DEPARTEMEN/KSM NEUROLOGI DAN MIKROBIOLOGI KLINIK
FAKULTAS KEDOKTERAN UNIVERSITAS UDAYANA
RUMAH SAKIT UMUM PUSAT SANGLAH

Piagam Penghargaan

diberikan kepada

Dr. dr. I Putu Eka Widyadharma, M.Sc, Sp.S(K)

sebagai **PEMBICARA**

Continuing Professional Development
"Peranan Neurologi dan Mikrobiologi Klinik dalam Mendukung Kesehatan Wisata"
Jumat, 5 Oktober 2018

Nomor SKP IDI: 19/IX/2018/SKP/IDI-Bali
Pembicara: 4, Peserta: 3, Moderator: 1, Panitia: 1

Dekan FK Unud

Dr. dr. I Ketut Suyasa, Sp.B, Sp.OT(K)
NIP 19660709 199412 1 001

Ketua Panitia

dr. Ida Ayu Sri Wijayanti, M.Biomed, Sp.S
NIP 19850801 201012 2 003

CURICULUM VITAE

Dr. dr. I Putu Eka Widyadharma, M.Sc, Sp.S(K)

Pendidikan :

S1	: Universitas Udayana Denpasar Tahun 1997
Profesi	: Universitas Udayana Denpasar Tahun 1999
S2 –Clinical Medicine	: Universitas Gadjah Mada Yogyakarta Tahun 2009
Spesialis Saraf	: Universitas Gadjah Mada Yogyakarta Tahun 2009
Konsultan Nyeri	: Kolegium Neurologi Indonesia Tahun 2014
S3	: Universitas Udayana Tahun 2018

Pekerjaan :

Staf Divisi Nyeri dan Nyeri kepala Departemen/KSM Neurologi FK UNUD/RSUP Sanglah Denpasar

Pelatihan/Workshop :

- Neuropathic pain Management, Manila, Philippine, 2011
- Pain Management, Mumbai, India, 2012
- Diabetic Neuropathy Workshop, , Manila, Philippine, 2012
- USG for Neurologist, Jakarta, 2012
- Neuropathic pain workshop, Milan, Italy 2012
- USG Guidance for Interventional Pain management, Bandung 2012
- Pain Management Camp, Singapore 2013
- Interventional Pain Management, Medan 2013
- USG Guidance In Pain management, Yogyakarta 2014
- Asia Facific Pain Summit, Denpasar 2016
- Neuropathic Pain, Yokohama, Jepang 2016
- Dry Needling, Perth, Australia, 2017

MANAJEMEN NYERI PUNGGUNG BAWAH

I PUTU EKA WIDYADHARMA
DIVISI NYERI DAN NYERI KEPALA, DEPARTEMEN/KSM NEUROLOGI FK UNUD/RSUP SANGLAH DENPASAR


LIBUR TELAH
TIBA (/-,-)/

PHOTO ILLUSTRATION/THINKSTOCK

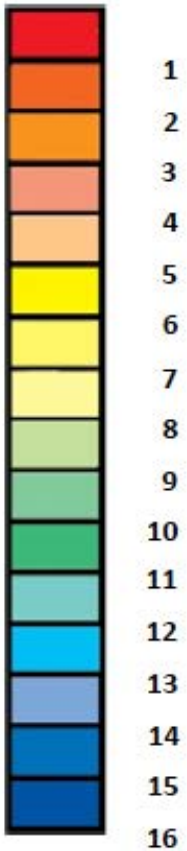
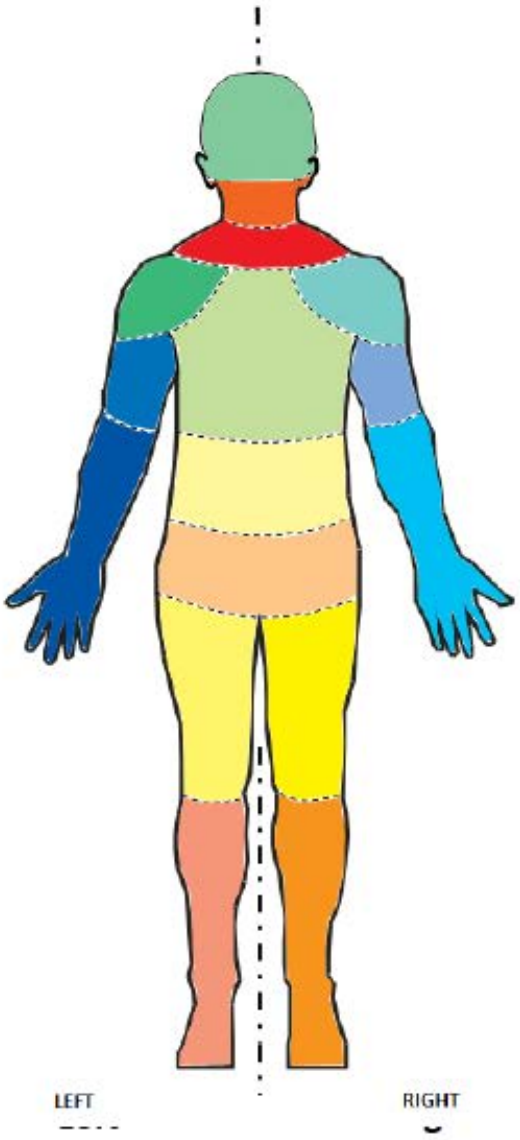
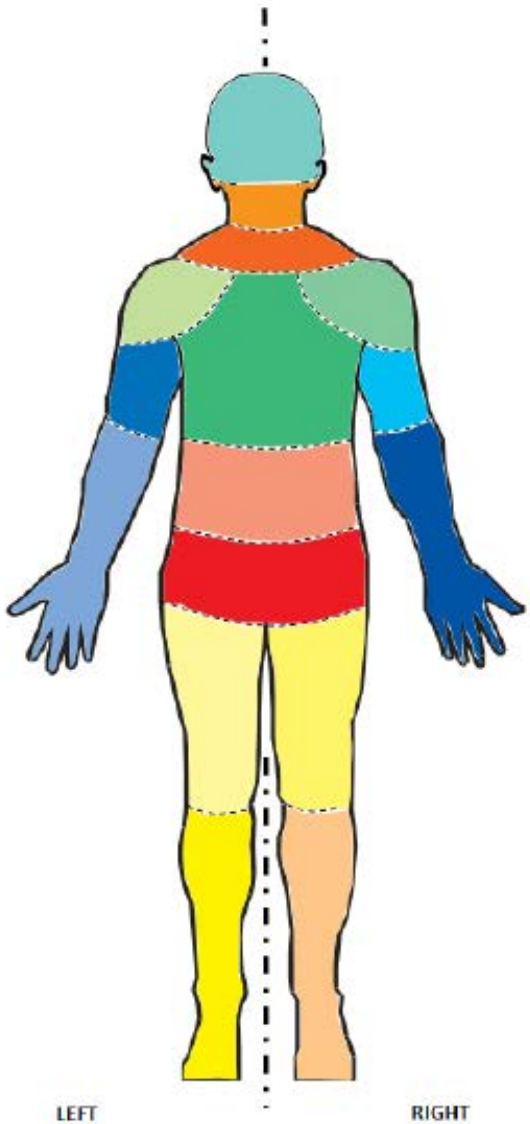

© Eric Winter / Instagram

INTRODUCTION

- The economy class aircraft passengers who experience long hour sitting during air travel has experienced significant body discomfort at neck, shoulder, lower back, upper leg and lower leg.

Tan, C. F., et al. *Australian Journal of Basic and Applied Sciences* 7.6 (2013): 563-570.

Table 5: Body discomfort ranking of aircraft passengers after one hour and after five hours of travel.

Ranking	Body discomfort after 1 hour travel	Body discomfort after 5 hours travel
		

Tan, C. F., et al. *Australian Journal of Basic and Applied Sciences* 7.6 (2013): 563-570.

What is low back pain?

- Pain below the costal margin and above the gluteal folds, with or without radiation to the lower extremity[1]
- **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]

1. Airaksinen O *et al. Eur Spine J* 2006; 15(Suppl 2):S192-300; 2. International Association for the Study of Pain. *Unrelieved Pain Is a Major Global Healthcare Problem.* Available at: http://www.iasp-pain.org/AM/Template.cfm?Section=Press_Release&Template=/CM/ContentDisplay.cfm&ContentID=2908. Accessed: July 22, 2013. 3. National Pain summit Initiative. *National Pain Strategy: Pain Management for All Australians.* Available at: http://www.iasp-pain.org/PainSummit/Australia_2010PainStrategy.pdf. Accessed: July 22, 2013.

Causes of Low Back Pain: Repetitive Trauma (Overuse)

Stacey BR. *Am J Phys Med Rehab* 2005; 84(3 Suppl):S4-16.

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)

Cohen S. *BMJ* 2008; 337:a2718.

Soft Tissue Causes of Low Back Pain

Soft Tissue Condition	Clinical Features	Pain Pattern
Myofascial pain syndrome	• Rope-like nodularity on physical examination	• Low back, buttocks, thighs (localized or regional)
Paraspinal muscle injury	• Muscle atrophy on MRI, ultrasound and CT	• Low back
Injury to quadratus lumborum	• Decreased and painful lumbar flexion and rotation	• Flank, low back, buttocks, lateral hip
Ischiatic bursitis	• Local tenderness at the ischial tuberosity	• Buttocks
Cluneal nerve entrapment	• Resolution of pain with local nerve block	• Unilateral, iliac crest and buttocks
Sacroiliitis	• Inflammation of one or both sacroiliac joints	• Pain in buttocks or low back and may extend to groin and one or both legs • Often aggravated by prolonged standing or climbing stairs

CT = computed tomography; MRI = magnetic resonance imaging

Borg-Stein J, Wilkins A. *Curr Pain Headache Rep* 2006; 10(50:339-44.

