



Introduction to Clinical Practice Guidelines

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- Regional Clinical Excellence Director
- Orthopedic Residency Director



Purpose of Clinical Practice Guidelines

- Synthesize the literature with PT's perspectives & concerns in mind
- Altitude analogy





What it's not intended to do

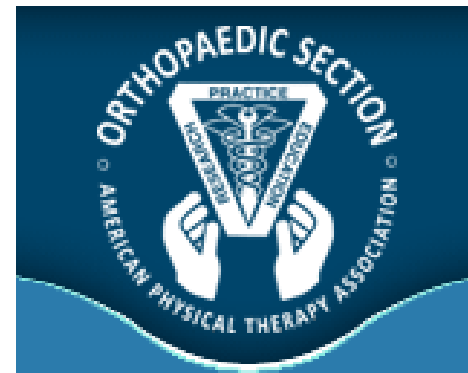
- Not a substitute for sound clinical reasoning and judgment
- CPG's do not include:
 - All clinical data for an individual patient
 - Individual patient values, expectations, and preferences





DEVELOPMENT

- APTA Orthopedic Section
 - Literature Search
- Tasks
 - Utilize ICF terminology
 - Categorize patients into mutually exclusive impairment patterns
 - Describe evidence for the identified impairment pattern classification and interventions





