



Bali 2018

CERTIFICATE

of Attendance

that is certify to

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as

SPEAKER

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MIXED PAIN CONCEPT IN CHRONIC LOW BACK PAIN

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The background of the slide features two images. On the left, a close-up of a woman's face with her eyes closed and her hand to her forehead, suggesting a headache or facial pain. On the right, the back of a man's torso, with his hands clasped over his shoulders, suggesting back or neck pain. The overall background is a light blue gradient.

What is pain?

An unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage.

International Association for the Study of Pain (IASP) 2011

This definition of pain allows us to understand that pain is not only a sensory experience but also an emotion that can affect quality of life.

What is low back pain?

- Pain below the costal margin and above the gluteal folds, with or without radiation to the lower extremity¹
- **Acute** vs. **chronic** low back is pain classified according to duration:
 - **Acute:** less than 3 months^{2,3}
 - **Chronic:** more than 3 months^{2,3}



Common Causes of Low Back Pain

Mechanical (80-90%)

(e.g., disc degeneration, fractured vertebrae, instability, unknown cause [most cases])

Neurogenic (5-15%)

(e.g., herniated disc, spinal stenosis, osteophyte damage to nerve root)

Non-mechanical spinal conditions (1-2%)

(e.g., neoplasm, infections, inflammatory arthritis, Paget's disease)

Referred visceral pain (1-2%)

(e.g., gastrointestinal disease, kidney disease, abdominal aortic aneurism)

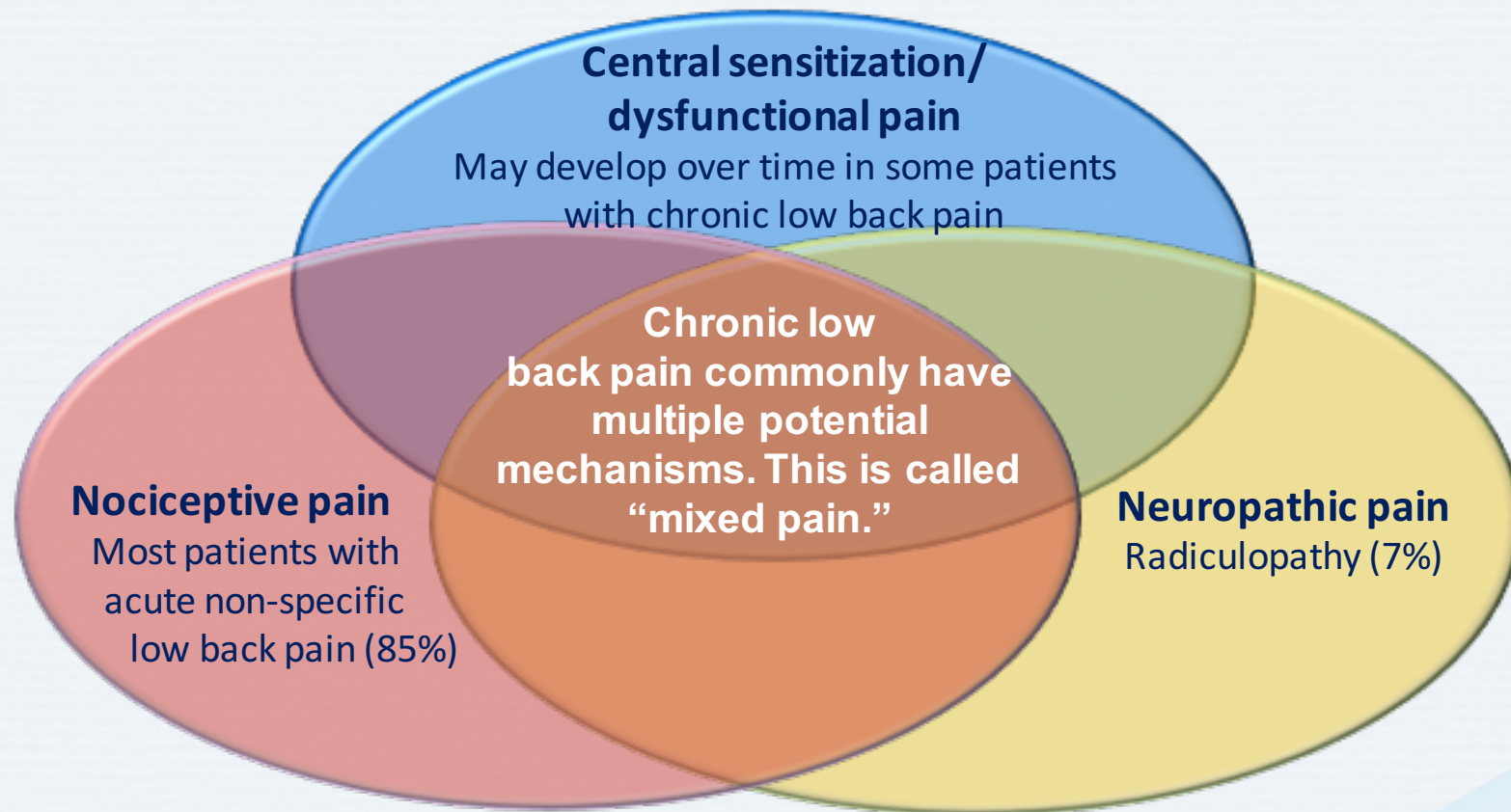
Other (2-4%)