KJP The Korean Journal of Pain
| Original Article |
Korean J Pain 2011 June; Vol. 24, No. 2: 100-104
pISSN 2005-9159 eISSN 2093-0569
DOI : 10.3344/kjp.2011.24.2.100

Myofascial Pain Syndrome in Chronic Back Pain Patients

Department of Anesthesiology and Intensive Care, Sarawak General Hospital, Kuching, Sarawak,
*Hospital University Science Malaysia, Kelantan, Malaysia

Chee Kean Chen, MD, and Abd Jalil Nizar, MD*

Background:

Myofascial pain syndrome (MPS) is a regional musculoskeletal pain disorder that is caused by myofascial trigger points. The objective of this study was to determine the prevalence of MPS among chronic back pain patients, as well as to identify risk factors and the outcome of this disorder.

Methods:

This was a prospective observational study involving 126 patients who attended the Pain Management Unit for chronic back pain between 1st January 2009 and 31st December 2009. Data examined included demographic features of patients, duration of back pain, muscle(s) involved, primary diagnosis, treatment modality and response to treatment.

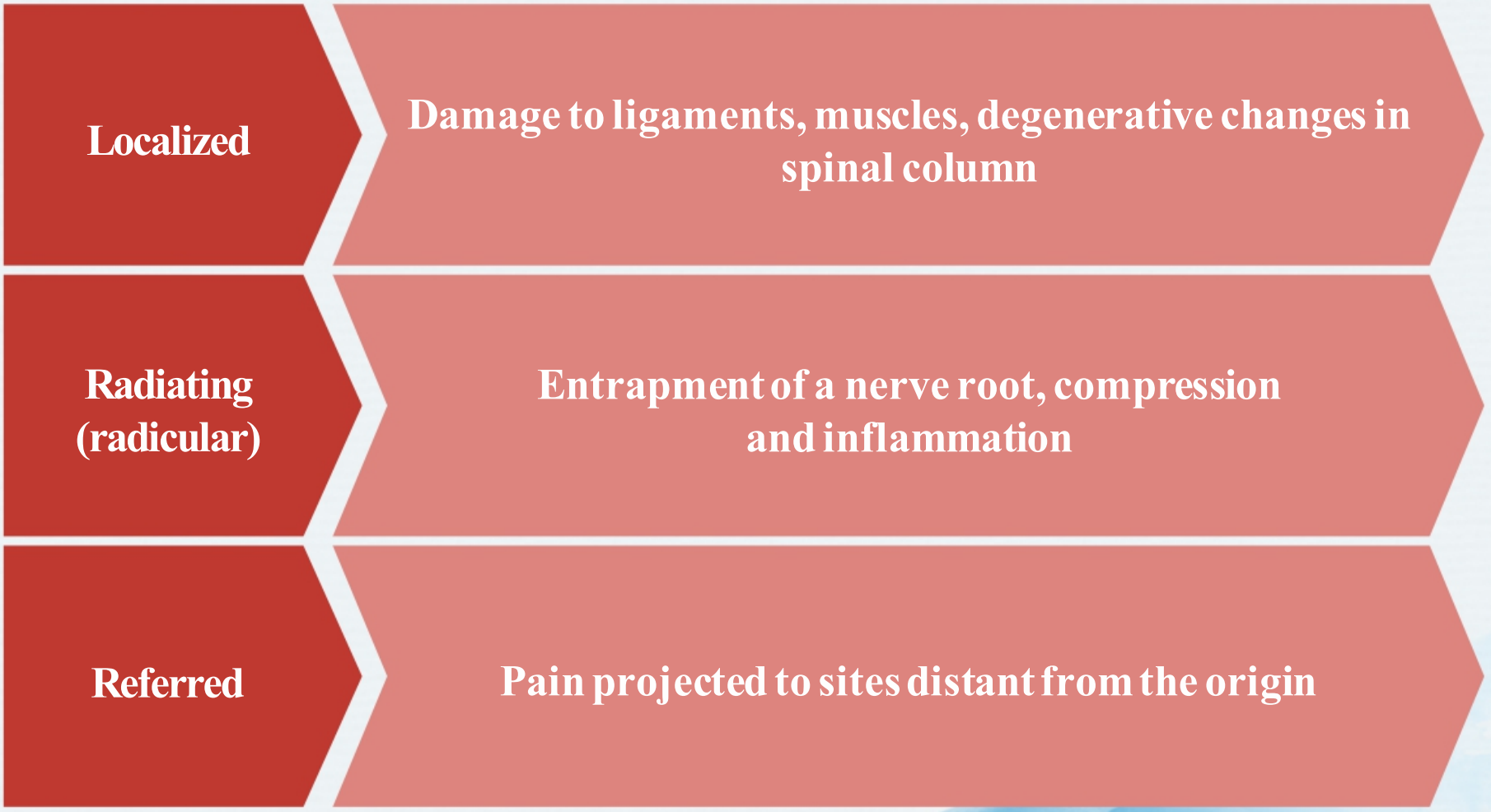
Results:

The prevalence of MPS among chronic back pain patients was 63.5% (n = 80). Secondary MPS was more common than primary MPS, making up 81.3% of the total MPS. There was an association between female gender and risk of developing MPS (χ^2 = 5.38, P = 0.02, O.R. = 2.4). Occupation, body mass index and duration of back pain were not significantly associated with MPS occurrence. Repeated measures analysis showed significant changes ($P < 0.001$) in Visual Analogue Score (VAS) and Modified Oswestry Disability Score (MODS) with standard management during three consecutive visits at six-month intervals.

Conclusions:

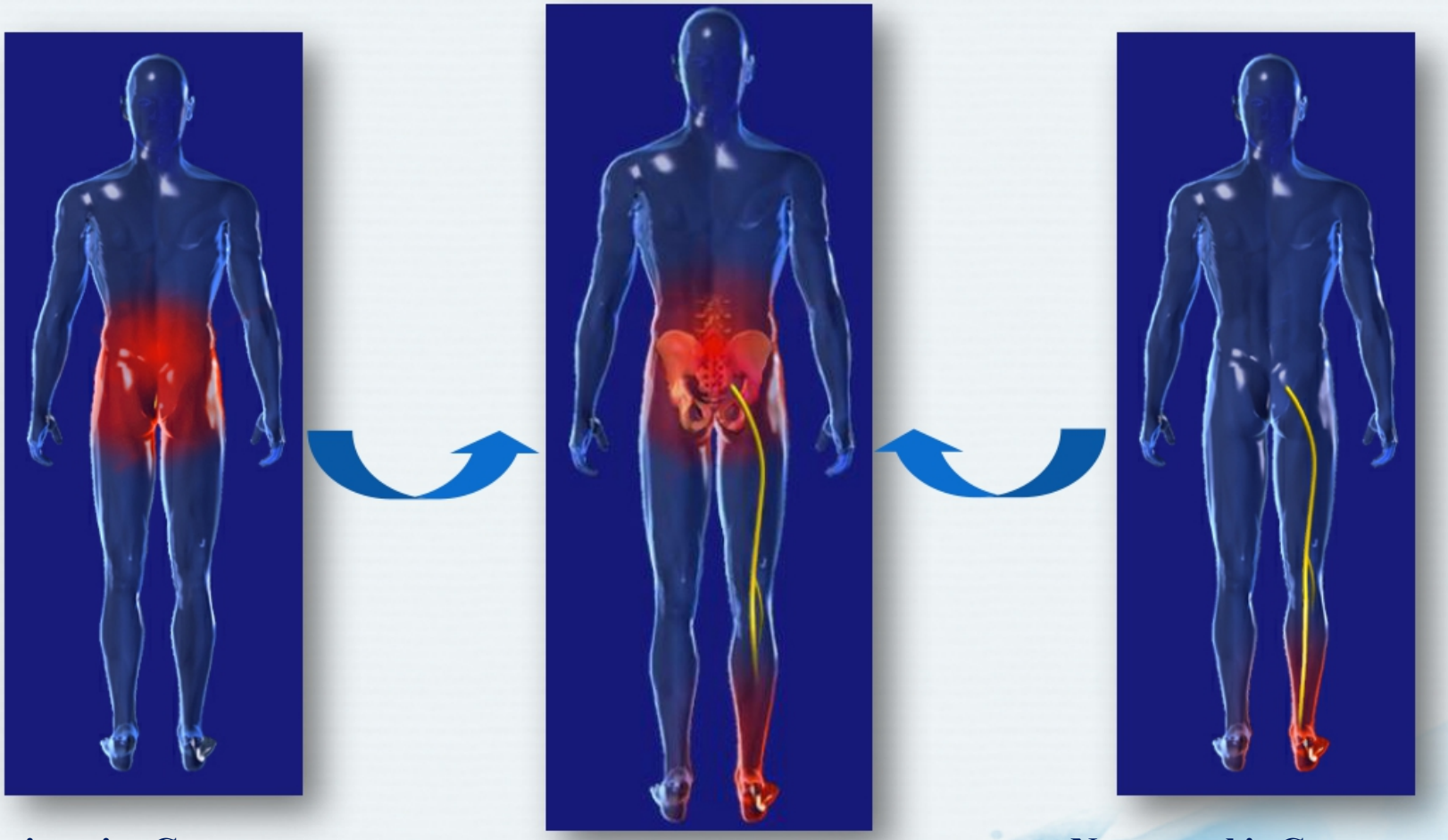
MPS prevalence among chronic back pain patients was significantly high, with female gender being a significant risk factor. With proper diagnosis and expert management, MPS has a favourable outcome. (Korean J Pain 2011; 24: 100-104)

Pain Types Related to Spinal Disorders



Jinkins JR. *J Neuroradiol* 2004; 31(3):163-80.