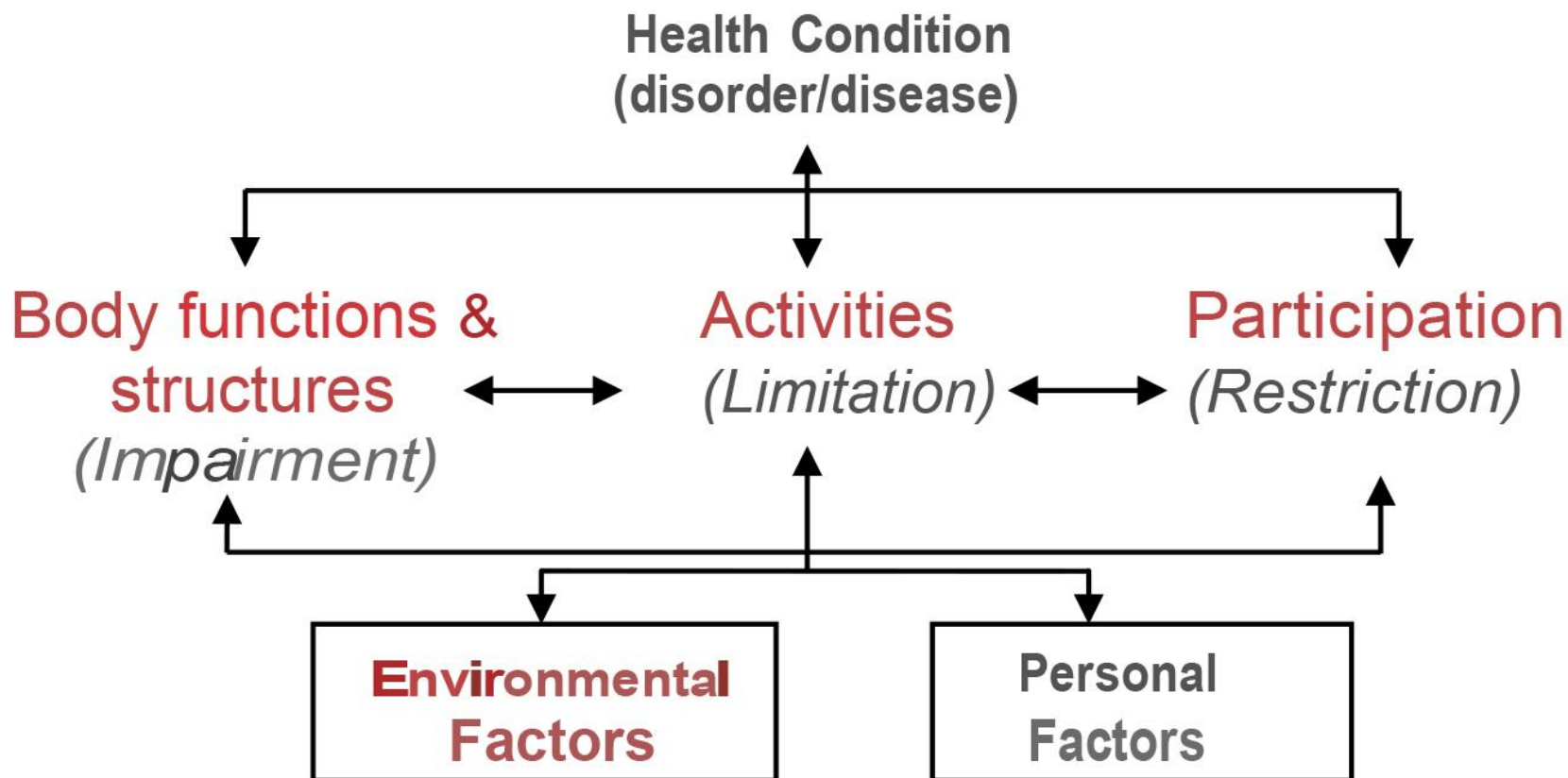
Development

I	Evidence obtained from high-quality diagnostic studies, prospective studies, or randomized controlled trials
II	Evidence obtained from lesser-quality diagnostic studies, prospective studies, or randomized controlled trials (eg, weaker diagnostic criteria and reference standards, improper randomization, no blinding, <80% follow-up)
III	Case-controlled studies or retrospective studies
IV	Case series
V	Expert opinion

GRADES OF RECOMMENDATION BASED ON		STRENGTH OF EVIDENCE
A	Strong evidence	A preponderance of level I and/or level II studies support the recommendation. This must include at least 1 level I study
B	Moderate evidence	A single high-quality randomized controlled trial or a preponderance of level II studies support the recommendation
C	Weak evidence	A single level II study or a preponderance of level III and IV studies, including statements of consensus by content experts, support the recommendation
D	Conflicting evidence	Higher-quality studies conducted on this topic disagree with respect to their conclusions. The recommendation is based on these conflicting studies
E	Theoretical/foundational evidence	A preponderance of evidence from animal or cadaver studies, from conceptual models/principles, or from basic science/bench research supports this conclusion
F	Expert opinion	Best practice based on the clinical experience of the guideline development team



ICF: Interaction of Concepts





Classification

- *Best available evidence supports a classification approach*
- *Interventions based on subgroup classification have the potential to enhance effect sizes*



Classification

- Categories Include Irritability
 - Acute (Low)
 - Sub-acute (Middle)
 - Chronic (High)

Comparison of Classification-Based Physical Therapy With Therapy Based on Clinical Practice Guidelines for Patients with Acute Low Back Pain

A Randomized Clinical Trial

Julie M. Fritz, PhD, PT, ATC,* Anthony Delitto, PhD, PT, FAPTA,*† and Richard E. Erhard, DC, PT*‡

- 78 patients with acute LBP
- Classification-based group had statistically significant improvement in outcome scores
 - Oswestry Disability Index
 - SF-36 (PCS)

Table 5. Four-Week Outcomes

Variable	Baseline (n)	Four-Week (n)	Mean Within-Group Change (SD)	Between-Group Difference (95% CI)	P Value	Adj. P Value*
Modified Oswestry						
Guideline-based group	42.8 (37)	32.4 (32)	11.6 (18.1)			
Classification-based group	42.9 (41)	21.4 (38)	22.5 (19.3)	10.9 (1.9, 19.9)	0.018	0.023
SF-36: PCS						
Guideline-based group	29.5 (36)	36.8 (32)	-8.0 (11.3)			
Classification-based group	29.7 (41)	43.0 (35)	-13.6 (9.3)	5.6 (0.6, 10.7)	0.030	0.029

