



Lumbopelvic Examinations and Treatments

Course Overview

- Online modules
 - Medical screening, visceral screening and flags
 - Anatomical and biomechanical considerations
 - Biopsychosocial approaches to assessment and treatment
 - Patient response model
 - Critical thinking overview
 - Clinical decision making and clinical practice guidelines
 - Clinical exam guide
 - Skillful execution of joint and soft tissue mobilization techniques
- Live course – Clinical integration and application

Course Objectives

1. Apply the patient response model (test, treat, retest) to systematically collect and analyze data on the effectiveness of manual therapy, exercise, and other relevant interventions specific to the lumbopelvic region. **(Applying)**
2. Apply critical thinking skills to identify and evaluate potential contributors (local, regional, global) to lumbopelvic patient symptoms based on available evidence and patient information. **(Applying)**
3. Critically analyze and apply relevant clinical practice guidelines for specific patient populations and conditions to guide examination and treatment decisions in lumbopelvic management. **(Evaluating)**
4. Utilize a clinical examination guide as a systematic tool to stimulate hypothesis generation and guide the clinical reasoning process specifically for the evaluation and treatment of lumbopelvic patients. **(Applying)**
5. Skillfully execute lumbopelvic joint and soft tissue mobilization interventions with attention to key elements including the direction and amount of force, therapist body mechanics, and patient positioning. **(Applying)**

Course Objectives Continued

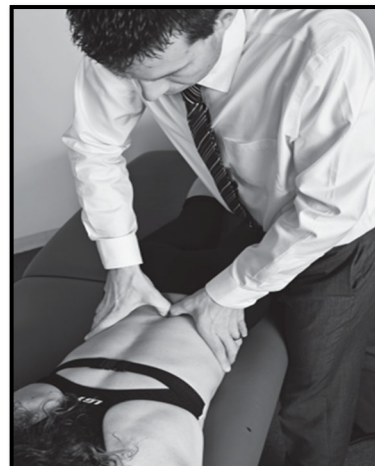
6. Proficiently prescribe specific exercise interventions for the lumbopelvic region based on the available evidence, utilizing the impairment model, considering the functional needs of the patient, and to complement the specific manual therapy techniques. **(Applying)**
7. Demonstrate a working knowledge of medical screening, including identifying potential visceral referral patterns and red flags specific to the lumbopelvic region. **(Understanding)**
8. Integrate a biopsychosocial approach in the clinical examination and treatment of lumbopelvic conditions, considering biological, psychological, and social factors in the patient's presentation and management. **(Applying)**
9. Demonstrate an understanding of specific anatomical and biomechanical implications relevant to the lumbopelvic region and their implications for orthopedic manual therapy assessment and treatment. **(Understanding)**

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Importance of Lumbopelvic Assessment and Treatment: (Hoy et al., 2014)

- **Low back pain:** A common symptom, not a disease
- **Prevalence:**
 - 4.2% (ages 24-39)
 - 19.6% (ages 20-59)
 - Lifetime prevalence: 84%
- **Impact:**
 - Females > males
 - Most common between 40-80 years old
 - Global
- **Consequences:**
 - Leading cause of disability
 - Common reason for emergency room visits
- **Additional information:** 24.1% at 12 months
 - 58.6% at 24 months
 - 55% have at least 10 episodes





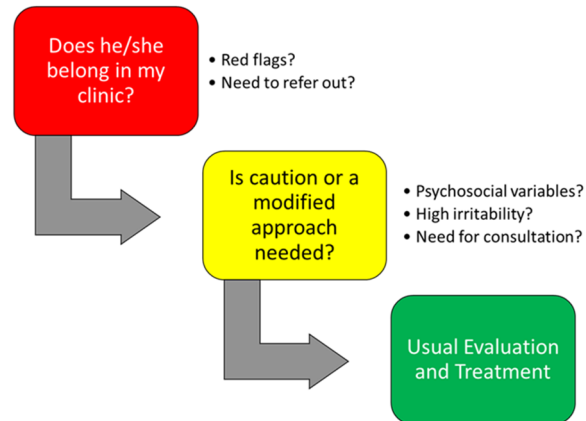
Enjoy the Course!



Lumbopelvic:
Medical Screening and Triage

Medical Screening and Triage

(Blanpied et al., 2017)



Medical Screening: Flag System

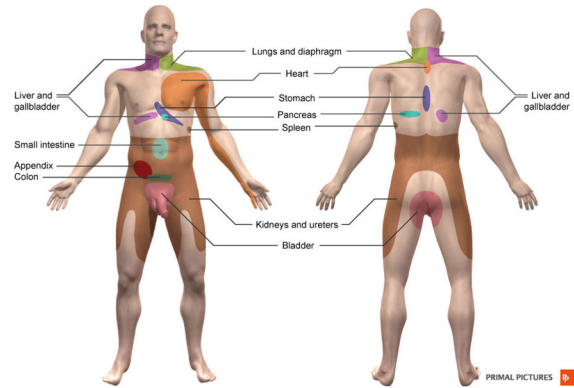
(Nicholas et al., 2011)

- Red – serious pathology
- Orange – psychiatric symptoms
- Yellow – beliefs, appraisals, judgements, emotional responses, pain behaviors and coping strategies
- Blue – perceptions about the relationship between work and health
- Black – system or contextual obstacles



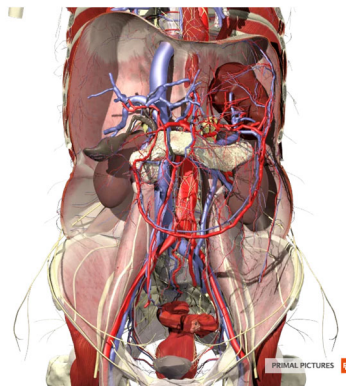
Medical Screening: Differential Diagnosis

- Gastrointestinal
 - Stomach
 - Small intestine
 - Large intestine (Appendix)
 - Rectum
 - Anus
- Urogenital
 - Kidneys
 - Ureters
 - Bladder
 - Uterus/ ovaries/ fallopian tubes/ testes
 - Penis/vagina
- Cardiovascular
 - Abdominal aortic aneurism



Medical Screening: Visceral Referral

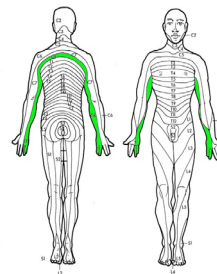
- Organs that refer to lumbopelvic region:
 - Kidney/ureter
 - Uterus or ovary
- Special questions
- Symptom behaviors:
 - 24-hour pattern
 - Aggravating factors
 - Easing factors



Medical Screening: Informing Your Exam

- Reflective questions:
 - Is there any additional patient history information needed?
 - Any precautions and/or contraindication to orthopedic manual therapy?
 - What do I need to clinically examine?
 - What is the priority of these tests?
 - Today?
 - Visit 2?
 - Visit 3? / beyond?
 - Do I need to modify any of these tests based on presentation?

Medical Screening: Informing Your Exam



Take Home Message

- Be aware of possible red flag conditions
- Utilize established guidelines to establish need for imaging
 - MRI indicated only if neurological symptoms exist
- Direct pathoanatomical cause for pain is rarely identifiable
- In the absence of suspected serious pathology, evaluate and treat based on impairments, irritability, and symptom response



Lumbopelvic: Anatomy and Biomechanics

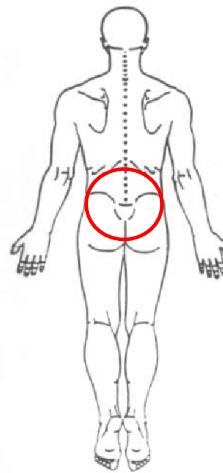
Why is Anatomy and Biomechanical Knowledge Relevant? (Ajjawi and Higgs, 2008)

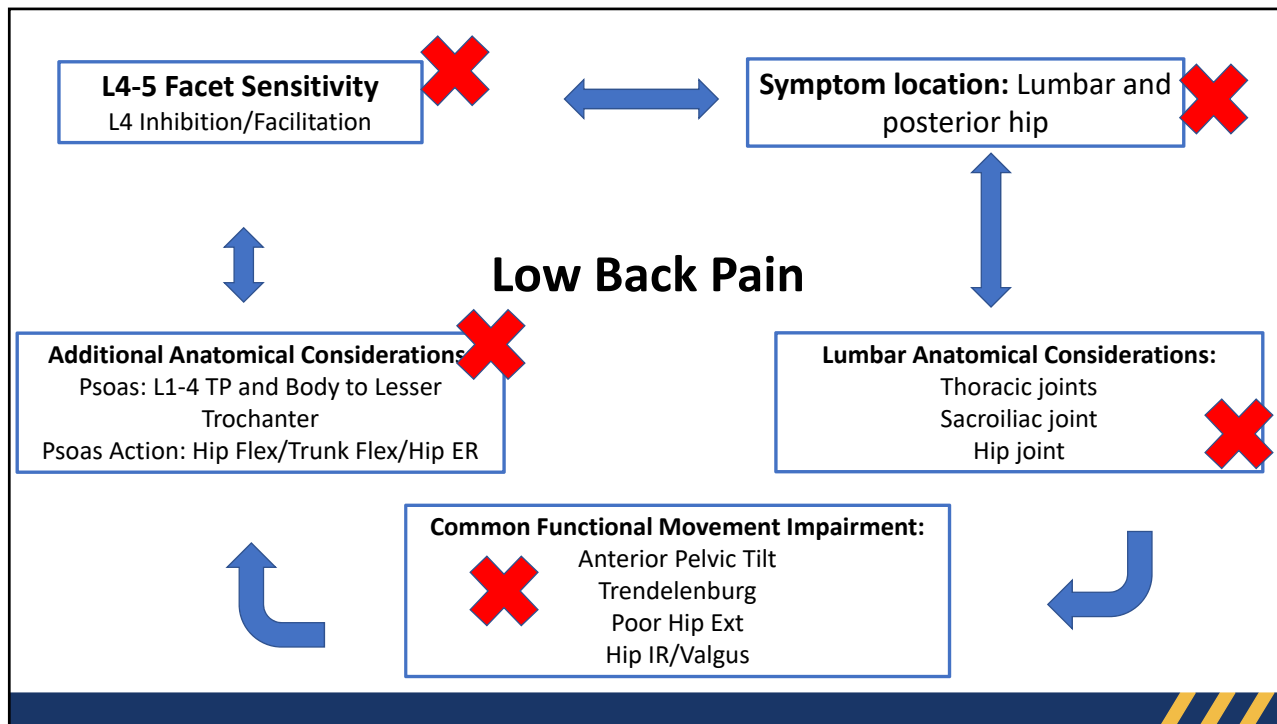
- Patient Engagement
 - Locate a patient's symptoms
 - Confidence in touch
 - Find impairments
- Clinical Prioritization
 - Narrow down to sensitized areas
- Clinician Confidence
 - Understand referral patterns
 - Have options to assess when stuck
 - Pattern recognition



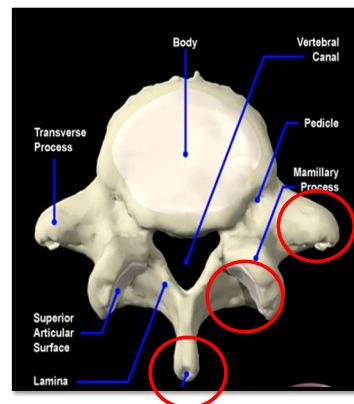
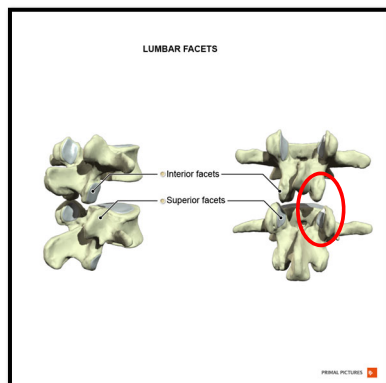
What Areas of Knowledge May Help?