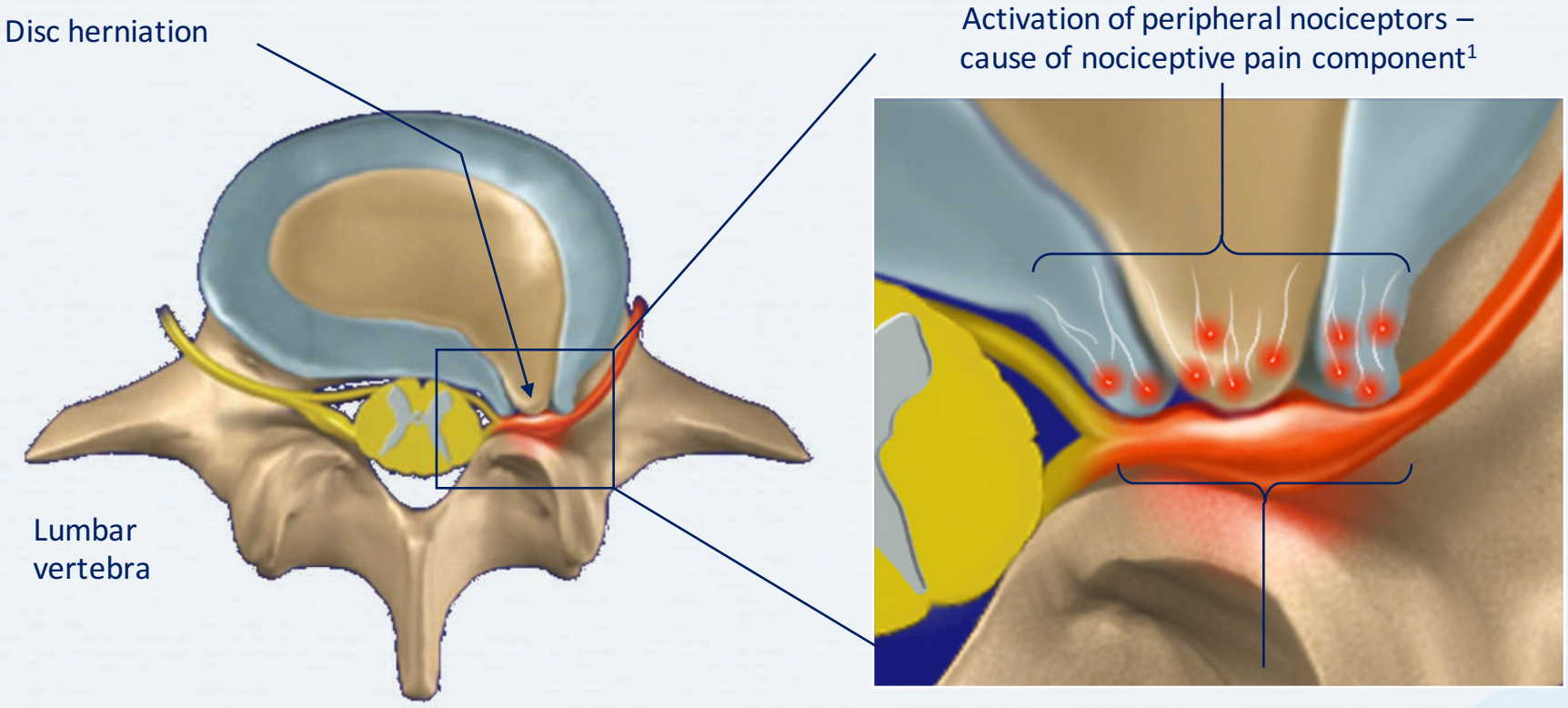
Nociceptive and Neuropathic Components May Be Present in Low Back Pain



Nociceptive Component **Neuropathic Component**

Freynhagen R, Baron R. *Curr Pain Headache Rep* 2009; 13(3):185-90.

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

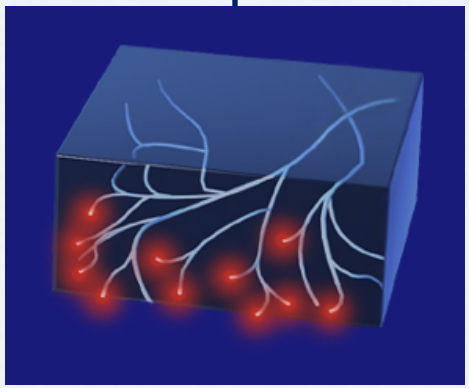


1. Brisby H. *J Bone Joint Surg Am* 2006; 88(Suppl 2):68-71.
2. Freynhagen R, Baron R. *Curr Pain Headache Rep* 2009; 13(3):185-90.

Mixed Pain Example

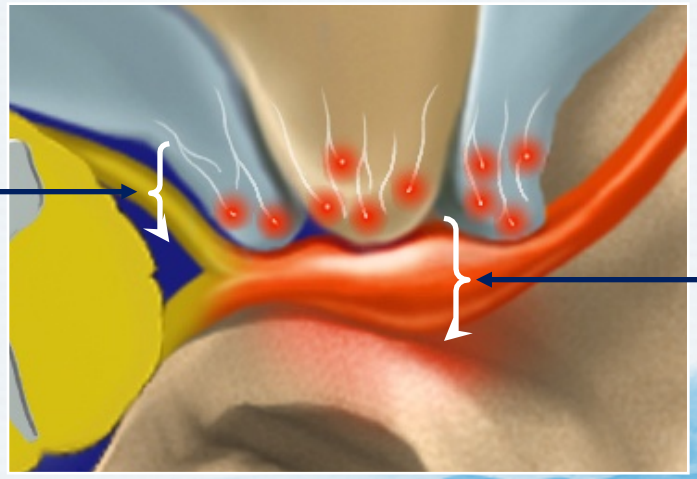
Herniated disc = low back pain + nerve root pain

Constant back pain

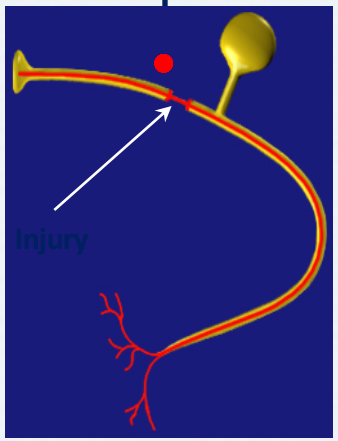


Activation of local nociceptors

Patients present with both types of pain



Pain like electrical discharge, burning pain in the foot

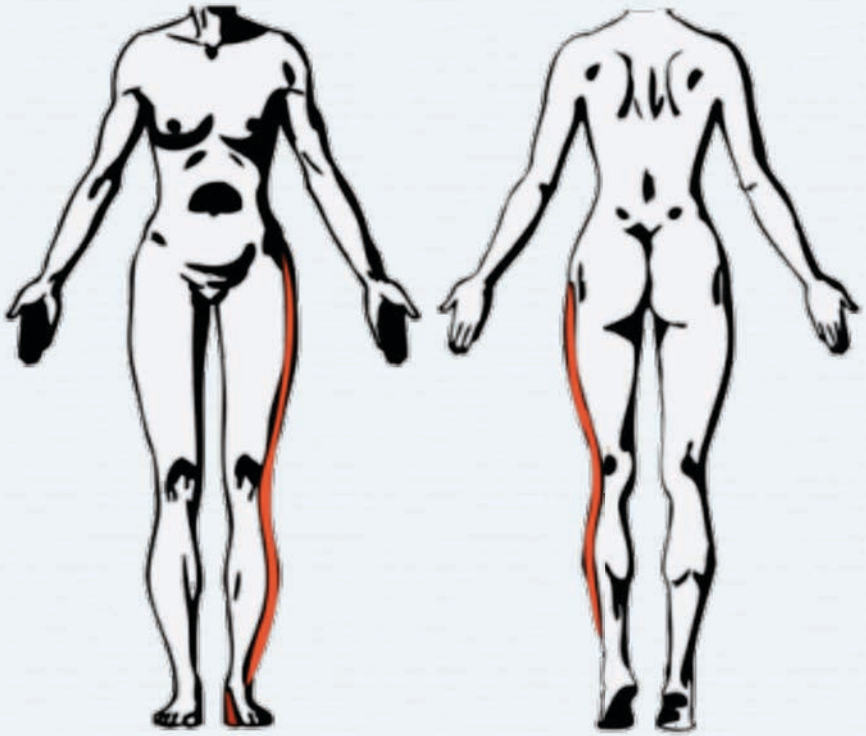


Ectopic discharges from injury to the nerve root

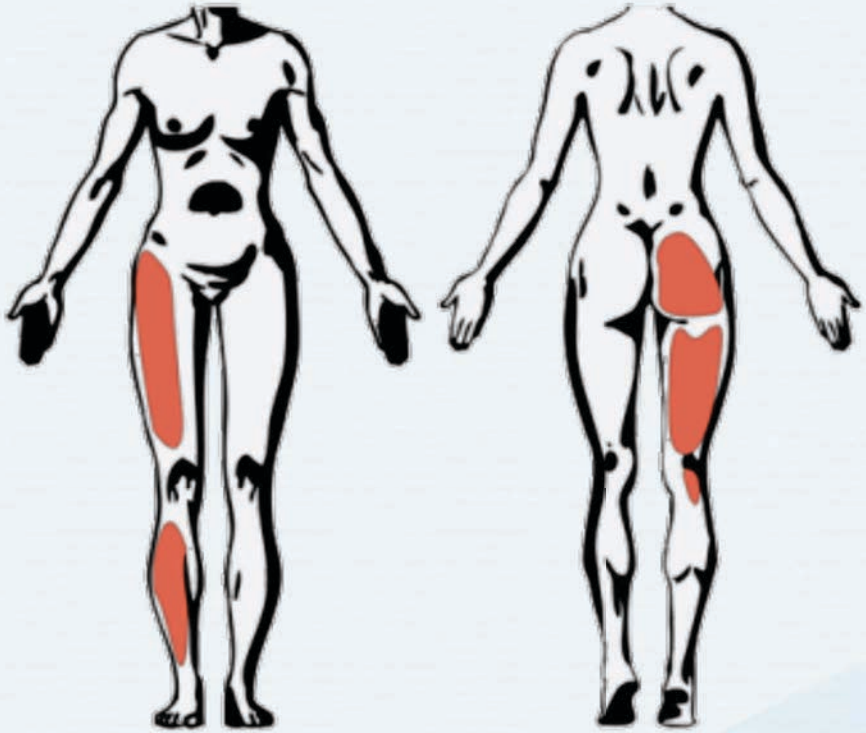
Archival images, Pfizer, Inc.