(e.g., fibromyalgia, somatoform disorder, "faking" pain)

Pathophysiology of Low Back Pain

- Chronic low back pain has been acknowledged to have multiple potential mechanisms and may be a “mixed pain state” in which a combination of nociceptive and neuropathic pain and/or central sensitization/dysfunctional pain contribute to the pain.
- Therefore, patient assessment must include determination of the type(s) of pain contributing to the pain.

Pathophysiology of Low Back Pain



Nociceptive vs. Neuropathic Pain

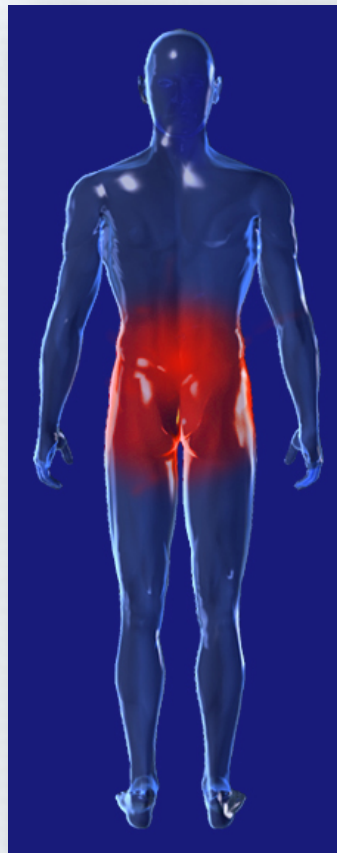
Nociceptive

- Usually aching or throbbing and well-localized
- Usually time-limited (resolves when damaged tissue heals), but can be chronic
- Generally responds to conventional analgesics

Neuropathic

- Pain often described as tingling, shock-like, and burning – commonly associated with numbness
- Almost always a chronic condition
- Responds poorly to conventional analgesics

Nociceptive and Neuropathic Components May Be Present in Low Back Pain



Nociceptive Component



Neuropathic Component

Example of Coexisting Pain: Herniated Disc Causing Low Back Pain and Lumbar Radicular Pain

- Disc degeneration is a common trigger of chronic low back pain and can concomitantly activate both the nociceptive (through nociceptors in the annulus fibrosus) and neuropathic pain pathways.
- Disc herniation occurs when disc materials are afforded the opportunity to push against the tougher outer layer of the disc due to wear and tear of the latter.
- This dynamic change in turn stimulates the adjacent nerve roots and dorsal root ganglion resulting in the development of mechanical or biochemical pain.

Neuropathic Component of Low Back Pain

- Neuropathic component of low back pain may be caused by:
 - Mechanical compression of nerve root (*mechanical neuropathic nerve root pain*)
 - Damage to sprouting C-fibers within the degenerated disc (*localized neuropathic pain*)
 - Action of inflammatory mediators released from the degenerated disc (*inflammatory neuropathic nerve root pain*), even without mechanical compression

Recognizing Neuropathic Pain

- Verbal descriptors of pain can be important clues to the pathophysiologic mechanisms behind the pain
- Be alert for common verbal descriptors of neuropathic pain.