- Structural knowledge
 - What can lead to pain here?
- Biomechanical knowledge
 - How does this move?
 - Does it always move this way?
- Symptomology
 - What can refer pain here?





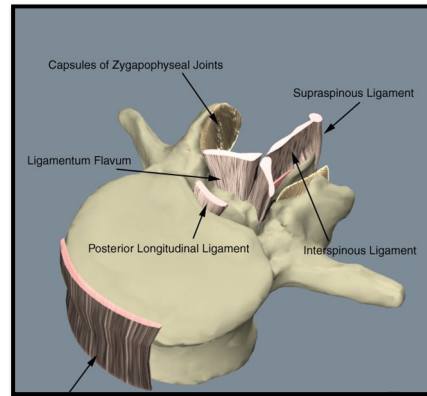
Anatomical and Biomechanical Considerations: Lumbar



Anatomical and Biomechanical Considerations: Lumbar Ligaments

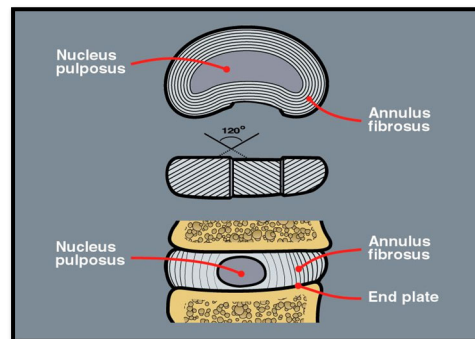
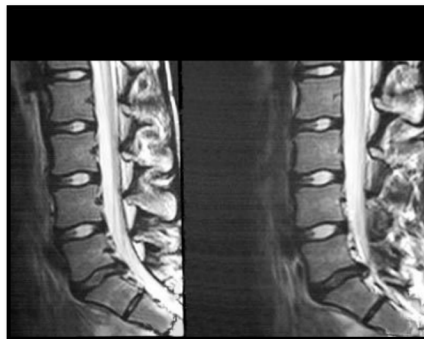
- **Ligaments**

- ALL - narrow in cervical and thick in lumbar, attached to vertebral body
- PLL - thick in cervical and thin in lumbar, attaches to disc
- Corks the nutrient foramen in flexion to increase the stability of the lumbar spine



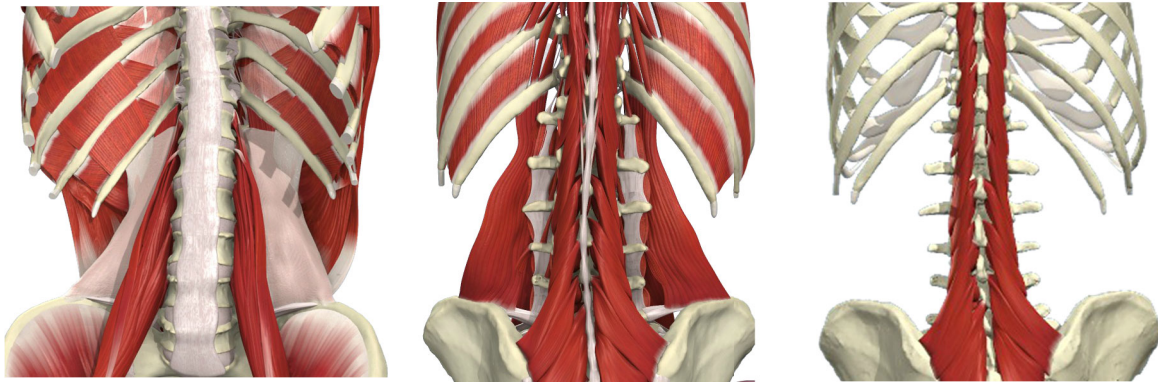
Anatomical and Biomechanical Considerations: Lumbar Disc

- **Nucleus**
- **Annulus**
- **Injury**

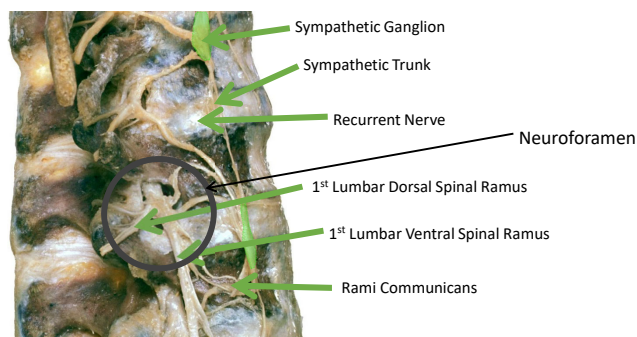


Anatomical and Biomechanical Considerations: Lumbar Myogenics

- Anterolateral, lateral, and posterior group

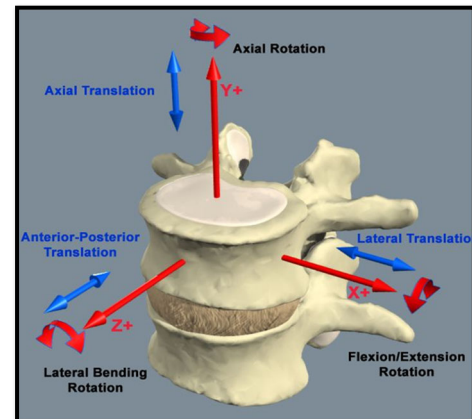


Anatomical and Biomechanical Considerations: Other Relevant Lumbar Anatomy



Anatomical and Biomechanical Considerations: Lumbar Mechanics

White/Panjabi '78	Rotation	Side bend	Flex/Ext
L1/2	2	6	12
L2/3	2	6	14
L3/4	3	8	15
L4/5	3	6	17
L5/S1	5	3	20

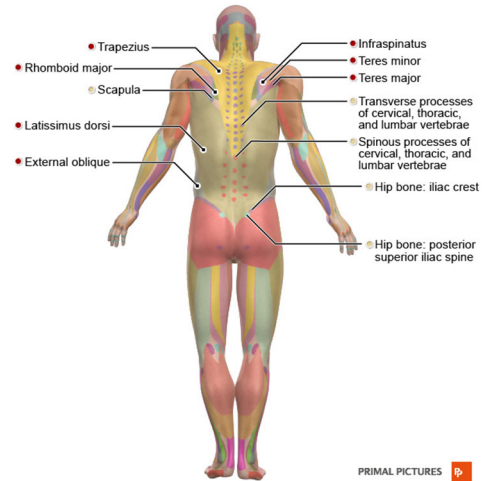


Anatomical and Biomechanical Considerations: Mechanics

- Coupled forces
 - Lumbar spine
 - L1-2-3-4-5 – side bend and rotation in same direction when spine is in flexion, opposite direction in extension
 - L4-5 – transitional segment and may be either
 - L5-S1- side bend and rotation occur in the same direction in flexion and extension

Structural Knowledge Integration: Lumbar Palpation

- Anterior
 - Iliac crest
 - Pubic ramus
 - ASIS
 - AIIS
- Posterior
 - PSIS
 - Spinous process
 - Facet
 - Transverse process
 - SI joint line
 - Sacrotuberous
 - Coccyx



Anatomy and Biomechanics – Pelvis

Anatomical and Biomechanical Considerations: Arthrokinematic Rules

- **General rules** for arthrokinematic joint motion:
 - Distraction: Move perpendicular to the concavity
 - Concave on convex: Same direction as osteokinematics
 - Convex on concave: Opposite direction as osteokinematics
- **Operator rules** for manual treatment:
 - Stay close to the joint surface
 - No white knuckles
 - Stabilize the proximal segment

Anatomy/Biomechanics - Take Home

- Anatomy and Biomechanics are areas of **base knowledge** that complement your decision making and intervention delivery
- Aim to functionally apply this knowledge
- Think and assess 3D
- Cannot hang your hat on a single structure
- Aids in Impairment Prioritization
 - What do those things attach to?
 - Is there an associated pathology?
 - What are the patient's goals?

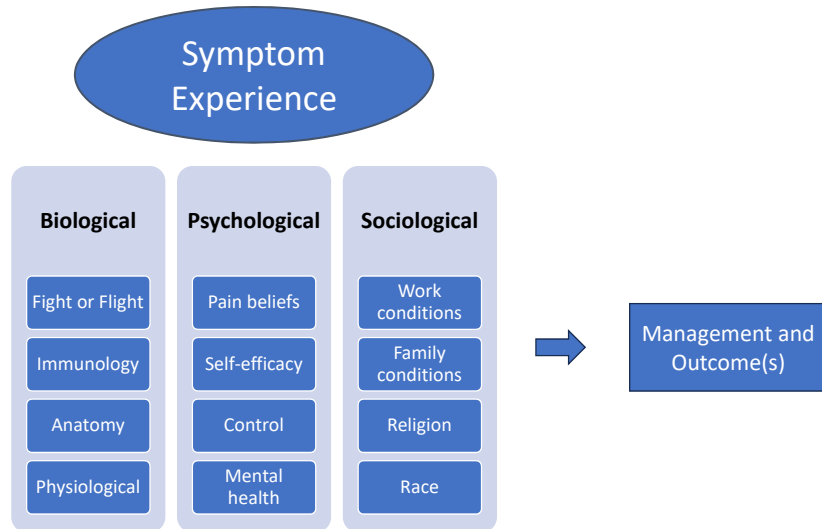


Thank You



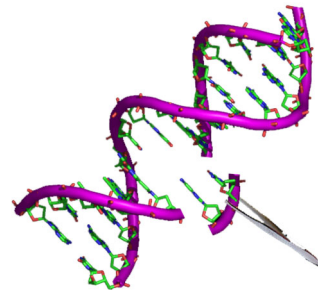
Biopsychosocial Framework and
Approach

Biopsychosocial Approach (Ng et al., 2021)



Biopsychosocial Approach

- **Biological** factors influencing low back symptoms: (Wong et al., 2017 and Karran et al., 2020)
- *Risk factors:*
 - Age (chronic sx)
 - Sex (chronic sx)
 - Genetics (chronic sx)
 - Type II diabetes
 - Adverse birth outcomes



Biopsychosocial Approach

- **Psychological** factors influencing low back symptoms: (Karran et al., 2020 and Synnott et al., 2015)
- *Risk factors:*
 - Anxiety
 - Depression
 - Catastrophic beliefs (recovery)
 - Poor motivation (recovery)



Biopsychosocial Approach

- **Sociological** factors influencing low back symptoms: (Karran et al., 2020, Synnott et al., 2015 and Wong et al., 2017)
- *Risk factors:*
 - Low socioeconomic status
 - Leaving school at early age
 - Manual work
 - Low job satisfaction (recovery)
 - Relationship stress (recovery)
 - Inactivity (chronic sx)
 - Falls (chronic sx)



Biopsychosocial Approach: Summary

- Not new, not perfect
- Some factors are modifiable/nonmodifiable
- If you screen, plan to intervene
 - Education, exercise, manual therapy
- Evidence suggests that patients receive care inconsistent with guidelines
 - What are your unique barriers to implementation?
 - What are your unique enablers to implementation?