Identifying Subgroups of Patients With Acute/Subacute “Nonspecific” Low Back Pain

Results of a Randomized Clinical Trial

Gerard P. Brennan, PhD, PT,* Julie M. Fritz, PhD, PT, ATC,* Stephen J. Hunter, MS, PT, OCS,* Anne Thackeray, PT,* Anthony Delitto, PhD, PT, FAPTA,† and Richard E. Erhard, DC, PT†

- 123 patients with acute/subacute LBP
- Treatment-k (TBC)
- TBC Matched groups

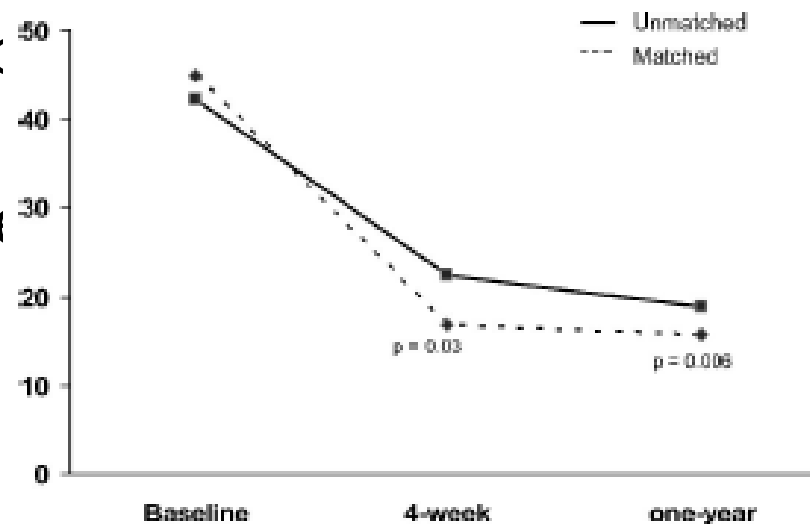


Figure 3. Oswestry scores for patients receiving matched or unmatched treatments (intention-to-treat analysis, *P* values represent differences between the baseline and follow-up scores).