Burning



Tingling



Shooting



Electric shock-like



Numbness

- Sensations of pins and needles or numbness are also frequently mentioned in conjunction with neuropathic pain conditions.

Neuropathic Pain Screening Tools

- Screening methods for neuropathic pain consist mostly of characteristic verbal descriptors, though some have simple bedside examinations in addition.
- Examples of the latter are the LANSS pain scale and the DN4 questionnaire, which have an approximate accuracy of 80% (for LANSS) and 90% (for ND4), compared with expert clinical judgment in identifying patients with neuropathic pain.
- Screening methods, however, are not a substitute for good clinical assessment and are not intended to be diagnostic methods.

Non-pharmacological Treatments for Low Back Pain

Moderate Evidence of Effectiveness

Therapy and exercise	Moderately effective in pain relief and functional improvement in adults with low back pain
Cognitive-behavioral therapy	May reduce pain and disability in patients with chronic and subacute low back pain
Intensive multidisciplinary biopsychosocial rehabilitation	
Massage	
Yoga	
Heat therapy	
Medium-firm mattress	
Transcutaneous electrical nerve stimulation	Controversial with evidence both for and against

Evidence suggests bed rest and traction are **NOT** useful

Sufficient Evidence of Effectiveness

Function-centered treatment	More effective than pain-centered treatment for an increase in days able to work in patients with subacute low back pain lasting more than 6 weeks
Acupuncture	More effective than conventional therapy but not more effective than sham acupuncture

Chou R et al. *Spine (Phila PA 1976)* 2009; 34(10):1066-77; Dagenais S et al. *Spine J* 2008; 8(1):203-12; Gay RE, Brault JS. *Spine J* 2008; 8(1):234-42; Hagen KB et al. *Spine (Phila PA 1976)* 2005; 30(5):542-6; Oleske D et al. *Spine* 2007; 32(19):2050-7; Pillastrini P et al. *Joint Bone Spine* 2012; 79(2):176-85; Ramos-Remus CR et al. *Curr Med Res Opin* 2004; 20(5):691-8; Romanò CL et al. *J Orthop Traumatol* 2009; 10(4):185-91; Sakamoto C, Soen S. *Digestion* 2011; 83(1-2):108-23; Savigny P et al. *Low Back Pain: Early Management of Persistent Non-specific Low Back Pain*. National Collaborating Centre for Primary Care and Royal College of General Practitioners; London, UK: 2009; Toward Optimized Practice. *Guidelines for the Evidence-Informed Primary Care Management of Low Back Pain*. Edmonton, AB: 2009.

Pharmacotherapy for Low Back Pain

- Treatment must balance patient expectations for pain relief and possible analgesic effect of therapy
- Patients should be educated about the medication, treatment objectives and expected results
- Psychosocial factors and emotional distress are stronger predictors of treatment outcome than physical examination findings or the duration and severity of pain

Therapeutic Recommendations for Management of Low Back Pain

	Non-specific Low Back Pain	Radicular Pain
Acute	<ul style="list-style-type: none"> • Acetaminophen • nsNSAIDs/coxibs <ul style="list-style-type: none"> • Co-prescribe PPI for patients aged >45 years • Weak opioids • Muscle relaxants 	<p>If radicular pain is prominent consider addition of:</p> <ul style="list-style-type: none"> • $\alpha^2\delta$ ligands • TCAs
Chronic	<p>Refer to specialist for:</p> <ul style="list-style-type: none"> • Cognitive behavioral therapy • Complex pharmacological management, including opioids and neuropathic pain medications • Consider interventional pain therapies • Consider surgery 	

Coxib = COX-2-specific inhibitor; nsNSAID = non-selective non-steroidal anti-inflammatory drug;
 PPI = proton pump inhibitor; TCA = tricyclic antidepressant

Adapted from: Lee J *et al. Br J Anaesth* 2013; 111(1):112-20.

Key Messages

- Chronic low back pain commonly have multiple potential mechanisms. This is called “mixed pain.”
- Patients with low back pain of longer duration should be assessed for neuropathic and central sensitization/ dysfunctional pain
- The pharmacological and non-pharmacological therapies that work better for a particular patient are likely to depend on the mechanisms contributing to the pain.

THANK YOU