Patient Response Model

Patient Response Model (Maitland, Hengeveld, and Banks, 2013)

- SINSS model helps clinical reasoning (Petersen et al., 2021)
 - Severity
 - Irritability
 - Nature
 - Stage
 - Stability
- Hypothesis/ differential diagnosis/ primary source (tissue or system) of signs and symptoms
- Plan for objective exam

S

Refers to the intensity of the pain provoking activity.

Delineates when caution is necessary during the examination and treatment.

If the classification is SEVERE Pain, it would be expected activity would have to be interrupted and stopped because of provoked pain intensity

Min, Mod, Max

Severity

I

Describes how far and how quick into a movement pain is provoked

How long it takes to subside after the movement is withdrawn

Min, Mod, Max

Irritability

N

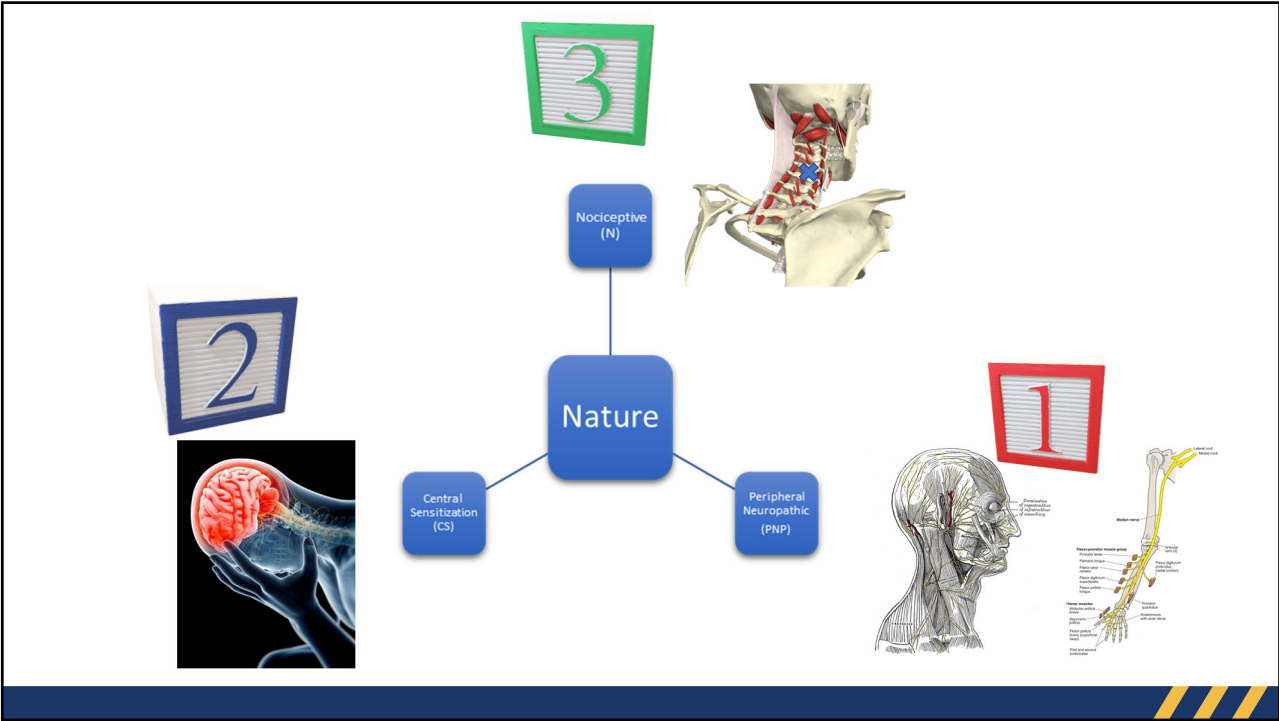
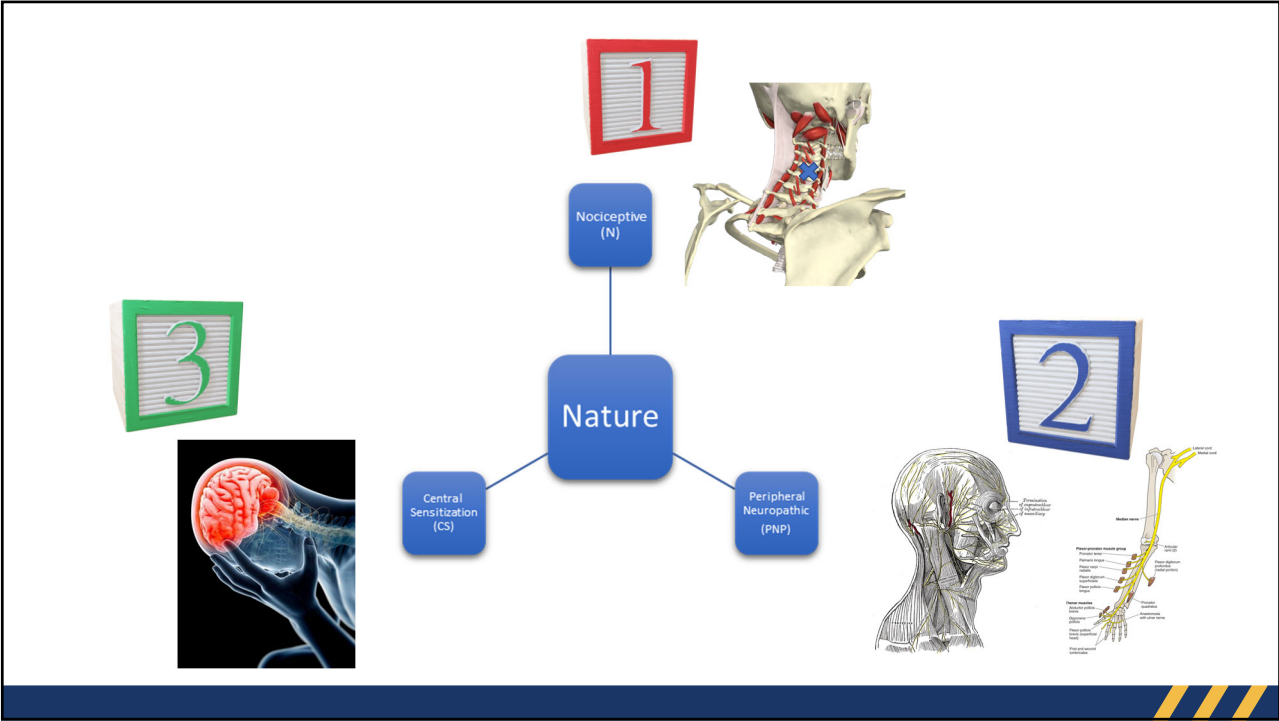
First level classification

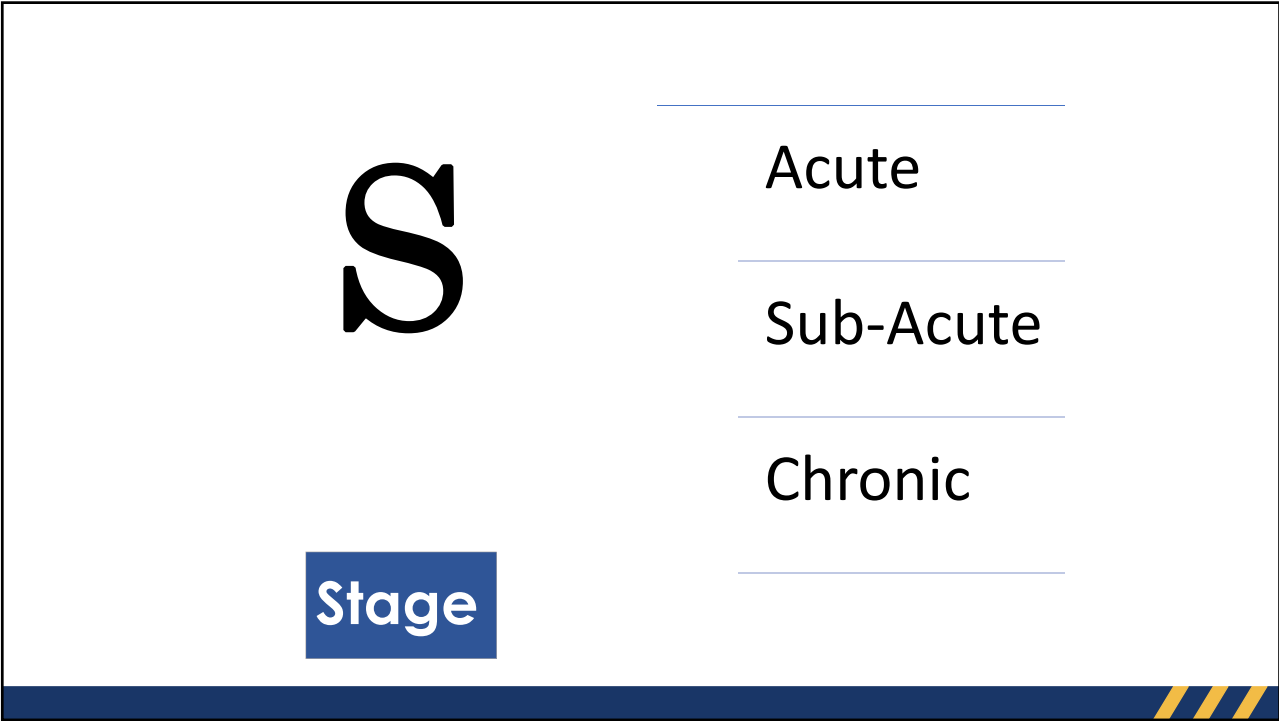
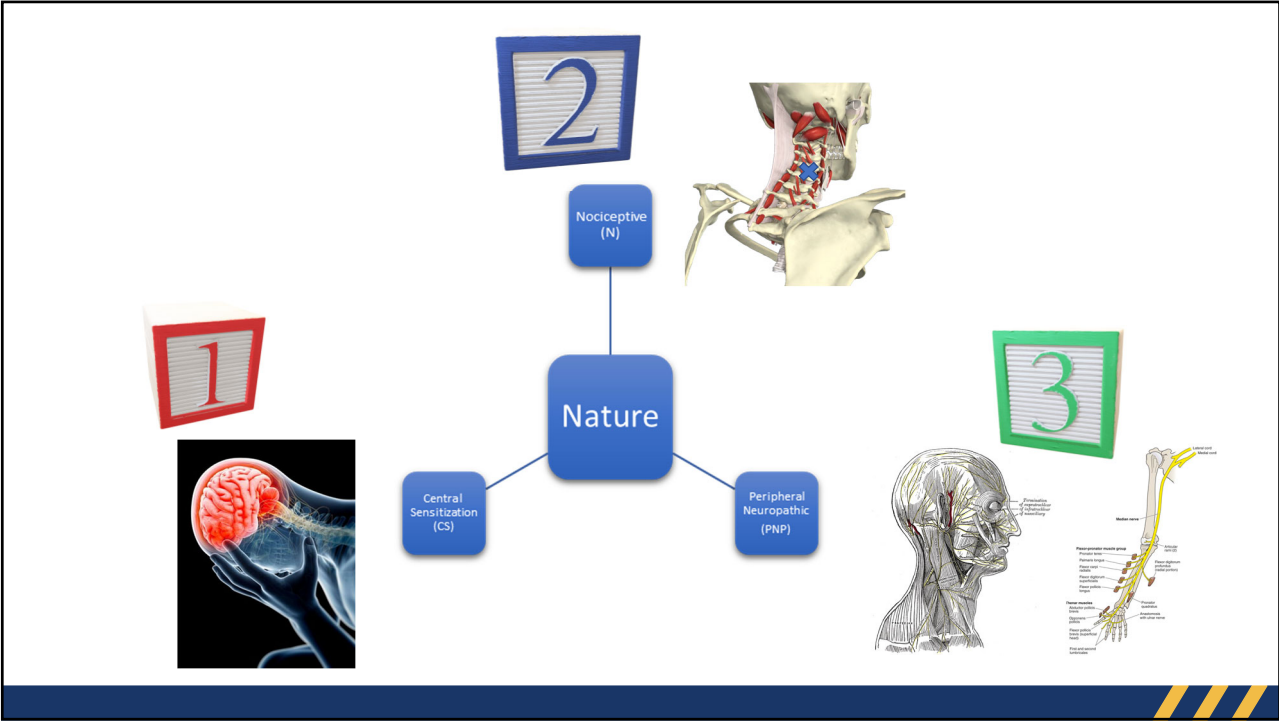
Refers to the type of tissue that is causing

the symptoms (i.e.: MSK, mechanical, inflammatory, Nerve, etc.)