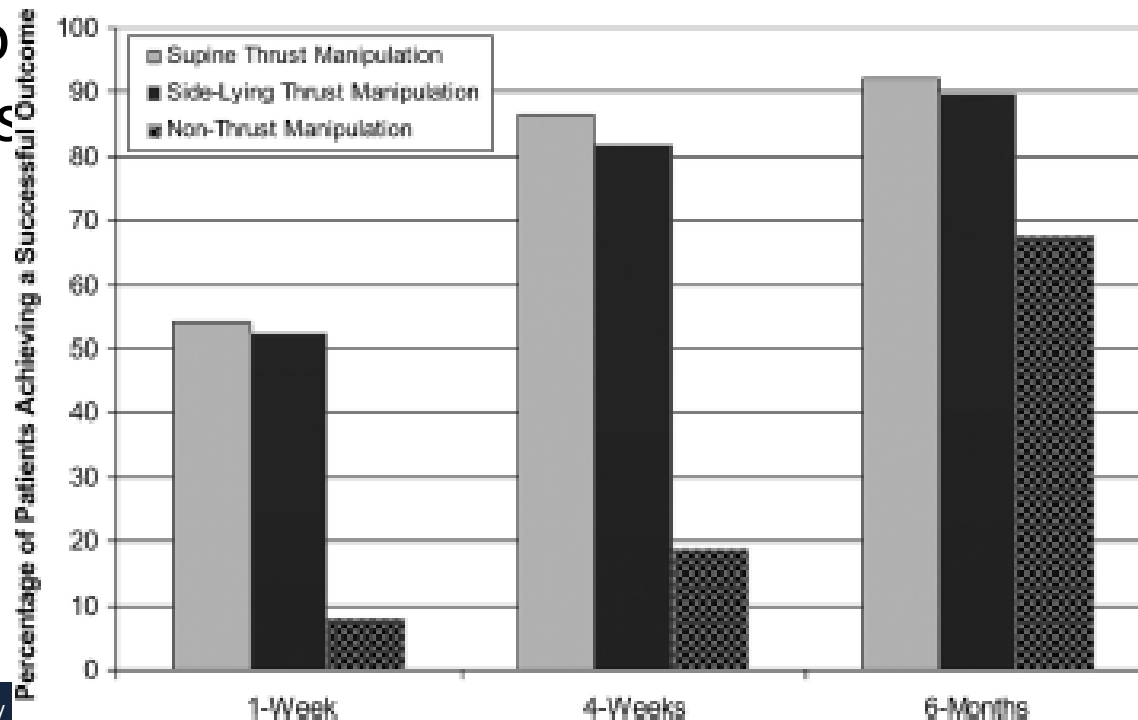


Comparison of the Effectiveness of Three Manual Physical Therapy Techniques in a Subgroup of Patients With Low Back Pain Who Satisfy a Clinical Prediction Rule

A Randomized Clinical Trial

Joshua A. Cleland, PT, PhD,*† Julie M. Fritz, PT, PhD, ATC,‡§ Kornelia Kulig, PT, PhD,¶||
Todd E. Davenport, DPT,** Sarah Eberhart, PT,† Jake Magel, PT, DSc,††
and John D. Childs, PT, PhD‡‡

- 112 patients
- Randomized into three groups





Evaluation of a Treatment-Based Classification Algorithm for Low Back Pain: A Cross-Sectional Study

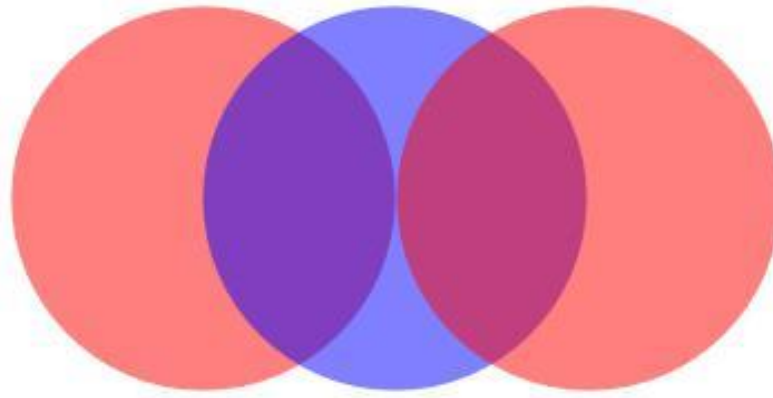
Tasha R. Stanton, Julie M. Fritz, Mark J. Hancock, Jane Latimer, Christopher G. Maher, Benedict M. Wand, Eric C. Parent

