the biomechanical and neurological component of joint movement
    - NZ is distinguished from the “elastic zone”
        - Final part of joint movement beyond the NZ
        - Defined more by passive connecting elements (e.g. capsules and ligaments)[12]

How I explain Osteopathic Manual Medicine to my patients?

Lack of Spine Movement

Myofascial Tension/Pain

How can we start talking to our patients about physical activity?

ONMM Treatment

Sensation of “Looseness”

Activity Promotion

Radiolab “Man Against Horse” (2019)

Effects of Psychological Framing

- An integral and daily part of processing data
- Allows us reduce the ambiguity of intangible concepts
- Helps us conceptualize what we already know
- We know we are built to move fundamentally

Most Common Dysfunctions in Clinical Practice

- L4-5 FRS Right
- Right on Left sacral torsion
- Right posterior innominate

What type of inactivity causes this?

If my posture is so bad then how you explain this?

History & Physical

- History
  - Radiation of pain
    - Buttocks
    - Leg → foot
  - Numbness, tingling, weakness
  - Bowel or bladder function
  - Work? Retirement activities?
  - How do you move your body in a therapeutic way?
  - How many hours do you spending on the computer, reading, on your phone, in the recliner?
- Physical
  - Neurological/MSK
    - Reflexes
    - Clonus
    - Muscle Strength Testing
    - Slump Test
    - Kemp Test

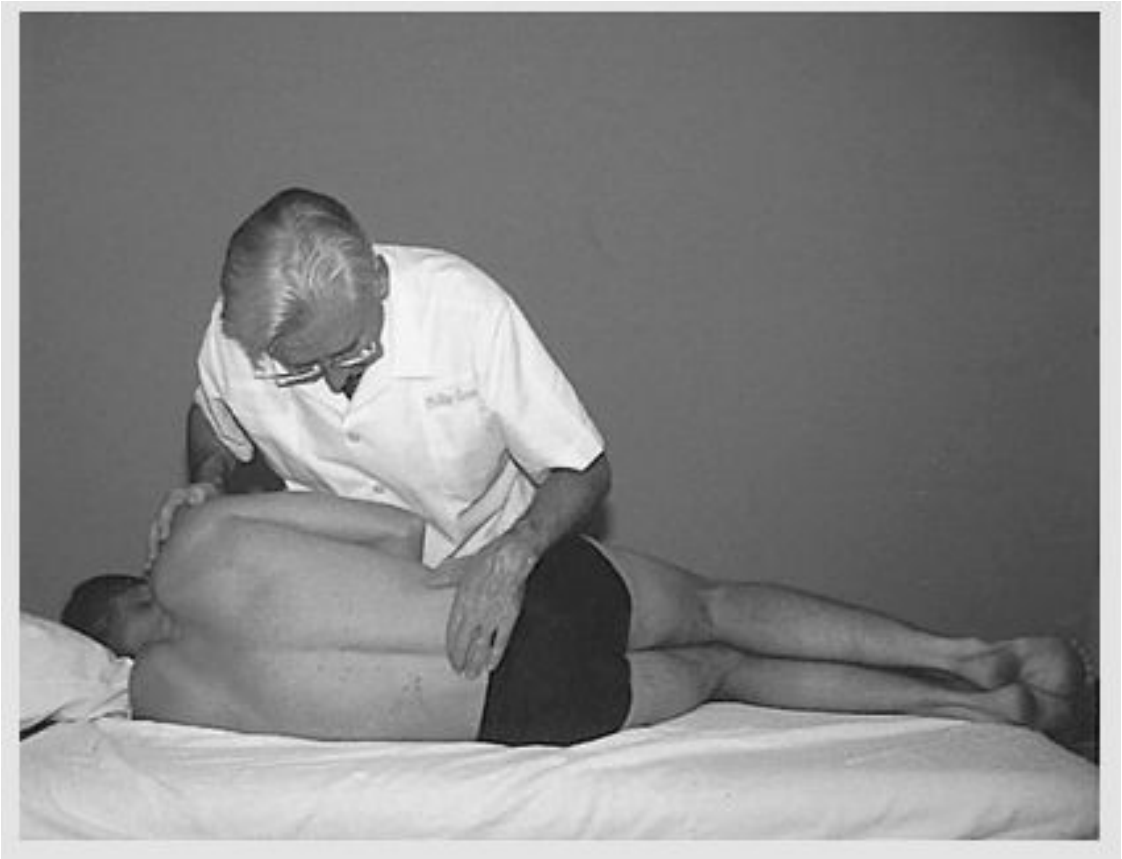
Osteopathic Exam → Tx → Retest → +/- Counterstrain