Other variables such as **Yellow Flags** that may influence the examination and treatment such as high fear avoidance

Nature





S

Worsening

Improving

Stabilized

Volatile

Reproducible

Stability

Patient response model

How do you know if the approach is effective?

Test

Treat

Re-Test

Importance of Systematic Approach to Collecting Information

- Potential to improve patient outcomes
 - Static parallel, static sequential with verification, static sequential with verification and confirmation, **dynamic** (Peleg et al., 2000)
 - High-risk or normal operation
- Improve processes for care (Hewson and Burrell, 2006)
- Improve safety (Lingard et al., 2008)

Importance of Systematic Data Collection and Analysis (Winters et al., 2009)

Barriers:

- Provider resistance (insult to intelligence)
- Delays in dissemination and integration of clinically impactful info
- Limited methodology
- Developing and maintaining these skills
- Lack of technical strategies

Case History:

- A 55 y/o female presents to PT with a 2-week history of R sided LBP. She noticed these symptoms the day after a particularly physically challenging workday. She works full time as an Amazon picker. She is unable to work without pain and has not been able to perform her hobbies (yardwork, working in greenhouse) due to symptoms. She presented to physical therapy today and scored an 18 on the FABQ. She describes her pain as a constant, dull ache but can be sharper at times. Symptoms intensity are described as 2-4-8/10. Bending immediately increases symptoms 5/10, heavier lifting increases to 6/10. Symptoms improve when in supine position within 10 minutes to 2/10. Symptoms typically follow this pattern, but some days feels unpredictable. Overall, symptoms are described as “mostly frustrating” but at times “disabling”.

Case History:

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Clinical Reasoning:

- S: Severity
- I: Irritability
- N: Nature
- S: Stage
- S: Stability



- Clarifying Questions
 - Is this limiting you day to day?
 - Is this annoying? Or limiting? Or both?

Clinical Reasoning:

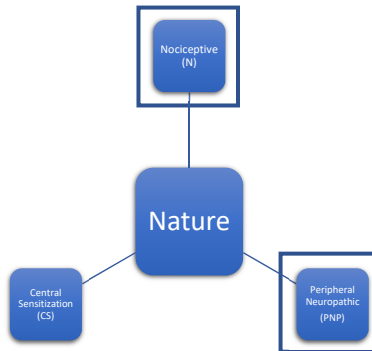
- S: Severity
- I: Irritability
- N: Nature
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- S: Stability



- Clarifying Questions
 - How bad are the symptoms if provoked?
 - How long does this give you symptoms if it is provoked?
 - How much activity does it take to bring on the symptoms?

Clinical Reasoning:

- S: Severity
- I: Irritability
- N: Nature
- S: Stage
- S: Stability



- Clarifying Questions
 - Is there one area of discomfort that is the most uncomfortable?
 - What does the symptom feel like?
 - Is it deep? Or superficial?
 - Do you have all your symptoms at the same time or separately?

Clinical Reasoning:

- S: Severity
- I: Irritability
- N: Nature
- S: Stage
- S: Stability



- Clarifying Questions
 - When did this start?

Clinical Reasoning:

- S: Severity
- I: Irritability
- N: Nature
- S: Stage
- **S: Stability**



- Clarifying Questions
 - Have your symptoms changed recently?
 - Do you feel this is getting better, worse, or staying the same?

Summary – Therapist Thinking

- Hypothesis:
- Plan for the exam:
 - Lumbar safety tests
 - Neuro screen
 - Functional movement
 - AROM/PROM
 - Lumbar/ lower quarter palpation
 - Special tests
 - Segmental mobility testing

Summary – Now What?

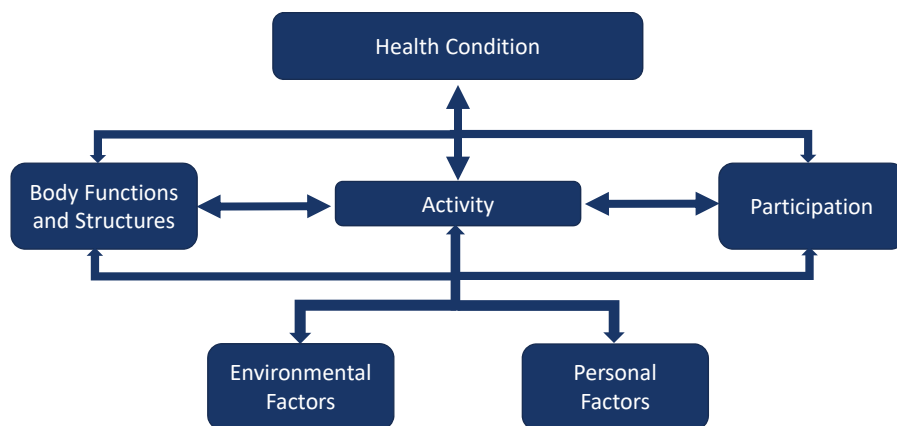
- Proceed with your exam based off your priorities for examination
- Review your objective info
- Our next modules will discuss
 - Strategies to improve your critical thinking and decision making
 - Clinical examination
 - CPG integration



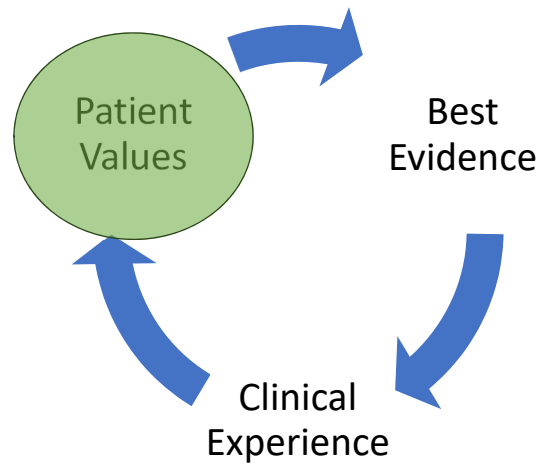
Critical Thinking with Lumbopelvic Presentations

International Classification of Functioning (ICF), Disability and Health Model (Steiner et al., 2002)

- Patients' function is a dynamic interaction of:
 - Health conditions
 - Environmental factors
 - Personal factors
- Considers biopsychosocial factors of disability



Critical Thinking: Evidence Informed Practice



Critical Thinking: Components

- Data analysis/ hypothesis generation
- Clinical judgements
- Problem solving
- Evidence
 - What you already know
 - New searches
- Reflection
 - Reappraisal
- Communication
- Ethics

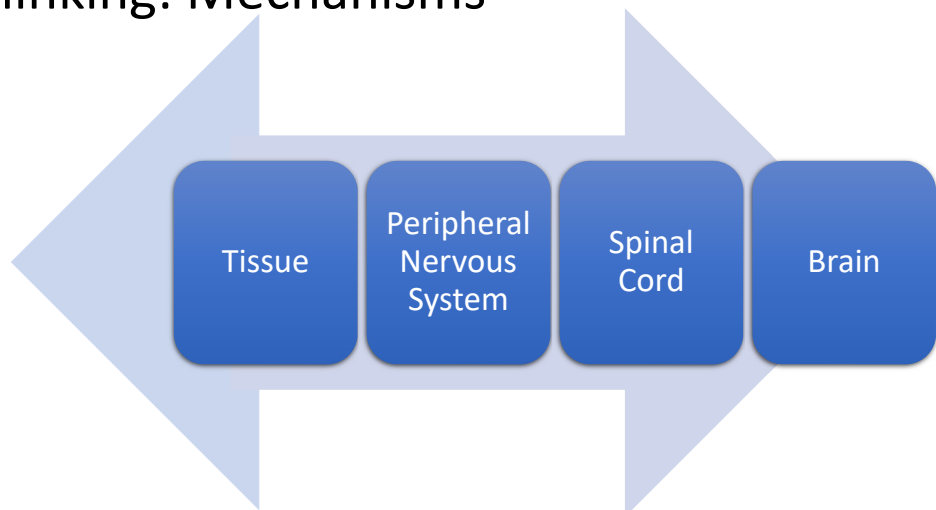


Critical Thinking: Lumbopelvic Reflective Questions

- What system (central, neuropathic, nociceptive) am I treating?
- What classification process am I following?
- What pattern does the presentation follow?
- What techniques, exercises and various other treatments do I use?
- What rationale am I using to justify treatment?
- How do I know if I am being effective short term and long term?