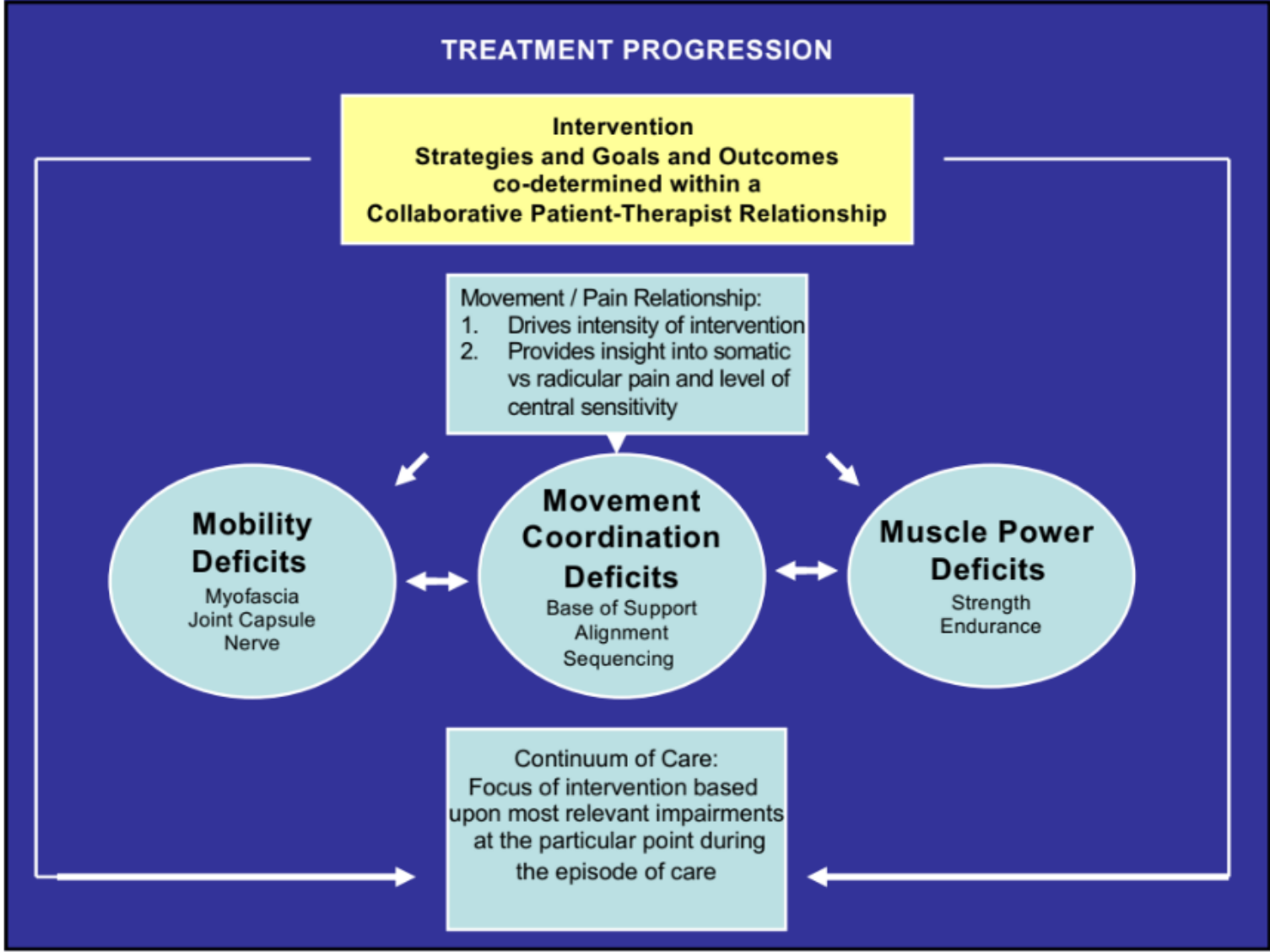
- 250 patients
- 25% did not fit into a classification
- 25% fit into more than 1 category