- Standing Flexion Test
- Seated Flexion Test w/ evaluation of Lumbar Spine

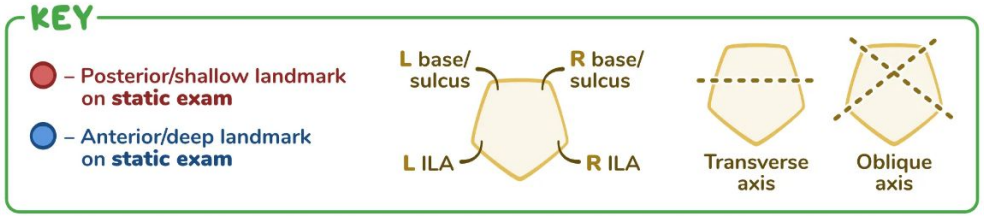
- Tx of Lumbar Spine
- Tx of Sacrum

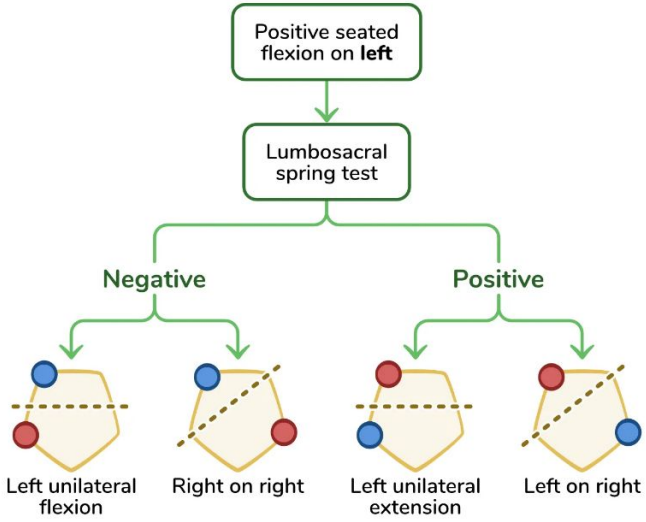
- Pelvic Compression Test
- Tx of Innominates

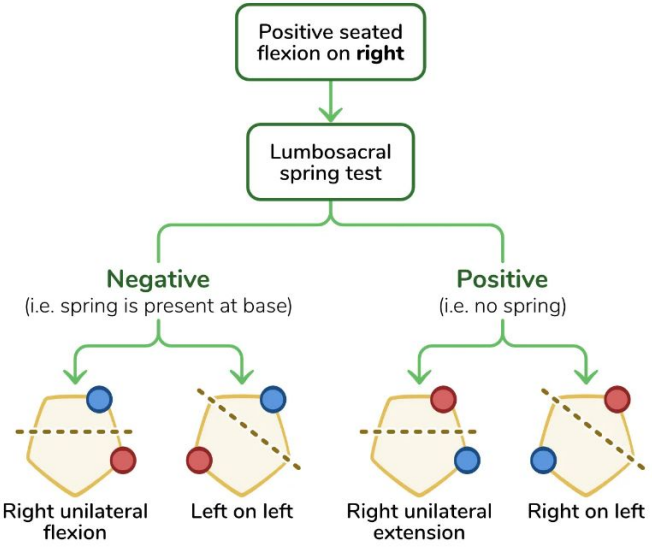
- Seated Flexion Test
- Gait Analysis
- +/- Counterstrain