Critical Thinking: Mechanisms

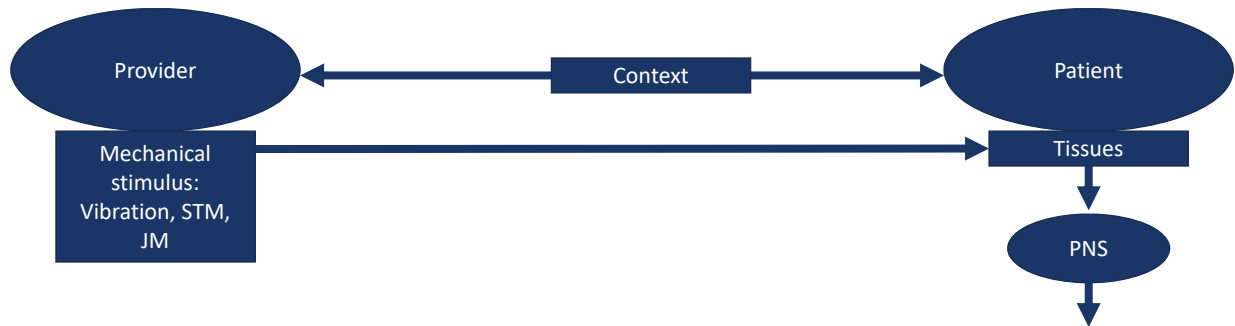
- Brain
- Spinal
- Peripheral



Critical Thinking: Mechanisms Introduction

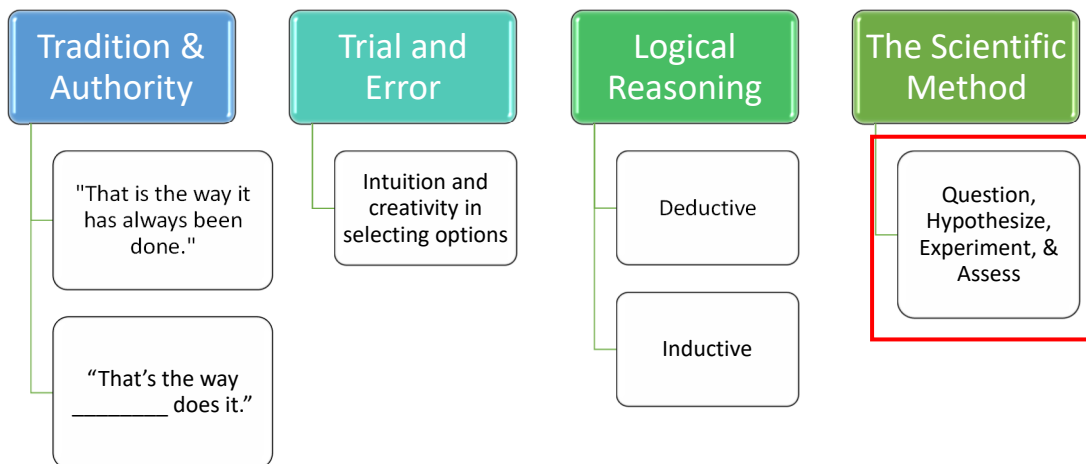
(Bialosky et al., 2018)

- Most important information is patient's verbal account (Engel 1977)



Critical Thinking: Information Sources

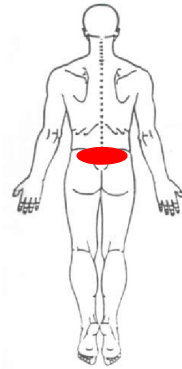
(Wainwright, Shepard, Harman, 2011)



Cervicothoracic

Critical Thinking: Integration

- What all is contributing to symptoms here for my patient?

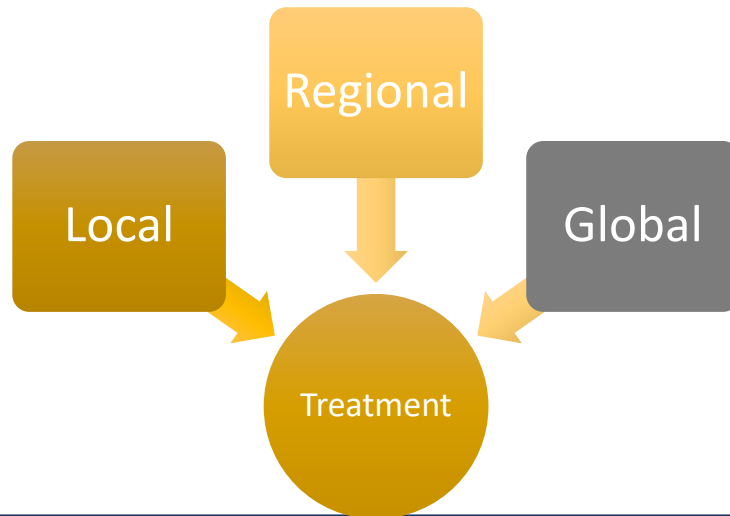


Critical Thinking: Classification Systems

Mechanism Based Classification System (Smart et al. 2012)

- **Nociceptive Pain'** (NP) refers to pain attributable to the activation of the peripheral receptive terminals of primary afferent neurons in response to noxious chemical, mechanical or thermal stimuli.
- **Peripheral Neuropathic Pain'** (PNP) refers to pain arising from a primary lesion or dysfunction in the peripheral nervous system
- **Central Sensitization Pain'** (CSP) refers to pain arising from a dominance of neurophysiological dysfunction within the central nervous system

Critical Thinking: Assessment

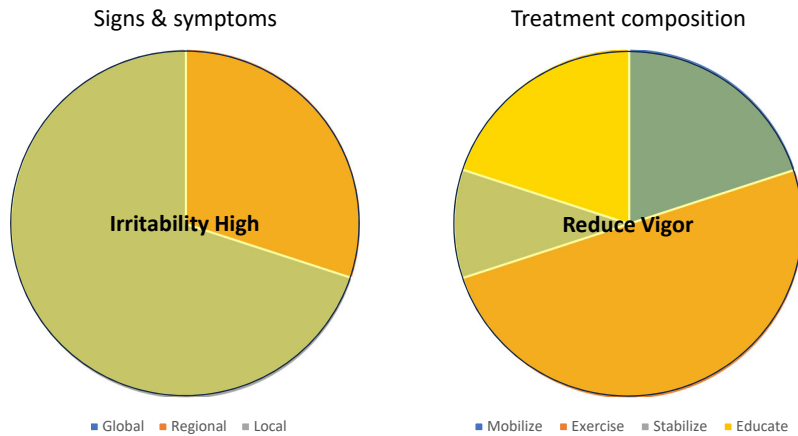


Critical Thinking: Treatment

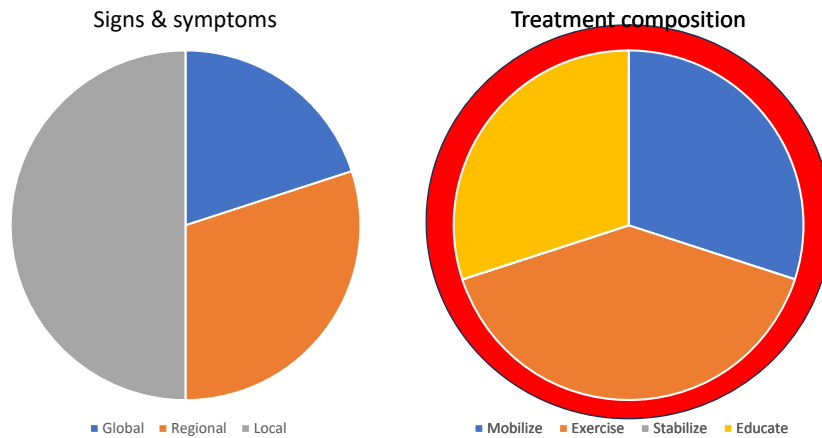
Initial Treatment

- What is my priority and why?
 - Mobilize
 - Exercise
 - Stabilize
 - Educate
 - Dry needle
 - Other
- What is the patient's prognosis?

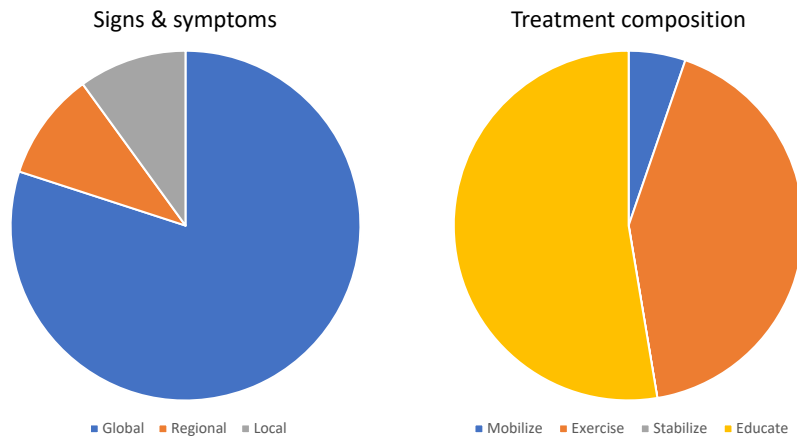
Critical Thinking: Patient X Priorities



Critical Thinking: Patient Y Priorities



Critical Thinking: Patient Z Priorities



Critical Thinking: Summary

- Process centered around achieving mutually agreed upon goals
 - Communication is key
- Establishing prioritized visit agenda is important for efficiency
 - Clinical efficiency is a component of prognosis
- Reflection on action/inaction is key to clinical reasoning progression
 - Did they respond typically or atypically
 - May require reprioritization
 - Clinician confidence in choices influences your patient education delivery



Thank You



Clinical Decision Making with
Clinical Practice Guidelines

Clinical Decision Making: Overview

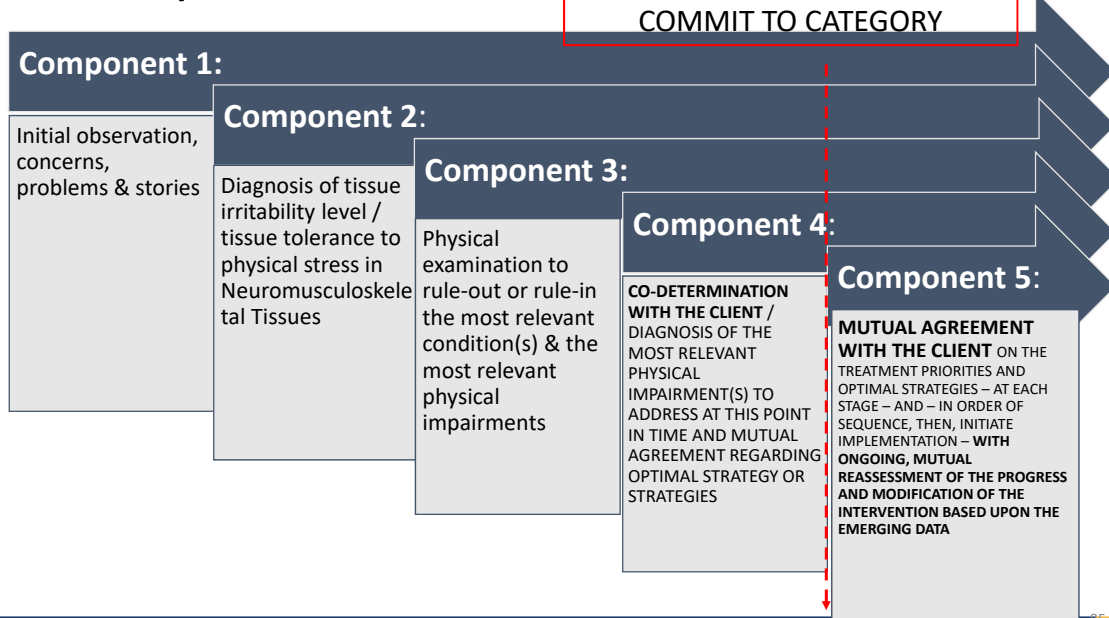
- Evidence to practice gaps can waste healthcare resources (Lin et al., 2020)
- Guide patient decision making and inform stakeholders about best practice (Steinberg et al., 2011)
- Concordant care gets better outcomes cheaper (Childs et al., 2015 & Rutten et al., 2010)
- Reduces diagnostic error (Lawson and Daniel, 2011)

Clinical Practice Guidelines: (George et al., 2021)