Physical Examination

Topographic Patterns of Pain Projection



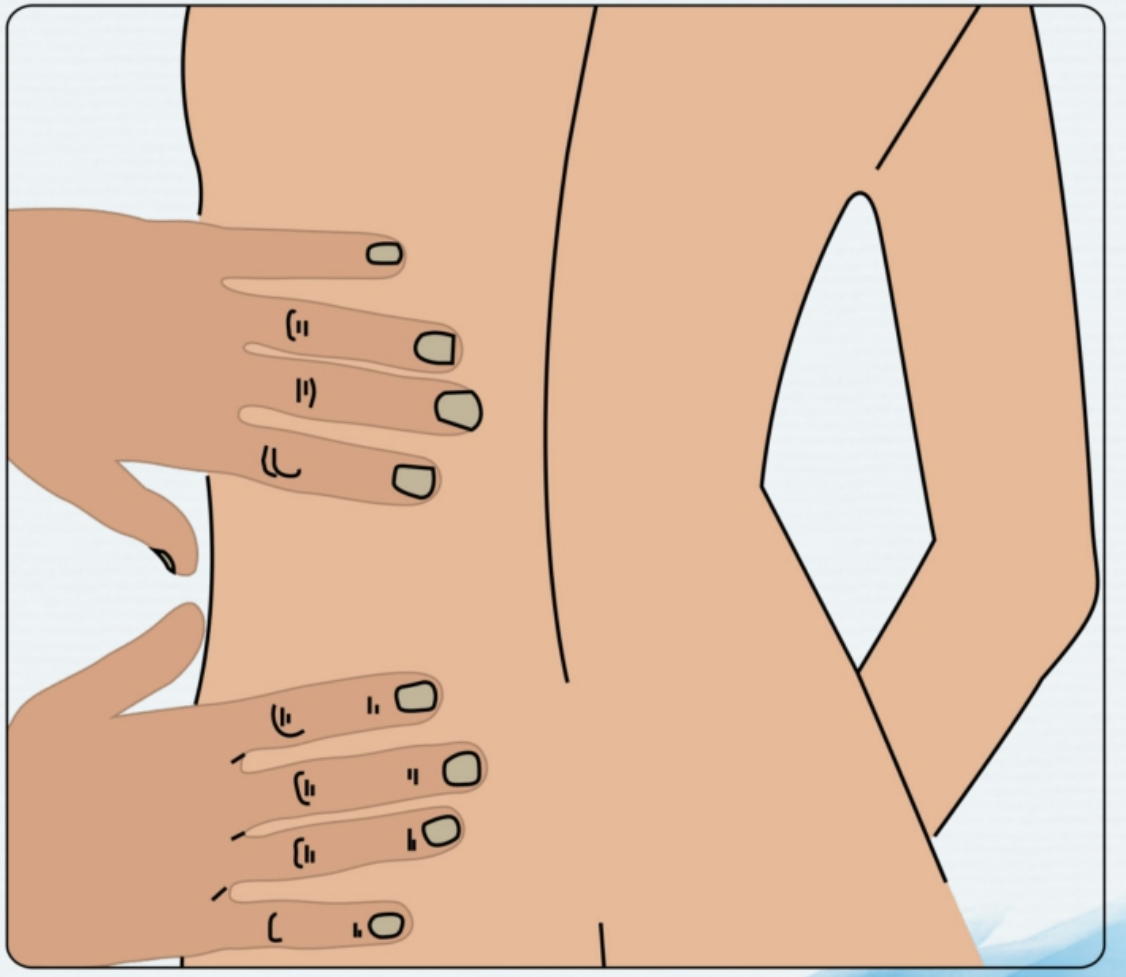
Radiating Pain



Referred Pain

Vivian D. In: Lennard TA *et al* (eds). *Pain Procedures in Clinical Practice*. 3rd ed. Elsevier; New York, NY: 2011.

Physical Examination for Low Back Pain



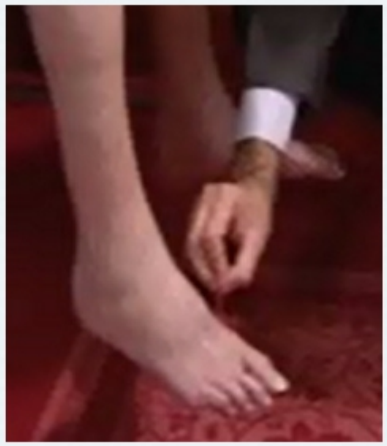
Wheeler AH. *Am Fam Physician* 1995; 52(5):1333-41, 1347-8.

Simple Bedside Tests for Neuropathic Pain

Stroke skin with brush, cotton or apply acetone

Sharp, burning superficial pain → **ALLODYNIA**

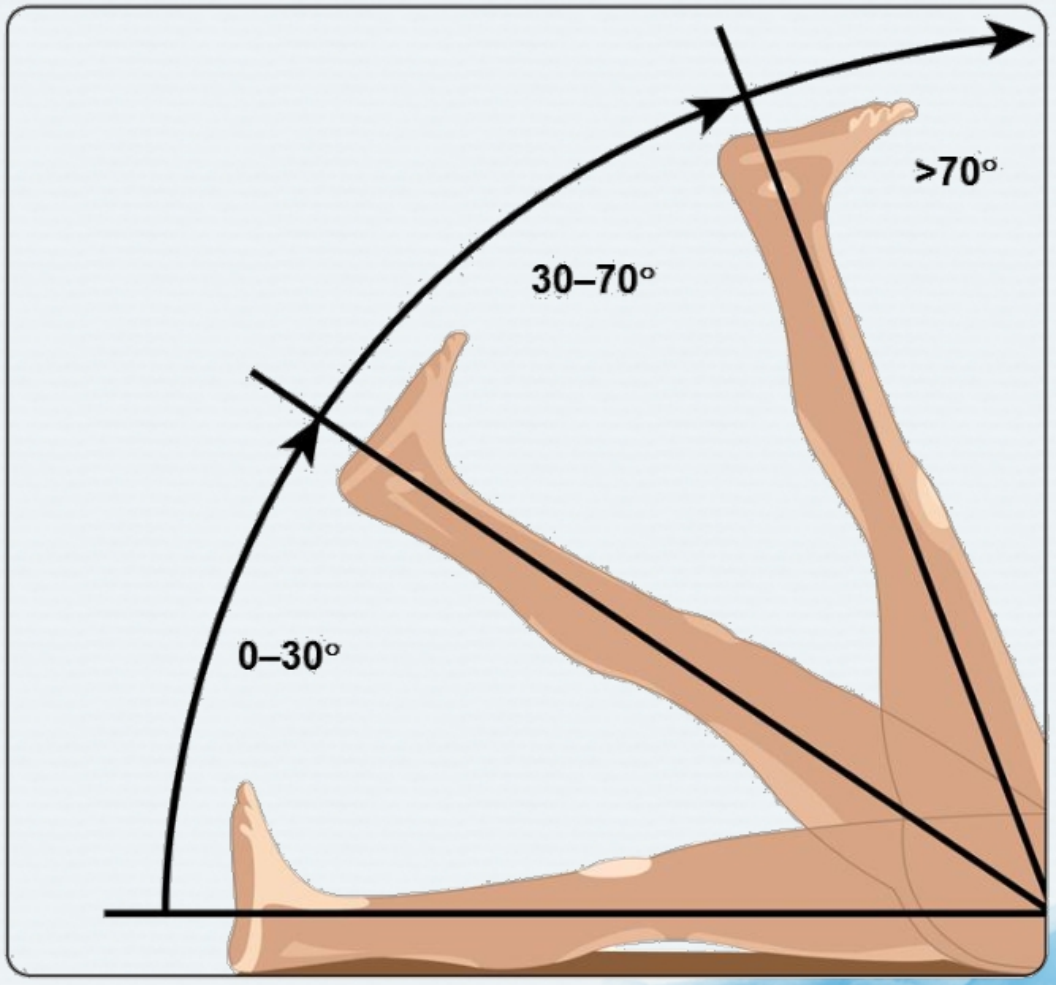
Light manual pinprick with safety pin or sharp stick