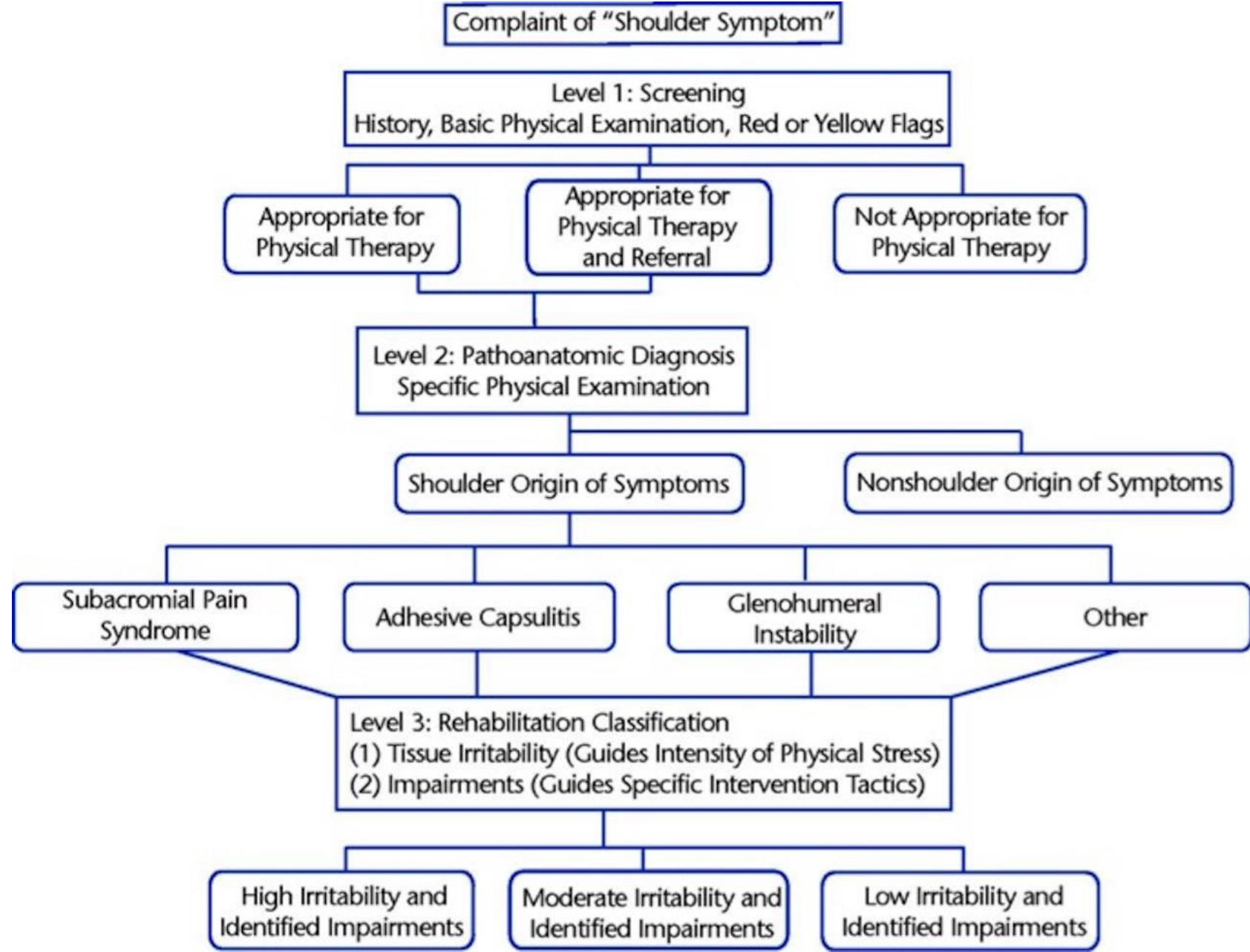


Classification

- Patients not limited to 1 category
 - Focus on most relevant impairment
 - Category can change during episode of care









Comparison of Features Between Pathoanatomic Diagnosis and Rehabilitation Classification

Pathoanatomic Diagnosis	Rehabilitation Classification
Identifies primary tissue pathology	Identifies level of irritability and key impairments
Remains stable across an episode of care	Typically changes over an episode of care
Guides a general treatment strategy <ul style="list-style-type: none">•Surgery or nonoperative care?•Key tissue and movement precautions?	Guides specific rehabilitation intervention <ul style="list-style-type: none">•Appropriate intensity of physical stress?•Key impairments driving symptoms and loss of function?
Informs prognosis	May inform prognosis



Target on our Backs

- *“Reducing Unwarranted Clinical Variation is essential to creating Value-based health systems which drive standards up and costs down... The Grand Champions of clinical variation are the physical therapists” (Bloomberg News 2019)*

- Brent James M.D.

Former Chief Quality Officer at Intermountain Healthcare





So What Can We Do?

“Unwarranted Variation in Clinical Practice is the greatest challenge to the Value of Physical Therapy Care... The best approach to cutting this down is adherence to Clinical Practice Guidelines, following best practice patterns, and measuring clinical outcomes.”