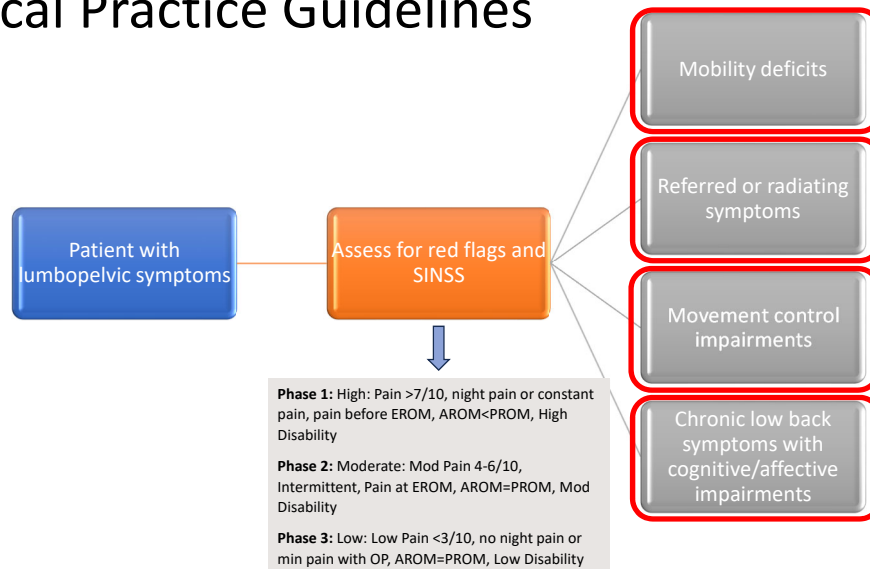
Interventions for the Management of Acute and Chronic Low Back Pain: Revision 2021

Clinical Practice Guidelines Linked to the International Classification of Functioning, Disability and Health From the Orthopaedic Section of the American Physical Therapy Association

5 Components of Evaluation and Intervention



Clinical Practice Guidelines



Clinical Practice Guidelines

Mobility deficits	Referred or radiating symptoms	Movement control impairments	Chronic LBP with cognitive/affective impairments
<ul style="list-style-type: none">• Lower thoracic or lumbar range of motion limitations• Low back and low back-related lower extremity symptoms reproduced with<ul style="list-style-type: none">• End-range spinal motions, and• Provocation of the involved lower thoracic or lumbar segments	<ul style="list-style-type: none">• Acute low back pain (LBP) with buttock, thigh or leg pain• Aggravated by flexion and sitting• Radiating: LBP with associated pain in lower extremity, lower extremity neural symptoms may be present	<ul style="list-style-type: none">• Acute exacerbation of LBP commonly associated with referred LE pain• LBP in mid-range worsens at end range• Reproduced over lumbar segments• May be hypermobile, may have mobility deficits in thoracic/lumbar/hip• Diminished strength and endurance• Movement coordination impairments while performing self-care/ home management activities	<ul style="list-style-type: none">• No clear pathoanatomical classification (e.g., they do not fit on of the other 3 pathoanatomical subgroups)• Orebro score >105• Disproportionate, non-mechanical and unpredictable pattern of symptom provocation in response to multiple/ non-specific/ aggravating and easing factors• Pain disproportionate to the nature and extent of injury or pathology• Strong association with maladaptive psychosocial factors (e.g., negative emotions, poor self-efficacy, maladaptive beliefs and pain behaviors)

Clinical Practice Guidelines

Mobility deficits
<ul style="list-style-type: none">• Lower thoracic or lumbar range of motion limitations• Low back and low back-related lower extremity symptoms reproduced with<ul style="list-style-type: none">• End-range spinal motions, and• Provocation of the involved lower thoracic or lumbar segments

Clinical Practice Guidelines

Referred or radiating symptoms

- Acute low back pain (LBP) with buttock, thigh or leg pain
- Aggravated by flexion and sitting
- Radiating: LBP with associated pain in lower extremity, lower extremity neural symptoms may be present

Clinical Practice Guidelines

Movement control impairments

- Acute exacerbation of LBP commonly associated with referred LE pain
- LBP in mid-range worsens at end range
- Reproduced over lumbar segments
- May be hypermobile, may have mobility deficits in thoracic/lumbar/hip
- Diminished strength and endurance
- Movement coordination impairments while performing self-care/home management activities

Clinical Practice Guidelines

Chronic LBP with cognitive/affective impairments

- No clear pathoanatomical classification (e.g., they do not fit on of the other 3 pathoanatomical subgroups)
- Orebro score >105
- Disproportionate, non-mechanical and unpredictable pattern of symptom provocation in response to multiple/ non-specific/ aggravating and easing factors
- Pain disproportionate to the nature and extent of injury or pathology
- Strong association with maladaptive psychosocial factors (e.g., negative emotions, poor self-efficacy, maladaptive beliefs and pain behaviors)

Clinical Practice Guidelines:

Movt. Control deficits	Loose control	Reduce fear of movt. Passive & active graded E. NMR for dynamic stab. in mid-range posns. Promote active rest. Ed. on 5x alleviating posns & maintain activity. Consider pelv. tilts in various posns to find neutral spine posn. Press ups, ant. tilt, nrm control training. Variety of Functional posns. Sit, sit 2, stand, bending etc.	Ex. to address trunk & pelvic region mm. strength & endurance deficits. Reinforce with fx training-bending, squatting, lifting, slump sitting, etc. Progress with pt specific fx demands applying movt awareness principles. Progress range & load for NMR	Ok to utilize MT sparingly but avoid pt over reliance & focus on pt empowerment of pl control. Community/work integration & ed. on pl Mx. Fx activities such as lifting & carrying. Gen fitness activities such as walking. Sport-specific activities
	Tight control	Reduce fear of movt. Change belief system that F or relaxation of the "core" is bad, alignment. Passive to active graded F, Sx, PPT in variety of posns. Progress to variety of Fx posns. MT to address identified Tx, rib, Lx/pelvic or hip mob. deficits	Graded exposure to specific activity & relaxation. Reinforce with functional training-bending, lifting, squatting, dead lift, slump sitting, sleeping positions	Ok to utilize MT sparingly but avoid pt over reliance & focus on pt empowerment of pl control. Community/work integration & ed. on pl Mx. Fx activities such as lifting & carrying. Gen fitness activities such as walking. Sport-specific activities
	SI loose	Neuromuscular re-ed to promote dynamic stability in mid-range positions. Education on symptom alleviating positions & maintaining an active lifestyle. Manual therapy to address identified thoracic, rib, lumbopelvic or hip mobility deficits.	Progress range & load for neuromuscular re-ed activities. Exercise to address trunk & pelvic region muscle strength & endurance deficits	Community/work integration & education on pain management. Functional activities such as lifting & carrying. General fitness activities such as walking. Sport-specific activities
	SI tight	Treatments consist of general as well as targeted relaxation strategies, breathing control, muscle inhibitory techniques, enhancing pain/re/relaxed spinal postures, pacing strategies, hydrotherapy, cessation of stab. ex training, & a focus on CV ex.	Graded exposure to flexion activity & relaxation. Reinforce with functional training-bending, lifting, squatting, dead lift, slump sitting, sleeping positions	Community/work integration & education on pain management. Functional activities such as lifting & carrying. General fitness activities such as walking
CLBP	Central sensitization	Fx Movt Phase. Normalize Fx behav with grad expos. to prev. pl provoc. tasks - in a non-provoc. way. Modification of postures, movt patterns, & levels of mm guarding & perception of meaning of pl & discouraging pl behav. Use MT PRN. Consider manip./mob. & n. mob.	Fx integration. Integrate Fx into problem daily tasks specific to pt's Fx impairments. Restore normal Fx movt capacity & enhance b. awareness; reduce avoidance, pl behav & fear by means of pl control & confrontation in ADL's. Address conditioning	Physical activity & lifestyle training. Advice on physical activity, sleep hygiene, & stress management. Encourage physical exercise 3-5 times a week. If they were not previously doing so. Gradually increase to 20-40 minutes' duration.
	Other	Perform ongoing reassessment or move to a different category. Assess functional movement patterns for relevant mobility & strength deficits needed & address. Formal PNE & progressive graded exposure. Consider referral for adjunctive medical management	TX or MT for reduction of Sx. Ed. on positions to reduce compression. Activities to encourage movt & physical activity levels. TX & NMR to improve & maintain spinal & hip mob, dynamic stability & strength/ endurance deficits; progress with change of position & BOS	Community/work reintegration training. Education on exercise & long-term management. Re-use activities such as walking, running, lifting. Work or sport specific activities

Clinical Decision Making: CPGs (George et al., 2021)

Manual Therapy Grade	Impairment	Year of guidance
A	Physical therapists should use thrust or nonthrust joint mobilization to reduce pain and disability for Acute and CLBP	2021
B	Physical therapists may use thrust or nonthrust joint and STM mobilization to reduce pain and disability in patients with CLBP	2021
B	Physical therapists may use soft tissue mobilization or massage in conjunction with other treatments to reduce pain and disability in the short term for patients with chronic LBP.	2021
B	Physical therapists may use massage or soft tissue mobilization for short-term pain relief in patients with acute LBP	2021
B	Physical therapists may use neural mobilization in conjunction with other treatments for short-term improvements in pain and disability in patients with chronic LBP with pain	2021

[List of APTA CPGs](#)

Clinical Decision Making (Franco et al., 2020)

Pro (big):

- Guidance is very important
 - Completed with sound methodology to reduce bias
 - However, CPGs often rely on trials that focus on efficacy versus pragmatism

Limitations:

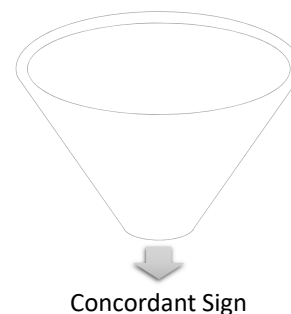
- Multiplicity of CPGs
- Isolated to single condition
- Conflicts of interest of authors
- Patient involvement
- Quality of publication
- Often vague
 - “C - Clinicians may use therapeutic exercises or activities to address joint mobility, muscle flexibility, and muscle strength deficits identified...”
 - Information like this still requires **sound clinical reasoning** throughout the management plan

Clinical Decision Making and Clinical Practice Guidelines: Summary

- Consistent messaging across musculoskeletal care (Lin et al., 2020)
 - Should be patient centered
 - Screening for serious pathology/ red flags
 - Assess psychosocial factors
 - Radiological imaging discouraged
 - Undertake physical exam
 - Evaluate with outcome measures
 - Provide patients with education
 - Provide management addressing physical activity and/or exercise
 - Apply manual therapy as an adjunct
 - Offer nonsurgical care before surgery
 - Facilitate continuation or resumption of work

Clinical Decision Making and Clinical Practice Guidelines: Summary

- Must integrate versus isolate clinical practice guidelines
- Many guidelines exist for low back pain.
 - They have *value*, but also *limitations*
- Further triage of signs and symptoms with greater specificity is still prudent
- Make a plan to stay up to date





Thank You

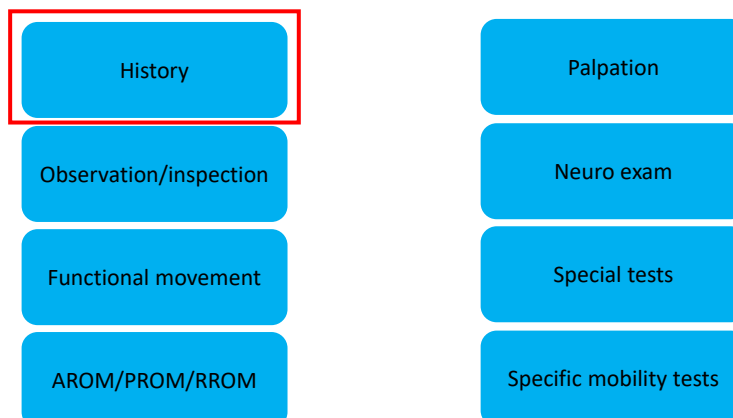


Clinical Examination Guide

Clinical Examination: Key Goals

- Purpose
 - Understand your patient's goals for seeking treatment
 - Identify your patient's symptoms
 - Identify impairments that may impact symptoms and/or function
 - Identify contributing factors
 - Functional
 - Behavioral
 - Occupational
 - Determine threshold for treatment
 - Needs to consider the meaning of findings to patient

Clinical Examination: Components



Clinical Examination: History

- Key questions:
 - “What problem can I help you with today?”
 - “What is your understanding of this problem?”
 - “How does effect your life?”
 - “How will you measure success of treatment?”

