MDT and the Relevant Lateral Component: Strategies for the Lumbar Spine

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Objectives

• At the conclusion of this presentation, the attendee will
• Comprehend the MDT classifications and operational definitions for centralization and directional preference
• Synthesize key tests and measures to arrive at a classification for a simulated case study
• Based on classification, apply MDT principles to determine appropriateness of manual physical therapy
• Evaluate MDT as an approach that fits into the OMPT framework
Mechanical Diagnosis and Therapy (MDT)

**General Misconceptions**

- Based only on symptoms
- Classification based on pathoanatomy of the lumbar intervertebral disc
- Focused on extension exercises (prone pressup)
This is not...
Classification Systems for Low Back Pain

• Identifiable source of LBP present in $<10\%$
• Classification systems are often based on pathoanatomical (theoretical) model.
• No one classification system is more reliable than others (Riddle, 1998).
• Certain characteristics of particular classification systems may have appropriateness based on symptom chronicity (ICF).
Lumbar Spine Classification

- Manipulation
  - Classification Criteria
    - Manipulation and exercise

- Specific Exercise
  - Classification Criteria
    - Activities to Promote Centralization

- Stabilization
  - Classification Criteria
    - Stabilization exercises

- Traction
  - Classification Criteria
    - Mechanical/ auto-traction

End Range Forces and Manual Physical Therapy

Diagnostic Properties of End range of motion (ERP)

• Exposes dysfunction (biomechanical model)
• Reduces derangement
When should we **not** test end range?
Stability vs. Mobility

- History – is the patient better when *moving* or when *stationary*?
- Prognostic implications
- Movement in mid-range or end range?
- Effects of postural correction...
Patient response methods

• **Maitland** – *patient response* to passive

• **Movement System Balance** (Sahrmann) – *patient response* to active limb movements

• **MDT** (McKenzie)– *patient response* to repeated end range movements
“Patient response methods...

• require dedicated communication between clinician and patient for clinical decisions, without necessarily requiring a pathology based diagnosis.”

History

• The goal is to understand the lesion behavior as well as to investigate the patient’s level of awareness of the effects of positions and loads on their *concordant* complaints.

• Ruling out Red Flags

• Guiding the physical examination to develop a provisional mechanical diagnosis
Load Interpretation

• At the completion of the History, What do you know about the effect of load on the patient’s Symptoms?
• Do you have enough information to base a mechanical hypothesis in which to proceed with your examination?
Patient History

• 35 year old female
• Referred by her General Practitioner for low back and leg pain
• Self employed: Works at a desk
• Functional Capacity Limitation: Moderate: Limited by pain
• Leisure Activity: Rock Climbing: Self Limited
• Oswestry 50/100
• VAS 6-8/10
What are the possibilities?
Case study – History and Exam of Derangement with a Relevant Lateral

• Will be distributed with presentation.
Provisional Diagnosis?

• Now what are the possibilities?
Mechanical Diagnosis:

- **Dysfunction Syndrome**: Mechanical deformation of structurally impaired soft tissues
- **Postural Syndrome**: pain associated with prolonged static loading on normal tissues
- **Derangement Syndrome**: A disturbance in the normal resting position of the affected joint surfaces
- **Other**
Clinical decision making...

Mechanical Options:
Change the Direction?
Change the Force?
Change the Load?
Key physical examination tests and measures?

• Structural/postural correction
• Next?
• Neuro or AROM baselines
• Next?
• Repeated end range – sagittal
• Next?
• Lateral component/results
• DIP or centralization
• Open to other tests and measures
Force Progression

Mobilization

Manipulation

Therapist overpressure

Patient overpressure

Patient generated

Independent

Dependent
Traffic Light Guide

Stop

Progress force

Continue
Identification of lateral component

Unilateral or asymmetrical
Flex and Ext aggravate
Lateral movement asymmetrical

Suspect it

Centralise or better with lateral movements

Confirm it
Lateral Exercise and Manual Physical Therapy Procedures

- Video and Pictures will be included in Presentation.
Repeated Extension in Lying
*(with Hips Off Center)*

• Patient is partially responding to extension and has a plateau in progress or

• Initiating Extension after relevant lateral conditions have centralized.

• Procedure will be demonstrated
Rotation in Flexion Non-Thrust Manipulation

• When all extension procedures are ineffective or worsen symptoms
• When unable to correct a lateral shift in Weight-bearing

• Procedure will be Demonstrated
Rotation in Flexion **Thrust Manipulation**

- When Rotation in Flexion Mobilization produces a decrease or centralizing effect that does not remain better.

- Procedure will be demonstrated and OMT variations will be discussed.
Summary

• Efficacy of testing repeated end range movements
• Forces may be required in various planes with loading and unloading strategies
• Classification based on patient response as well as mechanical and neurological changes
• Pathoanatomical vs. movement based approach
Repeated end range testing can be used to evaluate and treat musculoskeletal conditions.
Directional Preference

• The phenomenon of preference for postures, movement, exercise in one direction.
Lumbar Spine Classification

- **Manipulation**
  - Classification Criteria
  - Manipulation and exercise

- **Directional Preference**
  - Classification Criteria
  - Activities to Promote Centralization and Mechanical/Neuro Changes

- **Stabilization**
  - Classification Criteria
  - Stabilization exercises

- **Traction**
  - Classification Criteria
  - Mechanical/auto-traction