-Tara Manal PT,DPT,OCS,SCS AOPT Director

- **Adhere to Clinical Practice Guidelines**
- **Follow Best Practice Patterns**
- **Consistent and Accurate Outcomes Measurement**



So What Can We Do?

- Adhere to Clinical Practice Guidelines & Follow Best Practice Patterns
 - Guidelines
 - compile all the best clinical evidence geared towards achieving optimal patient outcomes
 - establish a benchmark to build upon
 - improve the efficiency of the clinical workflow
 - are always tailored to fit individual patient needs
 - are a pathway towards continual improvement

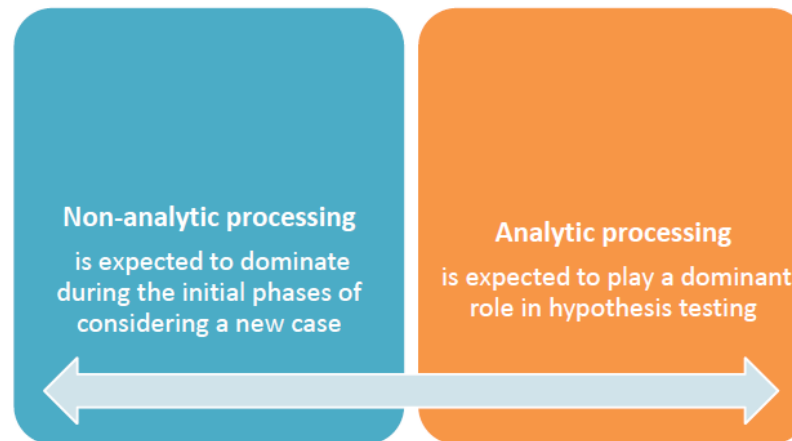




Clinical Pattern Recognition Furze 2018

- Clinical Pattern Recognition
 - Expert practitioners are able to move beyond the hypothetico-deductive reasoning process and engage in more intuitive pattern recognition

Combined Model of Clinical Reasoning





Neck Pain With Mobility Deficits

Common symptoms

- Central and/or unilateral neck pain
- Limitation in neck motion that consistently reproduces symptoms
- Associated (referred) shoulder girdle or upper extremity pain may be present

Expected exam findings

- Limited cervical ROM
- Neck pain reproduced at end ranges of active and passive motions
- Restricted cervical and thoracic segmental mobility
- Intersegmental mobility testing reveals characteristic restriction
- Neck and referred pain reproduced with provocation of the involved cervical or upper thoracic segments or cervical musculature
- Deficits in cervicoscapulothoracic strength and motor control may be present in individuals with subacute or chronic neck pain

Neck Pain With Movement Coordination Impairments (WAD)

Common symptoms

- Mechanism of onset linked to trauma or whiplash
- Associated (referred) shoulder girdle or upper extremity pain
- Associated varied nonspecific concussive signs and symptoms
- Dizziness/nausea
- Headache, concentration, or memory difficulties; confusion; hypersensitivity to mechanical, thermal, acoustic, odor, or light stimuli; heightened affective distress

Expected exam findings

- Positive cranial cervical flexion test
- Positive neck flexor muscle endurance test
- Positive pressure algometry
- Strength and endurance deficits of the neck muscles
- Neck pain with mid-range motion that worsens with end-range positions
- Point tenderness may include myofascial trigger points
- Sensorimotor impairment may include altered muscle activation patterns, proprioceptive deficit, postural balance or control
- Neck and referred pain reproduced by provocation of the involved cervical segments

Neck Pain With Headache (Cervicogenic)*

Common symptoms*

- Noncontinuous, unilateral neck pain and associated (referred) headache
- Headache is precipitated or aggravated by neck movements or sustained positions/postures

Expected exam findings

- Positive cervical flexion-rotation test
- Headache reproduced with provocation of the involved upper cervical segments
- Limited cervical ROM
- Restricted upper cervical segmental mobility
- Strength, endurance, and coordination deficits of the neck muscles