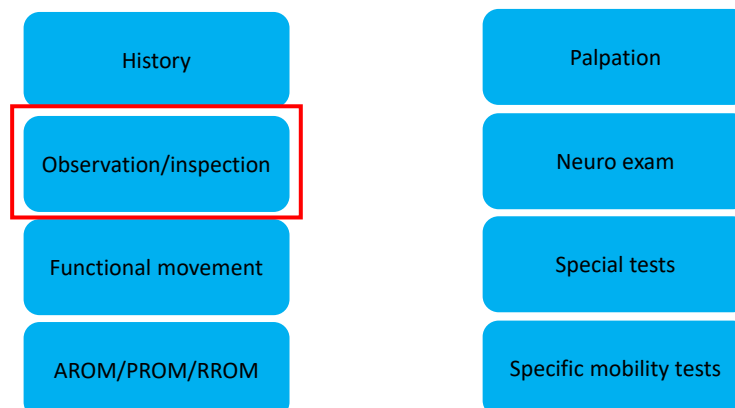
Clinical Examination: History

- Current history
 - Symptom onset
 - Details of mechanism
 - Known/unknown
- Behavior of symptoms
 - Aggravating and easing factors
 - Structure specific questioning
- 24-hour pattern:
 - First thing on waking before movement
 - Upon rising - description, duration, easing factors
 - Pain through the day
 - Night pain
 - Sleep patterns - including falling to sleep and when up at night
 - What activities are limited/symptomatic
 - Vocational, Recreational, ADLs
- Body chart review
 - Pain score (VAS)
 - Symptom description
 - Area of pain
 - Depth of pain
 - Continuous vs. intermittent
 - Presence of neurological symptoms
 - Compression vs irritation
- Past history
 - Any previous problems in this or related areas
 - First episode in detail
 - Previous management and results
 - Frequency, duration, and results of subsequent episodes
 - Changes in the above as time goes on

Clinical Examination: History

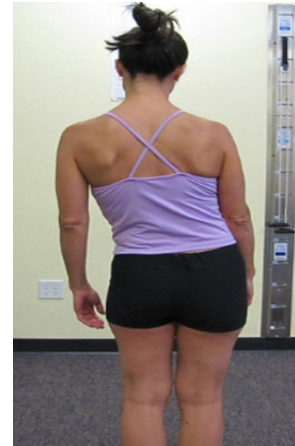
- Special questions:
 - Specific questions related to:
 - Adjacent regions marked
 - Unrelated regions marked
 - Other body systems – ex. Visceral referral
 - General health
 - Medications for this and other conditions
 - Diagnostic tests or procedures
- Flag related special questions:
 - Bilateral symptoms
 - Constant symptoms
 - Unexplained weight loss
 - Night pain
 - Age >50
 - Prior Hx CA
 - Constitutional signs/symptoms- fever, chills, malaise, etc.
 - Does not fit musculoskeletal pattern
 - Pain unchanged with thorough treatment

Clinical Examination: Components



Clinical Examination: Observation/Inspection

- Tone
- Scars
- Blemishes
- Color
- Sweat
- Movement patterns/behavior
- What are we looking for?
 - Abnormalities
 - Willingness to move
 - Asymmetry
 - Impairment



Clinical Examination: Components

History

Observation/inspection

Functional movement

AROM/PROM/RRROM

Palpation

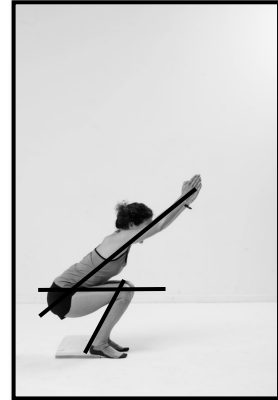
Neuro exam

Special tests

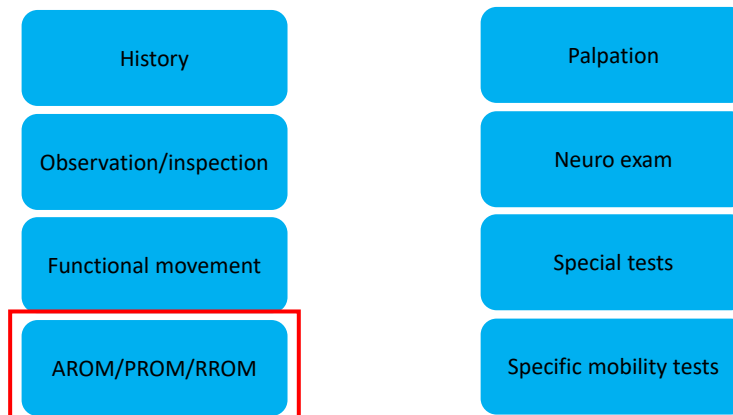
Specific mobility tests

Clinical Examination: Functional Movement

- “Show me what brings on your symptoms?”
- What are you looking for?
 - Patient’s symptoms
 - Willingness to move
 - Impairments
 - Functional
 - ROM
 - Strength
 - Coordination
 - Motor control

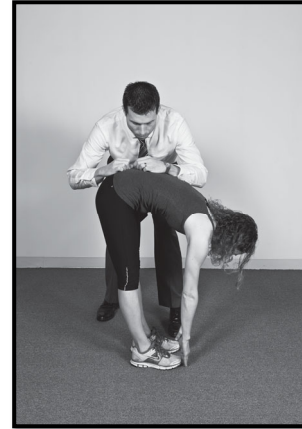


Clinical Examination: Components

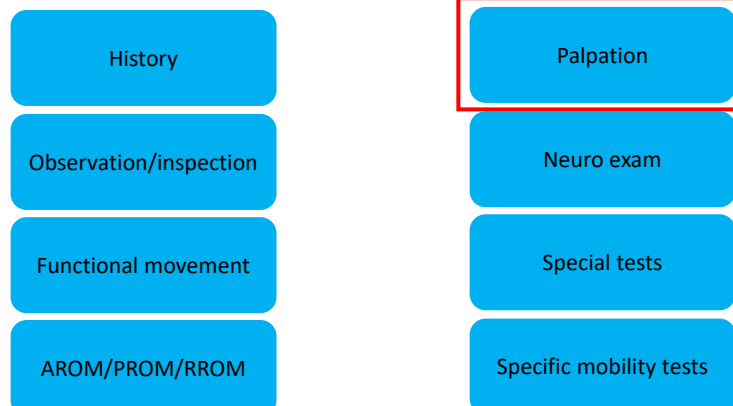


Clinical Examination: AROM/PROM/RROM

- AROM
- PROM
- Resisted ROM
- Repeated ROM
- What are we looking for?
 - Symptoms
 - Quality
 - Willingness to move
 - End feel
 - Impairments
 - Hypo vs. hyper
 - Motor control
 - Strength/quality of contraction



Clinical Examination: Components

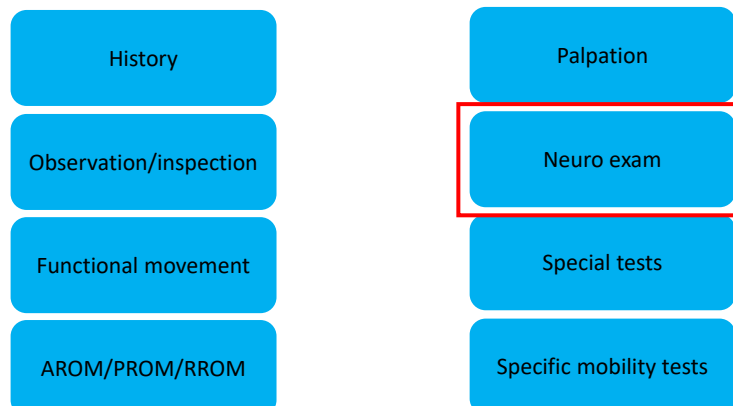


Clinical Examination: Palpation

- Muscle
 - Bone/landmarks
 - Tendons
 - Ligaments
 - Joint lines
 - Skin
 - Nerve
 - Other – scar, fat pad, cysts, etc.
- What are we looking for?
 - Patient's symptoms
 - Tissue quality
 - Pliability
 - Traction
 - Thickness
 - Tone
 - Willingness to load

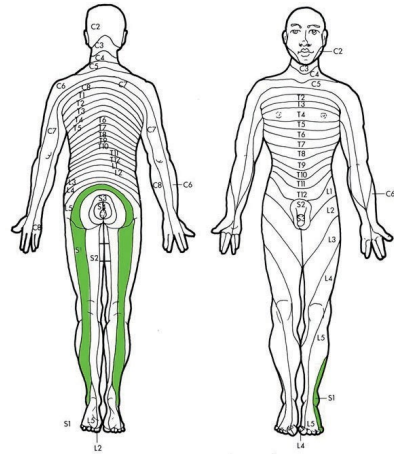


Clinical Examination: Components



Clinical Examination: Neuro Exam

- Dermatomes
- Myotomes
- Reflexes
- Neurodynamic tests
- Upper motor neuron screen - PRN
- What are we looking for?
 - Normal vs. abnormal
 - Hyper/hypo
 - Rule in/out neural involvement
 - Impairments



Clinical Examination: Components

History

Observation/inspection

Functional movement

AROM/PROM/RROM

Palpation

Neuro exam

Special tests

Specific mobility tests

Clinical Examination: Special Tests

- Relevant special tests
- What are we looking for?
 - Patient's symptoms
 - Provocation or relief
 - Structural differentiation
 - Impairments



Clinical Examination: Components

History

Observation/inspection

Functional movement

AROM/PROM/RROM

Palpation

Neuro exam

Special tests

Specific mobility tests

Clinical Examination: Specific Mobility Tests

- Joint play/movement
 - Physiologic
 - Accessory
- What are we looking for?
 - Reproduction of symptoms
 - Impairments
 - Hypomobility
 - Hypermobility
 - Willingness to move



Clinical Examination: Components

History

Observation/inspection

Functional movement

AROM/PROM/RRROM

Palpation

Neuro exam

Special tests

Specific mobility tests

Case History:

- A 55 y/o female presents to PT with a 2-week history of R sided LBP. She noticed these symptoms the day after a particularly physically challenging workday. She works full time as an Amazon picker. She is unable to work without pain and has not been able to perform her hobbies (yardwork, working in greenhouse) due to symptoms. She presented to physical therapy today and scored an 18 on the FABQ. She describes her pain as a constant, dull ache but can be sharper at times. Symptoms intensity are described as 2-4-8/10. Bending immediately increases symptoms 5/10, heavier lifting increases to 6/10. Symptoms improve when in supine position within 10 minutes to 2/10. Symptoms typically follow this pattern, but some days feels unpredictable. Overall, symptoms are described as “mostly frustrating” but at times “disabling”.