Very sharp, superficial pain → **HYPERALGESIA**

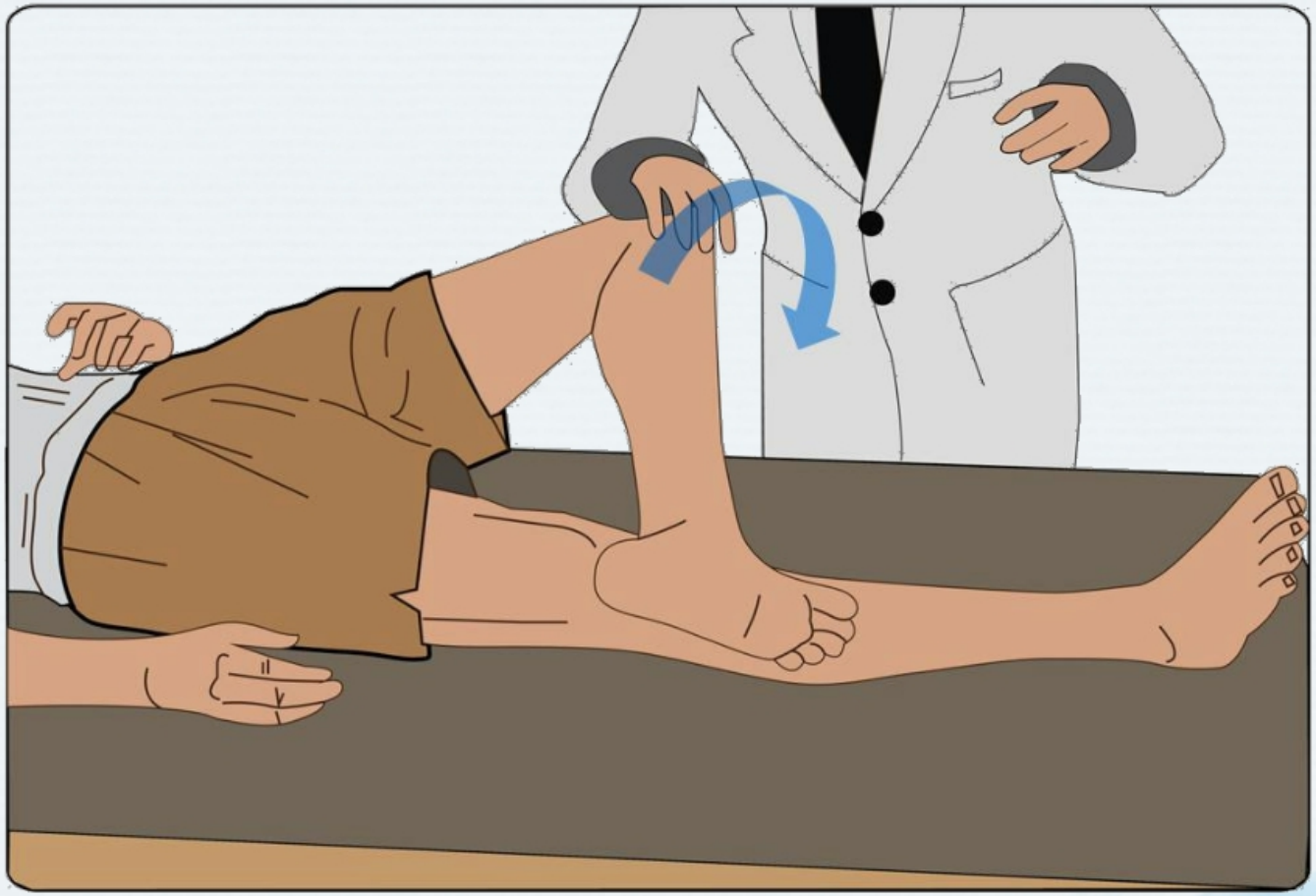
Baron R. *Clin J Pain* 2000; 16(2 Suppl):S12-20; Jensen TS, Baron R. *Pain* 2003; 102(1-2):1-8.

Nerve Tension Test (Lasègue Test) for Low Back Pain



Devereaux MW. *Neurol Clin* 2007; 25(2):331-51.

Faber (Patrick) Test for Low Back Pain



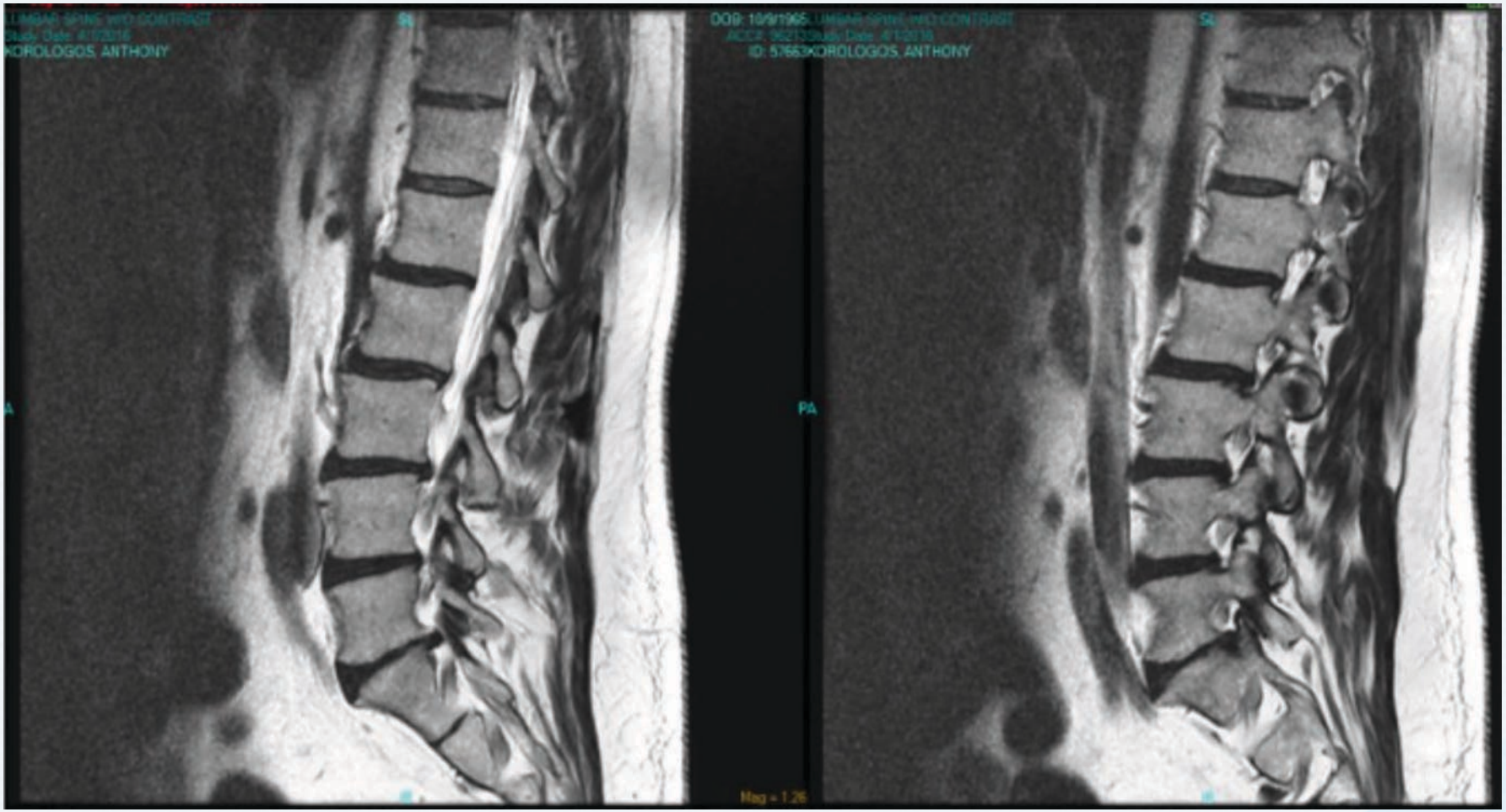
Devereaux MW. *Neurol Clin* 2007; 25(2):331-51.

Freiberg Sign for Piriformis Syndrome

Hopayian K *et al*. *Eur Spine J* 2010; 19(12): 2095-109.