Neck Pain With Radiating Pain (Radicular)

Common symptoms

- Neck pain with radiating (narrow band of lancinating) pain in the involved extremity
- Upper extremity dermatomal paresthesia or numbness, and myotomal muscle weakness

Expected exam findings

- Neck and neck-related radiating pain reproduced or relieved with radiculopathy testing: positive test cluster includes upper-limb nerve mobility, Spurling's test, cervical distraction, cervical ROM
- May have upper extremity sensory, strength, or reflex deficits associated with the involved nerve roots



Neck Pain With Mobility Deficits	Neck Pain With Movement Coordination Impairments (WAD)	Neck Pain With Headache (Cervicogenic)	Neck Pain With Radiating Pain (Radicular)
<p>Acute</p> <ul style="list-style-type: none">• Thoracic manipulation• Cervical mobilization or manipulation• Cervical ROM, stretching, and isometric strengthening exercise• Advice to stay active plus home cervical ROM and isometric exercise• Supervised exercise, including cervicospulothoracic and upper extremity stretching, strengthening, and endurance training• General fitness training (stay active) <p>Subacute</p> <ul style="list-style-type: none">• Cervical mobilization or manipulation• Thoracic manipulation• Cervicospulothoracic endurance exercise <p>Chronic</p> <ul style="list-style-type: none">• Thoracic manipulation• Cervical mobilization• Combined cervicospulothoracic exercise plus mobilization or manipulation• Mixed exercise for cervicospulothoracic regions—neuromuscular exercise: coordination, proprioception, and postural training; stretching; strengthening; endurance training; aerobic conditioning; and cognitive affective elements• Supervised individualized exercises• “Stay active” lifestyle approaches• Dry needling, low-level laser, pulsed or high-power ultrasound, intermittent mechanical traction, repetitive brain stimulation, TENS, electrical muscle stimulation	<p>Acute if prognosis is for a quick and early recovery</p> <ul style="list-style-type: none">• Education: advice to remain active, act as usual• Home exercise: pain-free cervical ROM and postural element• Monitor for acceptable progress• Minimize collar use <p>Subacute if prognosis is for a prolonged recovery trajectory</p> <ul style="list-style-type: none">• Education: activation and counseling• Combined exercise: active cervical ROM and isometric low-load strengthening plus manual therapy (cervical mobilization or manipulation) plus physical agents: ice, heat, TENS• Supervised exercise: active cervical ROM or stretching, strengthening, endurance, neuromuscular exercise including postural, coordination, and stabilization elements <p>Chronic</p> <ul style="list-style-type: none">• Education: prognosis, encouragement, reassurance, pain management• Cervical mobilization plus individualized progressive exercise: low-load cervicospulothoracic strengthening, endurance, flexibility, functional training using cognitive behavioral therapy principles, vestibular rehabilitation, eye-head-neck coordination, and neuromuscular coordination elements• TENS	<p>Acute</p> <ul style="list-style-type: none">• Exercise: C1-2 self-SNAG <p>Subacute</p> <ul style="list-style-type: none">• Cervical manipulation and mobilization• Exercise: C1-2 self-SNAG <p>Chronic</p> <ul style="list-style-type: none">• Cervical manipulation• Cervical and thoracic manipulation• Exercise for cervical and scapulothoracic region: strengthening and endurance exercise with neuromuscular training, including motor control and biofeedback elements• Combined manual therapy (mobilization or manipulation) plus exercise (stretching, strengthening, and endurance training elements)	<p>Acute</p> <ul style="list-style-type: none">• Exercise: mobilizing and stabilizing elements• Low-level laser• Possible short-term collar use <p>Chronic</p> <ul style="list-style-type: none">• Combined exercise: stretching and strengthening elements plus manual therapy for cervical and thoracic region: mobilization or manipulation• Education counseling to encourage participation in occupational and exercise activity• Intermittent traction



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