Common clinical findings with uncommon links
Clinical integration of the lower extremity: evidence, evaluation and intervention

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Objectives:

Following completion of the course, the participant will be able to

○ describe the clinical application of normal and abnormal lower extremity clinical integration relationships.

○ examine for selected musculoskeletal impairments as an integrative model.

○ implement clinical decision making skills to perform selected manual therapy and neuromuscular techniques.
“Anybody can be taught a treatment technique, but it takes a good clinician to know which treatment technique to use and when to use it.” S. Paris
Decision Making makes the Good Clinician

Elements of Decision Making:

knowledge base and past experiences

principles of examination

reasoning for logic of data to function

meta cognition
“Principles of ” Extremity Examination

- **pain assessment**
  - pain is what the patient says it is
  - emotional side
  - disruptive to life behaviors

- **initial observation**
  - patient is showing “cure”; demonstrate their own management

- **history**
  - patient’s forget details/specifics and historical context
  - no one person can remember all events
“Principles of ” Extremity Examination

- **structural**
  - foundation for movement
  - nature is not always symmetrical
  - if osseous looks asymmetrical then confirm with other data
  - if asymmetrical then will have decreased mobility

- **palpation for condition**
  - the condition speaks for itself
  - appearance at the time of inspection of posturing
  - swelling represents either continued injury or body’s healing
“Principles of ” Extremity Examination

- active motion
  - repetition of movement can only show true functioning
  - active movement in combined movement is natural
  - decreased classical ROM does not necessarily mean hypomobility exists
  - with decreased active ROM there will be substitution
“Principles of ” Extremity Examination

- passive
  - always greater range than active
  - normal is pain free with normal end feel
  - quality of resistance is characteristic of normal and abnormal
  - if classical is normal does not necessarily mean accessory is normal
“Principles of ” Extremity Examination“

- muscle selective tissue tension (MSTT)
  - difficult to isolate one muscle
  - isometric contraction causes intra articular movement(s)
  - muscle contraction influences inert structures
  - tendonitis is only a symptom, find the problem
  - partially torn muscles are painful to contract
  - complete tear of a muscle is pain free with isolated contraction
“Principles of ” Extremity Examination

- muscle extensibility
  - muscle will appear shortened if underlying mobility of joint is restricted/hypo
  - extensibility is a factor of both length and width
  - decreased length will exist if ROM is decreased

- muscle strength
  - varied throughout functioning and angulation of limb
  - decreased strength will exist if ROM is decreased
“Principles of ” Extremity Examination

- special tests
  - a test is only as good as its intent
  - tests can be false positive, tests can be false negative

- movement analysis
  - movement is a behavior that is to be observed in the functioning
  - functional assessment is a constant reassessment
“Principles of ” Extremity Examination

- palpation for tenderness
  - specificity of one finger palpation for provocation of symptoms
  - normal structures do not produce pain with touch
  - palpation tenderness can be misleading

- neuro mobility
  - may be false positive if joint and soft tissue restrictions exist

- imagining
  - image is interpretive

- evaluation
  - attempt to be tissue specific
Principles of Extremity Examination

- **diagnosis and prognosis**
  - diagnosis by Physical Therapist may need to be vague to follow medical diagnosis and/or billing codes

- **intervention**
  - treatment is dependent on tissue specific impairment related to stage of condition of healing, tissue reactivity, subject reactivity and functional goals
Premise of Movement Responses

Identify direction

- How did get there?
- How to keep there?
- What does this mean?
Characteristics of the Concept of Movement

- **Extensibility**
  - Length
  - Transverse (strumming)

- **Coordination**
  - Strength
  - Proprioception

- **Joint Mobility**
  - Hypo vs Hyper

- **Stability**
  - Dynamic
  - Static

- **Unecumbered movements**
  - Request movement
  - Knowledge of movement
  - Sensory awareness