Radiological Examination

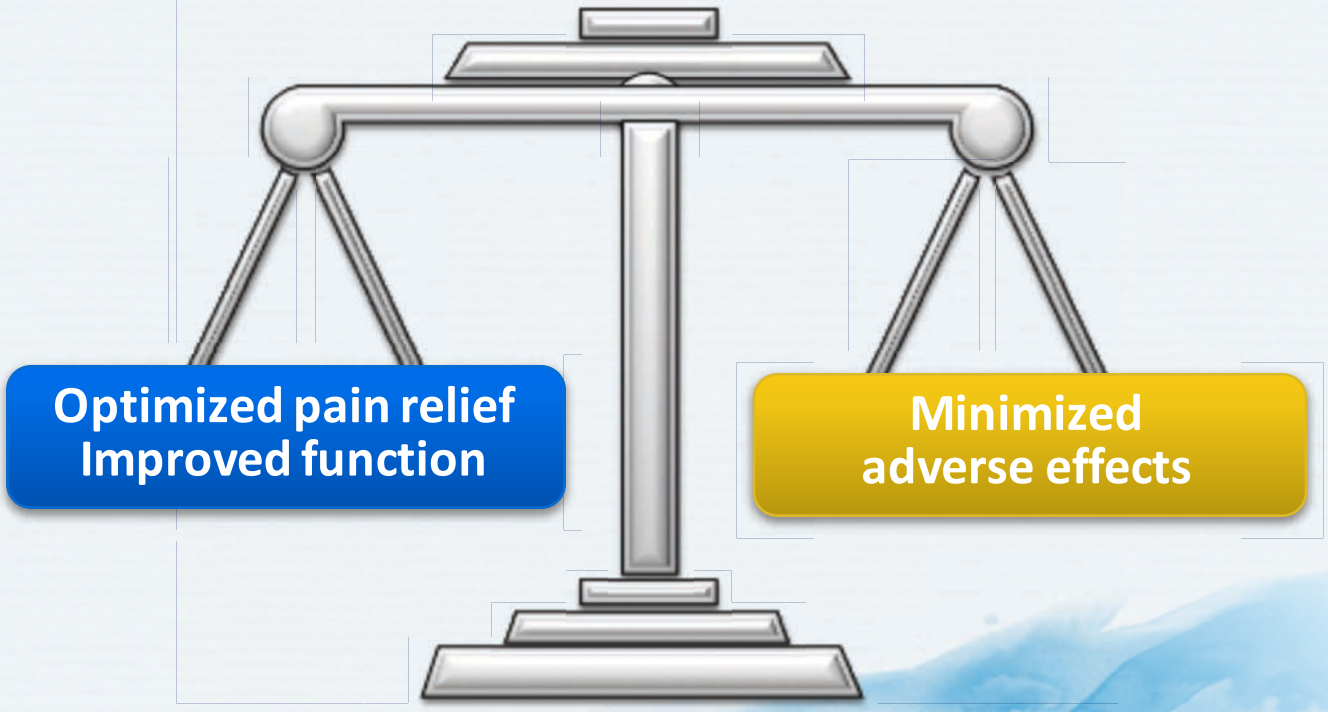

L


SL
PA
SL

MANAGEMENT

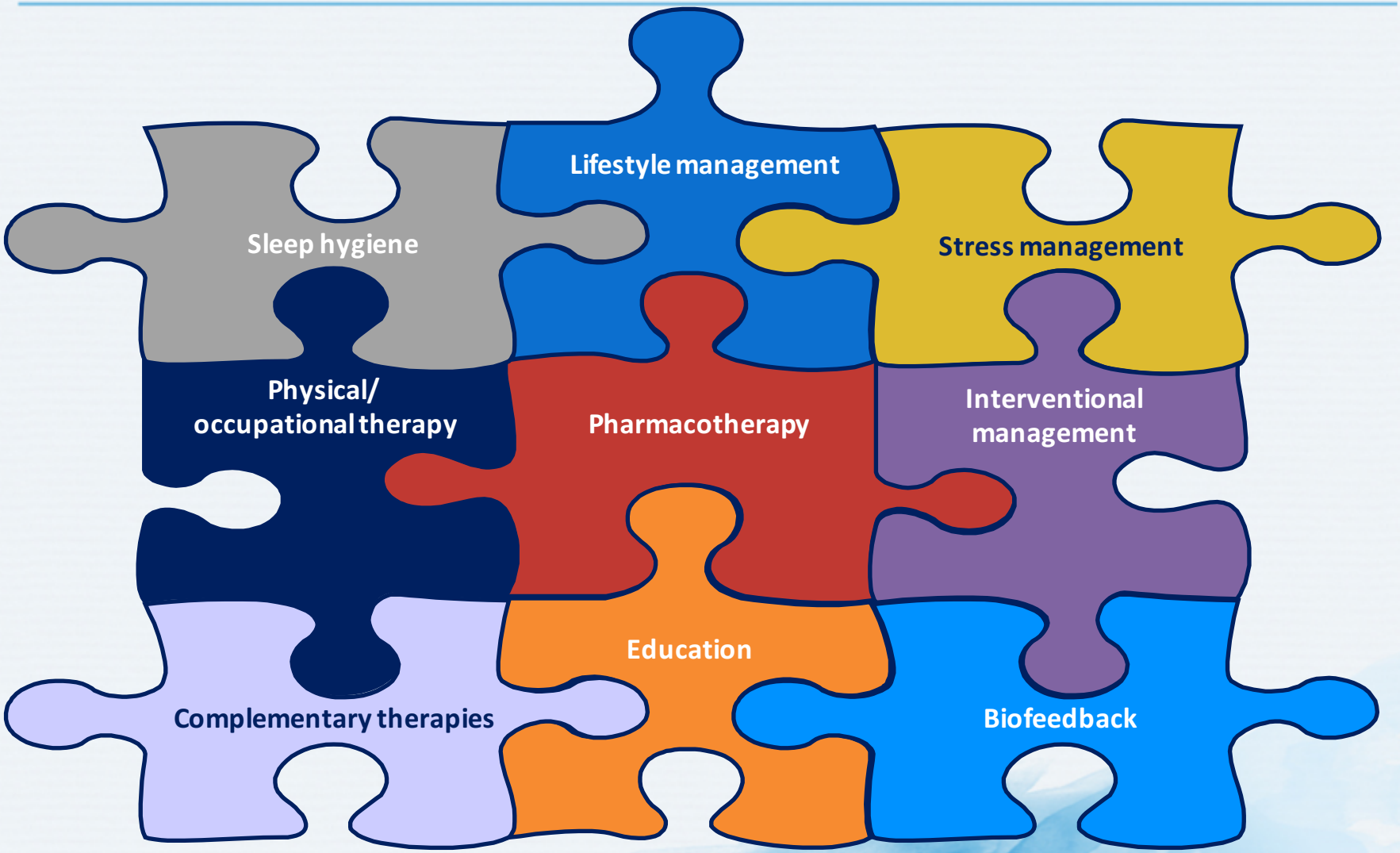
Goals in Pain Management

- Involve the patient in the decision-making process
- Agree on realistic treatment goals **before** starting a treatment plan



Farrar JT *et al. Pain* 2001; 94(2):149-58; Gilron I *et al. CMAJ* 2006; 175(3):265-75.

Multimodal Treatment of Low Back Pain



Gatchel RJ *et al. Psychol Bull* 2007; 133(4):581-624; Institute of Medicine. *Relieving Pain in America: A Blueprint for Transforming Prevention, Care, Education, and Research*; National Academies Press; Washington, DC: 2011; Mayo Foundation for Medical Education and Research. *Comprehensive Pain Rehabilitation Center Program Guide.* Mayo Clinic; Rochester, MN: 2006.

Non-pharmacological Treatment

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 reha	
Massage	
Yoga	
Heat therapy	
Medium-firm mattre	
Transcutaneous electrical nerve stimulation	Controversial with evidence both for and against
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

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

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.

Recommended Approach for Treatment of Low Back Pain

The multidisciplinary approach and combined physical and psychological interventions with cognitive behavioral therapy and exercise are highly recommended for patients with a high degree of disability and/or significant psychological distress and who have received at least one intensive treatment.

Pillastrini P *et al. Joint Bone Spine* 2012; 79:176-85.

Invasive/Surgical Treatment for Low Back Pain*

Procedure	Details
Spinal cord stimulation	• May reduce pain in patients for whom surgery was unsuccessful
Facet/epidural steroid injection	• NO significant differences in control of low back pain at 24 hours, 3–6 months or 1 year post-injection • No significant differences in average functional disability or need for surgery
Spinal surgery *In situ* fusion/posterior instrumentation/ anterior instrumentation	• NO significant differences compared to conservative management plus rehabilitation exercises. • Surgical procedures increase index of fusion, but do NOT improve clinical results • Surgical procedures result in more complications

***Level of evidence is moderate for all procedures listed**

Brox JI *et al. Spine (Phila Pa 1976)* 2003; 28(17):1913-21; Chou R *et al. Spine (Phila Pa 1976)* 2009 May 1;34(10):1066-77;
Manchikanti L *et al. Pain Physician* 2009; 12(4):699-802; Ramos-Remus CR *et al. Curr Med Res Opin* 2004; 20(5):691-8;
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; Staal JB *et al. Spine (Phila Pa 1976)* 2009; 34(1):49-59;
Toward Optimized Practice. *Guidelines for the Evidence-Informed Primary Care Management of Low Back Pain.* Edmonton, AB: 2009.

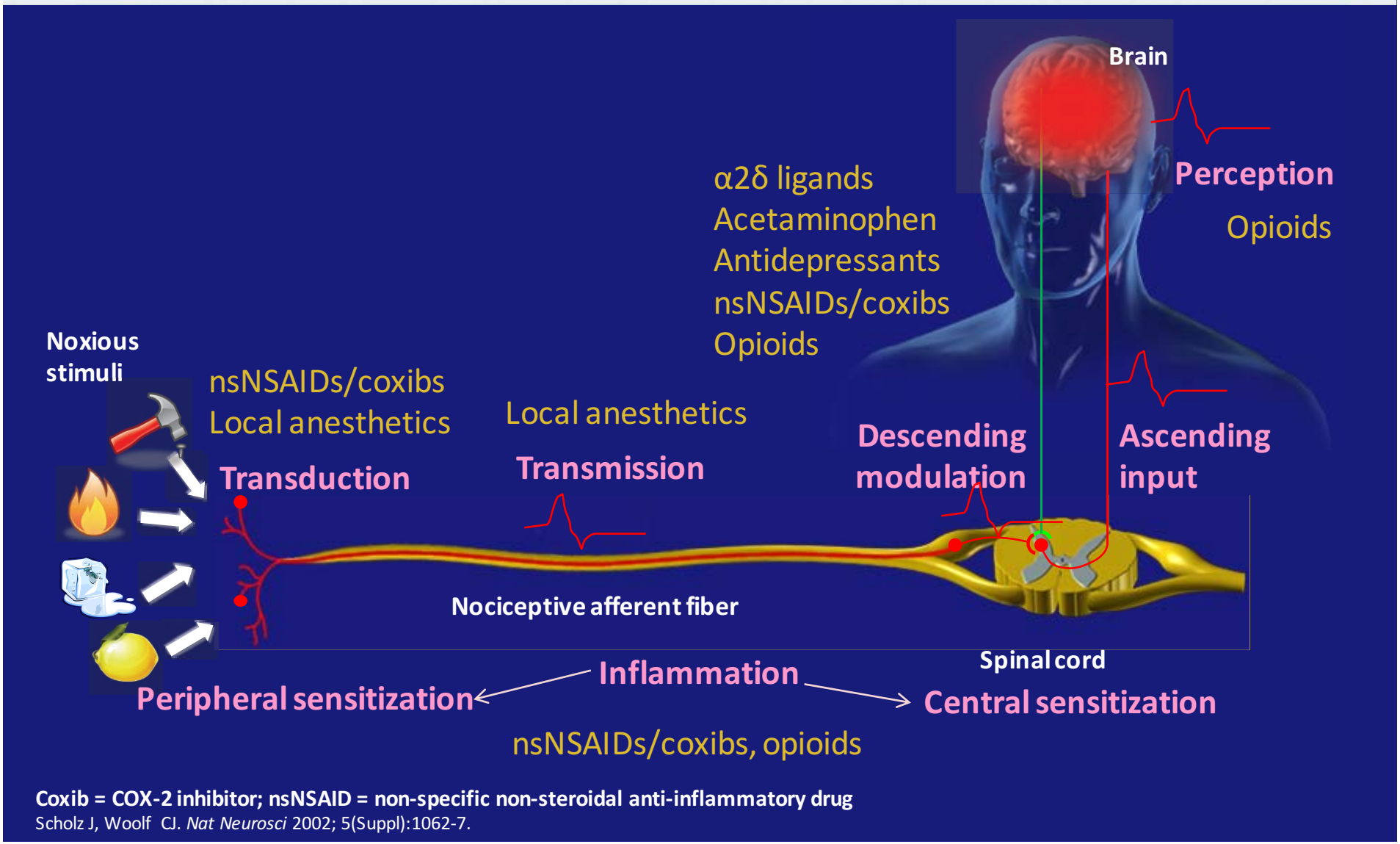
Pharmacological Treatment

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

Miller S. *Prim Care* 2012; 39(3):499-510.