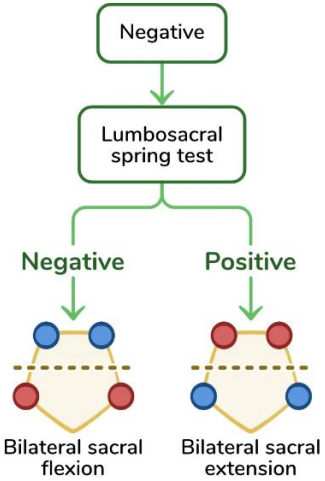


SACRAL DIAGNOSIS OVERVIEW



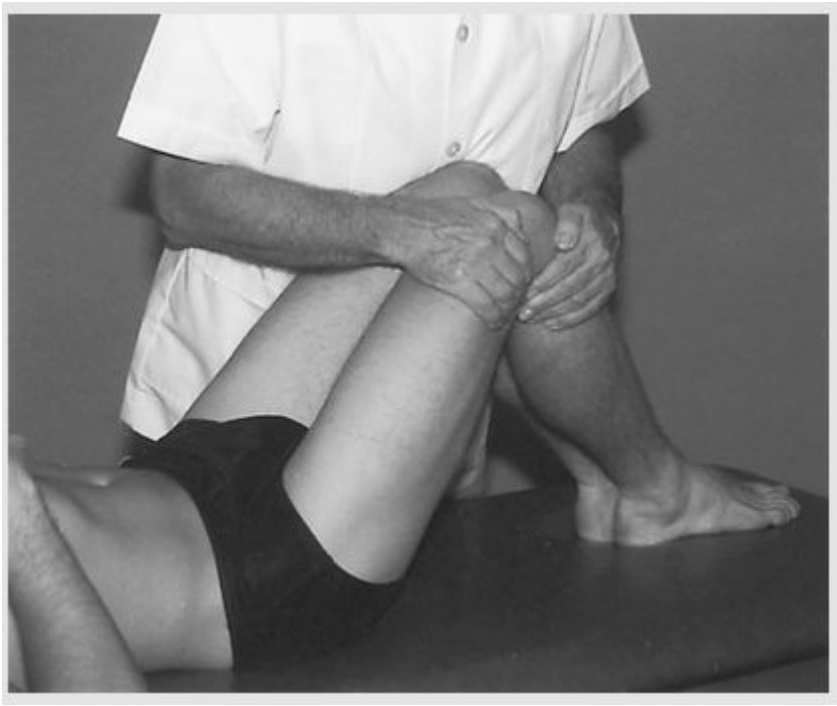


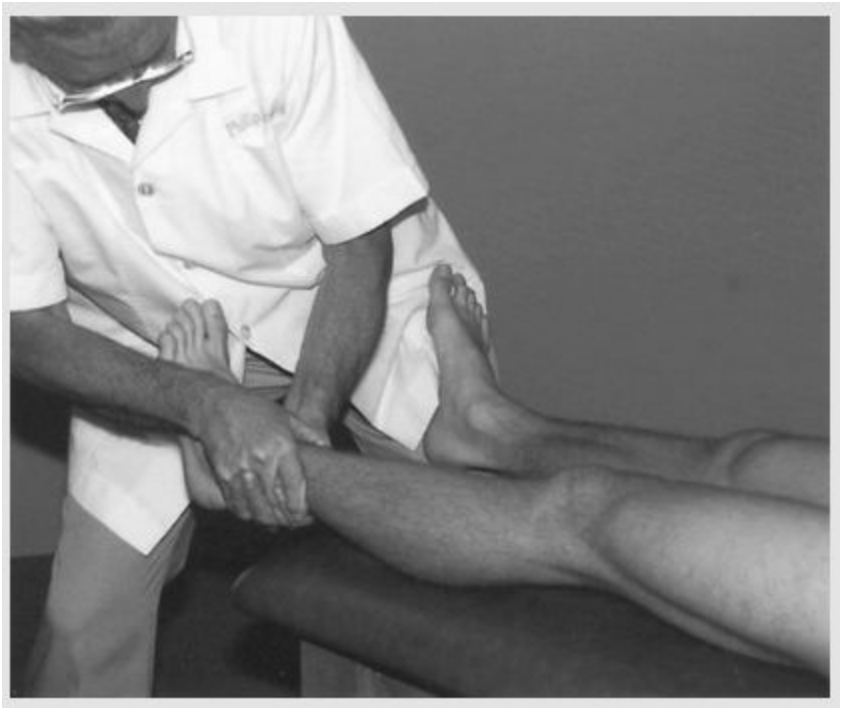


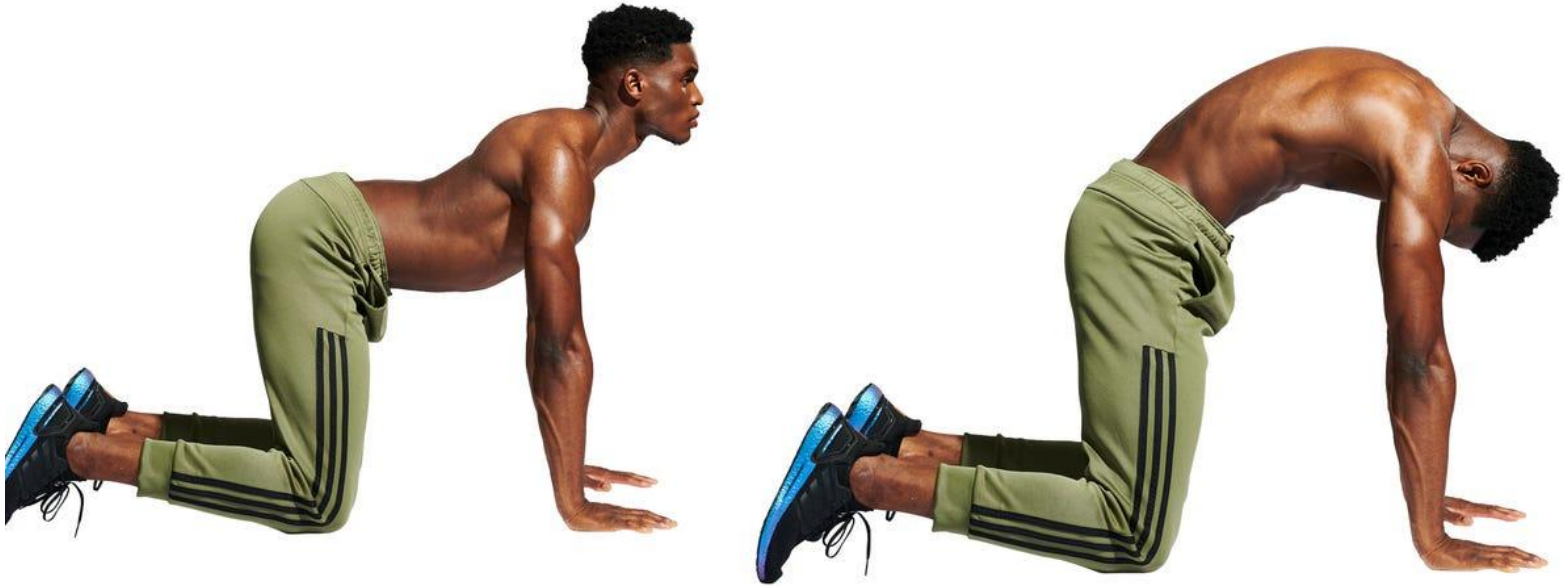


Sacral Tx

- Dr. Clarence Nicodemus, PhD, DO
- MSU ONMM Faculty
- Introduced at AAO Convocation 2023
- Direct Myofascial Tx of Sacrum
  - Patient prone
  - Superior sacral base
  - Inferior ILA
  - Thenar eminence of each hand on sacral base + ILA
  - Compressive and rotatory force on the sacrum
  - Breath as an activator







Men’s Health “How to Do the Cat Cow Stretch for Better Movement”

4 Steps of Seated Posture

- Feet
- Knees
- ITs
- Anterior pelvic rotation

Conclusion

- There is a great cost to our relative immobility
- Restricted motion may be one of the things we are best able to detect with our hands
- We are uniquely prepared to treat lack of motion as Osteopathic Physicians
- Our treatments can concretely demonstrate the benefits of greater mobility
- We can reframe the concept of exercise into a conversation about movement to make a common-sense argument for helping our patients help themselves

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