Clinical Reasoning Worksheet – Why?

- What we think is important, may not be important to patient
- Meaning of impairment may be motivation to improve the impairment
- Consider having patient map out what their priorities would be
- The patient’s measuring stick for success may need reframing with reality
- Flag status: if you screen, prepare to intervene
- Consult with other medical providers if necessary

Case History:

- Objective presentation:
 - Flattened Lx Lordosis
 - Lx flex: poor curve reversal – 25% ROM – [+] low back pain**
 - Lx ext: poor lumbar movement – 25% ROM [+] low back pain – Sharp**
 - Lx SB R: 50% L: 25%
 - Lx ext quadrant R: [+] R Lumbar pain**
 - Lx flex: 10 reps increases lumbar and buttock pain
 - Lx ext: 10 reps increases lumbar pain, no buttock pain
 - Negative neurology
 - Positive Slump **
 - Painful palpation R L3-S1
 - Painful palpation R iliolumbar ligament**
 - Negative SIJ Testing/palpation
 - Hypomobile R L4-S1 UPA** and R Rotation
 - Hypomobile L L5-S1 UPA
 - Hypomobile L1-3 L Lx Rotation

Clinical Reasoning Worksheet

Subjective (Patient History) Reasoning

- What is most important to the patient? Working pain free
- What is the patient's primary symptom? Right back and buttock pain
- Primary functional complaint? Standing, walking, bending
- What is the patient's understanding of their symptoms? Unsure
- What is their biggest worry/concern regarding their pain/limitations? Afraid she needs surgery
- How will they measure success of PT? Able to return to work with less pain
- Are there any biopsychosocial factors that may contribute to the patient's presentation?
 - Yes/No – If yes - how does this impact your POC.
 - Little impact |-----X-----| Significant impact

Hypothesis Generation

- Is this a MSK case? Yes/No/Unsure. Reasoning: Symptoms fit a pattern/reproducible/relieving positions
- Is it appropriate for PT? Yes/No/Unsure
 - Reasoning: If no, in medical terms, write why they are not appropriate for PT. Write it as if you were providing that info to another medical discipline (MD/NP/PA) for this patient.

Clinical Reasoning Worksheet

Please rank the following based on your subjective assessment.

Severity: Severe |-----X-----| Not Severe

Irritability: Irritable |-----X-----| Not Irritable

Nature (type of pain descriptor): Range 1-3 according to priority with 1 being top priority.

Nociceptive: 1 Peripheral Neuropathic: 2 Central Sensitization: 3

Stage: Acute |-----X-----| Chronic

Stability: Stable |-----X-----| Not Stable

What is your clinical hypothesis for the patient's symptoms?

Primary: R L4-S1 Region disc sensitivity

Secondary: Iliolumbar lig sensitivity/R L4-S1 Facet sensitivity

List key subjective evidence supporting your hypothesis:

Age / pain location/ pain with WB/Relief in gravity eliminated positions / + R extension quadrant / + Slump /

Negative neurology

Clinical Reasoning Worksheet

- Regional Factors – List your impairments that are relevant in adjacent regions.:
 - Thoracic/Ribs
 - SIJ
 - Hip
 - Knee
 - Foot/Ankle
 - Shoulder
 - Scapulothoracic
- Global Factors – List any global impairments that may impact your patient's presentation/progress.:
 - Conditioning/Physical nature of work/Inability to stop or alter work
- Does a Clinical Practice Guideline exist for this patient's presentation? Yes/No
- If Yes: Which one?
 - Mobility deficits/Radicular symptoms/Movement control impairment

Treatment Initiation

- Initial Manual Therapy Treatment(s): **R L4-S1 UPA III**
- Initial Exercise Treatment(s) (with dosage):
 - **Posterior pelvic tilt – 2x 30 mid ROM**
 - **Lower trunk rotation – 2x 30 mid ROM**
- What do you expect to retest? +/- What do you expect to change (by what %?)?
 - **25% reduction in symptoms – Lumbar flex/ext**
- How did you explain your diagnosis to your patient?
- What is your POC Freq?/Why? **3x/wk**
- What is your estimated POC duration? **8 weeks**
- List any barriers to progression?
 - **Work Limitations/Histology**

Treatment Initiation

- Follow up visits: **3 visits per week – set the expectation for next session**
- Why do they need to come back? **Tomorrow**
- What are you going to do? Treatment plan for next visit :
- What changes do you expect to occur after your initial intervention?
Symptoms have short term improvement but return
- What are your plans if the patient is better? What are your plans if the patient is worse?
Better: Repeat with 2-3 reps **Worse: Repeat with altered intensity****
- What are your plans if there is no change? How/when will you progress the patient?
Same: Repeat – Consider altering order of intervention and volume** **SINSS Follow Up**
- At what point would you decide to recommend a specialist referral/MD consult?
Rapid change in neurological status/changes in bowel/bladder/lack of significant progress***
- What would the patient rate the value they see in your care?
• No value |-----| Extreme Value
• What can you do to improve this value?

Clinical Examination: Take Home

- Be prepared to execute/interpret each component of the clinical exam.
- You do not have to do the entire clinical exam in 1 session. (presentation/condition specific)
- Consider the following questions with each case:
 - What is most important to the patient?
 - What impairments do you feel are involved?
 - What local factors do you need to consider?
 - What regional factors do you need to consider?
 - What global factors do you need to consider?
 - How will you measure success? (**Consider patient perspective)
- Reflect on your examination
 - Clinical Reasoning Worksheet



Thank You



Skillful Execution of Joint and Soft Tissue Mobilization

Skillful Execution of Joint and Soft Tissue Mobilization



- What to consider:
 - Patient positioning
 - Clinician body mechanics
 - Target of techniques
 - Force
 - Direction
 - Intensity
 - Velocity/Speed
 - Mobilization amplitude
 - Volume/bouts

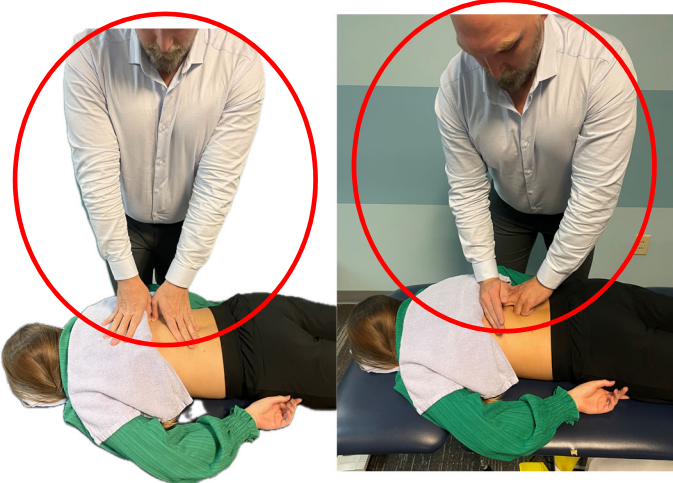
Skillful Execution of Joint and Soft Tissue Mobilization

- Patient positioning
 - Supine
 - Prone
 - Sideling
 - Quadruped
 - Kneeling
 - Sitting
 - Standing
 - Extremity Position



Skillful Execution of Joint and Soft Tissue Mobilization

- Body mechanics
 - Feet staggered
 - Mobilizer – in your line of force
 - Soft hands
 - Close to the joint
- What is moving?
 - Mobilization vs. stabilization force
 - Move your body vs. just arms



Skillful Execution of Joint and Soft Tissue Mobilization

- Target structure
 - Joint
 - Consider depth
 - Joint plane
 - Muscle
 - Consider layers of tissue
 - Capsule
 - Consider open vs. closed pack
 - Neural interfaces
 - Consider location and vasculature



Skillful Execution of Joint and Soft Tissue Mobilization

- Force Direction
 - Joint plane
 - Oscillation vs. Sustained
 - Structure depth
 - Muscle fiber orientation
 - Cross fiber
 - With fiber
- Force Intensity
 - Structure depth
 - Pt presentation/pathology
 - Precautions/contraindications
 - SINSS

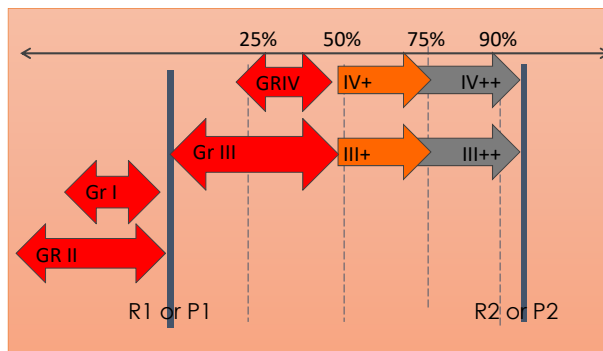


Skillful Execution of Joint and Soft Tissue Mobilization

- Velocity/Speed
 - Pt presentation
 - Pathology
 - Precautions
 - Contraindications
 - SINSS
 - Clinical Pathway
- Amplitude
 - Small
 - Medium
 - Large
 - Early range
 - Mid-range
 - End Range
- Volume
 - Stiff
 - Pain
 - Intent
 - Tissue stress
 - Neural facilitation
 - Neural inhibition
 - Pt engagement
 - SINSS

Skillful Execution of Joint and Soft Tissue Mobilization

- Amplitude



Skillful Execution of Joint and Soft Tissue Mobilization

- Lumbar Considerations
 - Lumbar distraction
 - Sustained vs. oscillation
 - Early/mid/end range
 - Lumbar Rotation
 - Sustained vs. oscillation
 - Specific vs. global
 - Lumbar paraspinal soft tissue mobilization
 - With fiber vs. cross fiber
 - Erector spinae vs. multifidus

Skillful Execution of Joint and Soft Tissue Mobilization

- **Take Home**
 - Control what you can control - There are several variable that you can modify to influence your patients.
 - Patients may respond is different ways to manual therapy.
 - Positive
 - Negative
 - Indifferent
 - You may not be good at everything. – Keep practicing
 - Manual therapy is a tool that can be effective in enhancing patient outcomes during a plan of care. – Should not be the only intervention.
 - Practice.....Practice.....Practice



Thank you!



Conclusions and Application

Conclusion and Application

1. Clinical decision making starts with determining if patient is appropriate for your clinical setting through medical screening
 - Research helps organize patterns to improve safety and efficiency
2. Anatomy and biomechanics are a starting point for identifying a primary complaint
3. Methodical use of a patient response model will improve outcomes
4. People are complex and there are known risk factors that influence prognosis and should be considered with intervention
5. Critical thinking involves many elements and requires some time for reflection

Conclusion and Application

6. Clinical decision-making frameworks exist to assist with efficiency
7. Comprehensive data collection (Clinical Examination Guide) can fill in gaps and be integrated for more specific, tailored patient management
8. Manual therapy techniques are as much of an assessment as treatment
9. Manual therapy augments or facilitates exercise programs and other aspects of treatment
10. Patients' short- and long-term improvements provide valuable evidence for patient management

Conclusion and Application: Live/ Skills Days

- Technical skill to be initiated and refined during lab
 - Manual therapy has a heavy **psychomotor** component
- Consider the concepts that did not make sense to you in this primer and bring those questions to live session

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