Mechanism-Based Pharmacological Treatment of Nociceptive/Inflammatory Pain



Coxib = COX-2 inhibitor; nsNSAID = non-specific non-steroidal anti-inflammatory drug

Scholz J, Woolf CJ. *Nat Neurosci* 2002; 5(Suppl):1062-7.

nsNSAIDs/Coxibs for Management of Low Back Pain

General Recommendations

- An nsNSAID or coxib may be indicated when an anti-inflammatory analgesic is recommended
- Consider individual risk of side effects
  - Especially in older adults and individuals at increased risk for side effects
- Consider patient preference

Coxib = COX-2-specific inhibitor; nsNSAID = non-selective non-steroidal anti-inflammatory drug;

Savigny P *et al. BMJ* 2009; 338:b1805; Simon LS. *Arthritis Res Ther* 2013; 15(Suppl 3):S1l Stitham J *et al. Curr Mol Med* 2014; [Epub ahead of print].

Recommendations for the Use of nsNSAIDs and Coxibs

- For individuals over the age of 45 years, nsNSAIDs and coxibs should be co-prescribed with a PPI

Coxib = COX-2-specific inhibitor; nsNSAID = non-selective non-steroidal anti-inflammatory drug;

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.

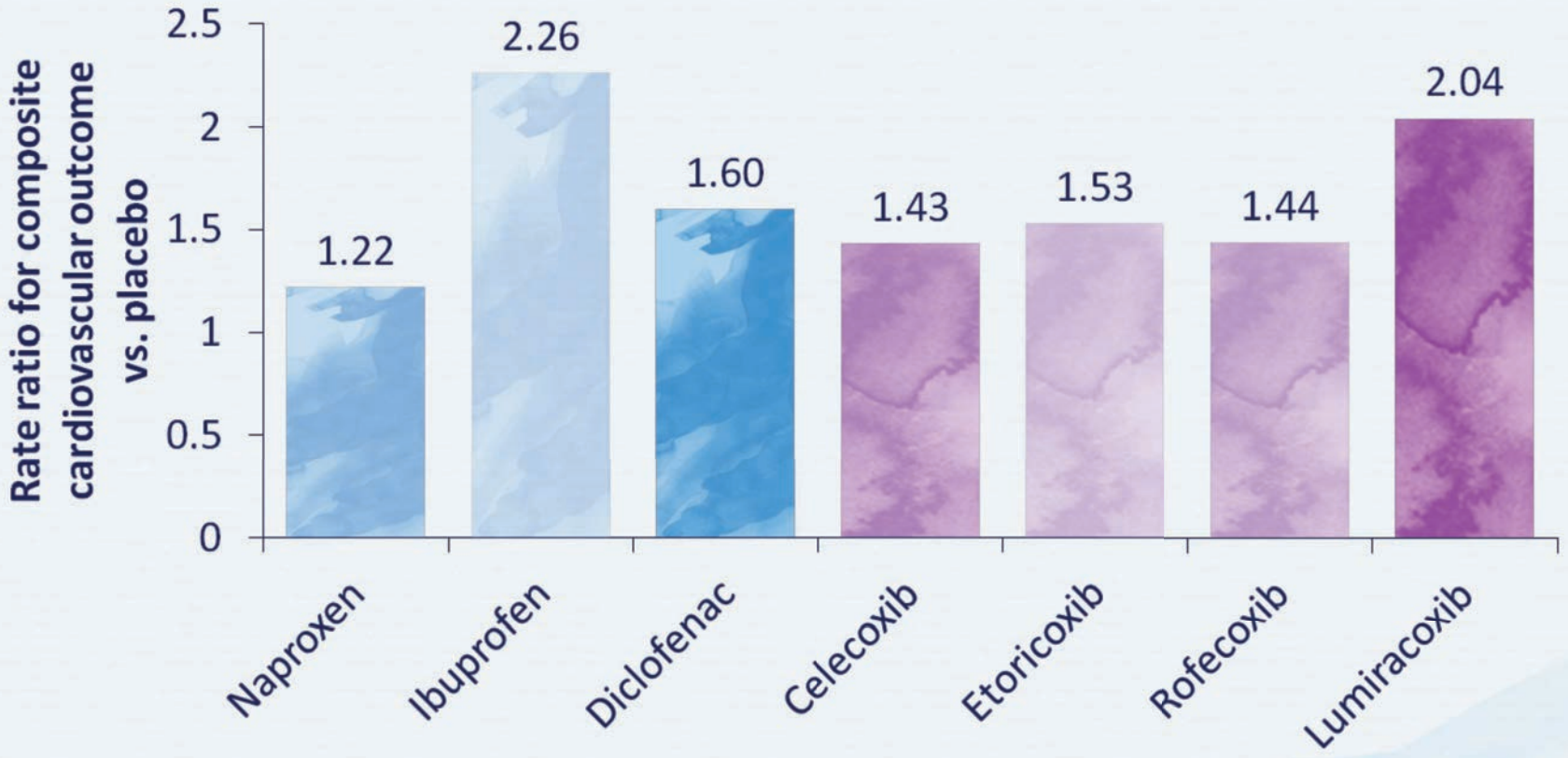
Adverse Effects of nsNSAIDs/Coxibs

- **All NSAIDs:**
  - Gastroenteropathy
    - Gastritis, bleeding, ulceration, perforation
  - Cardiovascular thrombotic events
  - Renovascular effects
    - Decreased renal blood flow
    - Fluid retention/edema
    - Hypertension
  - Hypersensitivity
- **Cox-1-mediated NSAIDs (nsNSAIDs):**
  - Decreased platelet aggregation

Coxib = COX-2-specific inhibitor; NSAID = non-steroidal anti-inflammatory drug; nsNSAID = non-selective non-steroidal anti-inflammatory drug

Clemett D, Goa KL. *Drugs* 2000; 59(4):957-80; Grosser T *et al.* In: Brunton L *et al* (eds.). *Goodman and Gilman's The Pharmacological Basis of Therapeutics*. 12th ed. (online version). McGraw-Hill; New York, NY: 2010.

nsNSAIDs/Coxibs and Cardiovascular Risk



Composite includes non-fatal myocardial infarction, non-fatal stroke, or cardiovascular death compared with placebo; chart based on network meta-analysis involving 30 trials and over 100,000 patients.
Coxib = COX-2 inhibitor; nsNSAID = non-selective non-steroidal anti-inflammatory drug

Trelle S *et al. BMJ* 2011; 342:c7086.

Opioids for the Management of Low Back Pain

Acute or chronic severe low back pain for short periods of time

Efficacy	Safety	Mechanism of Action
• Effective • Evidence insufficient to recommend one opioid over another • Efficacy enhanced by addition of acetaminophen and/or nsNSAIDs/coxibs	• Multiple side effects • Potential for **abuse** or **addiction**	• Alter limbic system activity • Modify sensory and affective pain aspects • Activate descending pathways that modulate transmission in spinal cord • Affect transduction of pain stimuli to nerve impulses

Coxib = COX-2-specific inhibitor; nsNSAID = non-specific non-steroidal anti-inflammatory drug

Chou R *et al. J Pain Symptom Manage* 2003; 26(5):1026-48; Chou R et al. *J Pain* 2009; 10(2):113-30; Furlan AD *et al. CMAJ* 2006; 174(11):1589-94; Kalso E *et al. Pain* 2004; 112(3):372-80; Lee J *et al. Br J Anaesth* 2013; 111(1):112-20; Martell BA *et al. Ann Intern Med* 2007; 146(2):116-27; Rauck RL *et al. J Opioid Manag* 2006; 2(3):155-66; Reisine T, Pasternak G. In: Hardman JG *et al* (eds). *Goodman and Gilman's: The Pharmacological Basics of Therapeutics.* 9th ed. McGraw-Hill; New York, NY: 1996; Scholz J, Woolf CJ. *Nat Neurosci* 2002; 5(Suppl):1062-7; Trescot AM *et al. Opioid Pharmacol Pain Phys* 2008; 11(2 Suppl):S133-53.

Tramadol for the Management of Low Back Pain

- "Atypical" opioid analgesic
- Unique mechanism of action
  - Noradrenergic and serotoninergic pathways
  - Opioid effect depends on conversion to active O-demethylated metabolite M1
- Weak binding affinity to mu opioid receptor
- Clinical studies of efficacy in low back pain
- Consider avoiding use in patients with diabetes due to potential for hypoglycemia

Baer P *et al. Can J Diagnosis* 2010; 27(10):43-50; Deshpande A et al. *Cochrane Database Syst Rev* 2007; 3:CD004959; Janssen Pharmaceuticals Inc. *Tramadol Hydrochloride Tablets Full Prescribing Information.* Titusville, NJ: 2013; Jonville-Bera A *et al. Therapie* 2010; 65(5):499-500;.Schofferman J, Mazanec D. *Spine J* 2008; 8(1):185-94; Taugourdeau S *et al. Rev Med Interne* 2011; 32(11):703-5; Vorsanger GJ *et al. J Opioid Manag* 2008; 4(2):87-97.

Adverse Effects of Opioids

System	Adverse effects
Gastrointestinal	Nausea, vomiting, constipation
CNS	Cognitive impairment, sedation, lightheadedness, dizziness
Respiratory	Respiratory depression
Cardiovascular	Orthostatic hypotension, fainting
Other	Urticaria, miosis, sweating, urinary retention

CNS = central nervous system

Moreland LW, St Clair EW. *Rheum Dis Clin North Am* 1999; 25(1):153-91; Yaksh TL, Wallace MS. In: Brunton L *et al* (eds). *Goodman and Gilman's The Pharmacological Basis of Therapeutics*. 12th ed. (online version). McGraw-Hill; New York, NY: 2010.

Recommendations for the Use of Opioids

Clinical query	Summary of the evidence
Relevant selection from the opioid guidelines	• Evidence shows tapentadol and the buprenorphine transdermal system are clinically effective • Current opioid guidelines recommend the use of weak and strong opioids taking into account patient preferences and requirements…

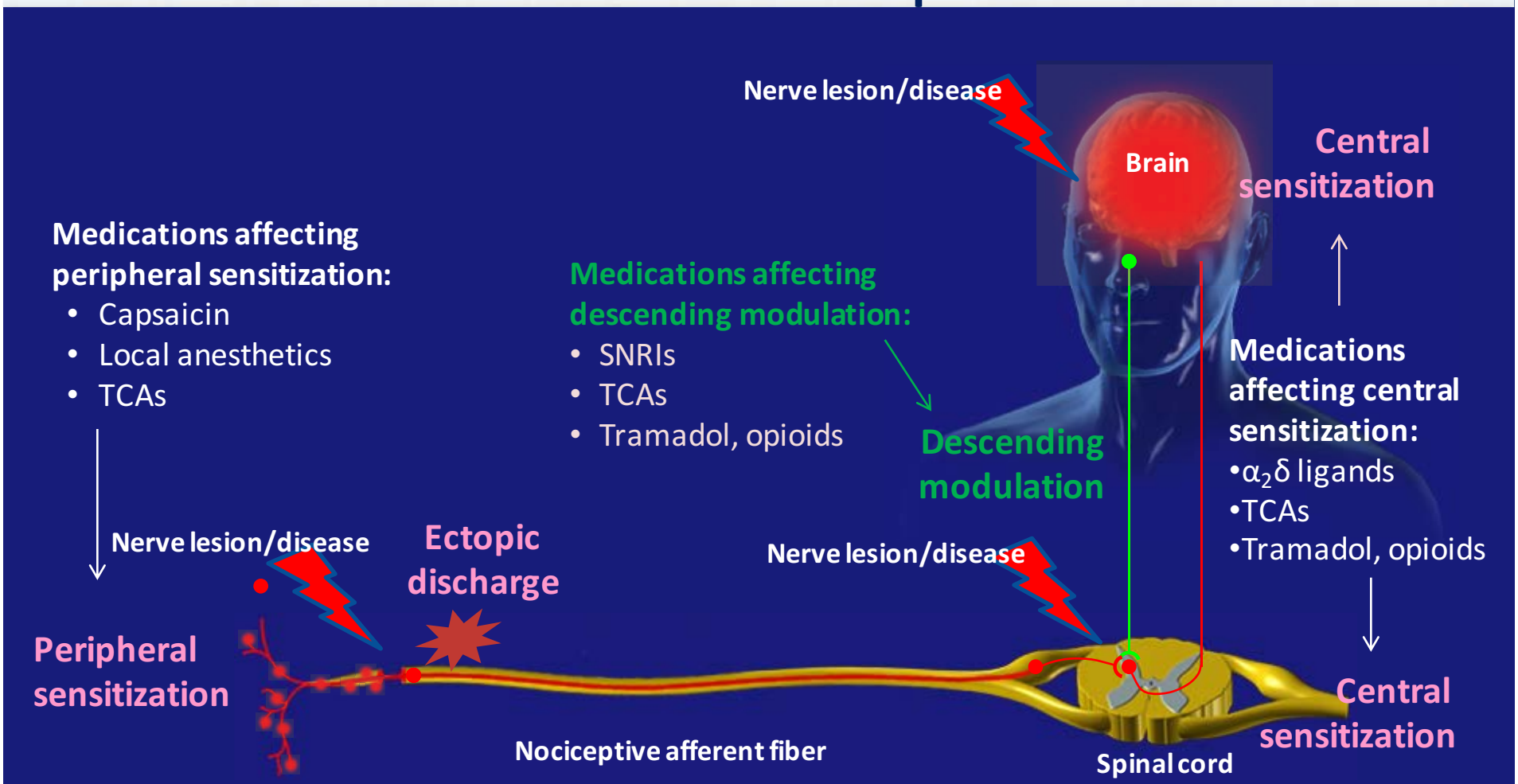
Savigny P *Back Pain: Early Management of Persistent Non-specific Low Back Pain*.
National Collaborating Centre for Primary Care and Royal College of General Practitioners; London, UK: 2009. *et al. Low*

Muscle Relaxants for Management of Low Back Pain

- Diverse group of drugs
- Mechanisms of action not clarified
- Use is controversial, mainly due to side effects and potential for abuse and dependency
- Guidelines do not universally recommend use of muscle relaxants in management of low back pain
- Provide short-term relief of low back pain
  - No differences in efficacy and safety
  - Very few short-term studies
  - No evidence supports long-term use or recommends one over the other

Chou R *et al. J Pain Symptom Manage* 2004; 28(2):140-75; van Tulder MW *et al. Spine (Phila PA 1976)* 2003; 28(17):1978-92.

Mechanism-Based Pharmacological Treatment of Neuropathic Pain



SNRI = serotonin-norepinephrine reuptake inhibitor; TCA = tricyclic antidepressant

Adapted from: Attal N *et al. Eur J Neurol* 2010; 17(9):1113-e88; Beydoun A, Backonja MM. *J Pain Symptom Manage* 2003; 25(5 Suppl):S18-30; Jarvis MF, Boyce-Rustay JM. *Curr Pharm Des* 2009; 15(15):1711-6; Gilron I *et al. CMAJ* 2006; 175(3):265-75; Moisset X, Bouhassira D. NeuroImage 2007; 37(Suppl 1):S80-8; Morlion B. Curr Med Res Opin 2011; 27(1):11-33; Scholz J, Woolf CJ. Nat Neurosci 2002; 5(Suppl):1062-7.

α2δ Ligands* for Management of Low Back Pain

Useful in combination with other treatments for low back pain with a neuropathic component

Efficacy	Safety	Mechanism of Action
• Pregabalin + coxib combination is more effective than each drug used alone for management of chronic low back pain	• Most common side effects are dizziness and somnolence	• Bind to $\alpha_2\delta$ subunit of calcium channel, which is upregulated in neuropathic pain • Binding reduces neurotransmitter release and pain sensitization

***Gabapentin and pregabalin are $\alpha_2\delta$ ligands**
Coxib = COX-2-specific inhibitor

Attal N, Finnerup NB. *Pain Clinical Updates* 2010; 18(9):1-8; Bauer CS *et al. J Neurosci* 2009; 29(13):4076-88;
Chou R *et al. Ann Intern Med* 2007; 147(7):505-14; Lee J *et al. Br J Anaesth* 2013; 111(1):112-20; Romanó C *et al. J Orthop Traumatol* 2009; 10(4):185.

Antidepressants for Management of Low Back Pain

Useful in combination with other treatments for low back pain with a neuropathic component

Efficacy	Safety	Mechanism of Action
• Not recommended for non-specific acute low back pain • May be considered for low back pain with a neuropathic component	• TCAs can cause cognitive disorders, confusion, gait disturbance and falls • SNRIs are contraindicated in severe hepatic dysfunction or unstable arterial hypertension	• Inhibit reuptake of serotonin and norepinephrine, enhancing descending modulation

TCA = tricyclic antidepressant; SNRI = serotonin norepinephrine reuptake inhibitor

Attal N, Finnerup NB. *Pain Clinical Updates* 2010; 18(9):1-8; Lee J *et al. Br J Anaesth* 2013; 111(1):112-2; Skljarevski V *et al. Eur J Neurol* 2009; 16(9):1041-8; Verdu B *et al. Drugs* 2008; 68(18):2611-32.

Analgesic Intervention for Management of Low Back Pain

- **Epidural block with steroids** (high quality of evidence)
  - Reasonable alternative to surgery
  - Recommend only for radiculopathy
  - Transforaminal route is preferred
  - Always image-guided
  - Use small-particle steroids
    - Dexamethasone 4 mg is sufficient

Ackerman WE, Ahmad M. *Anesth Analg* 2007; 104(5):1217-22; Ahadian FM *et al. Reg Anesth Pain Med* 2011; 36(6):572-8; Benzon HT *et al. Anesthesiology* 2007; 106(2):331-8; Chou R *et al. Ann Intern Med* 2007; 147(7):478-91; DePalma MJ, Slipman CW. *Spine J* 2008; 8(1):45-55; McLain RF *et al. Spine J* 2005; 5(2):191-201; Sasso RC *et al. J Spinal Disord Tech* 2005; 18(6):471-8.

Analgesic Intervention for Management of Low Back Pain (cont'd)

- **Facet block** (moderate quality of evidence)
  - Many false positive results
  - Significant placebo effect
  - At least 2 blocks must be performed before a more advanced form of therapy is recommended
  - Pericapsular or medial branch are equally effective

- **Radiofrequency lysis** (low quality of evidence)
  - Root and facet
    - More prolonged relief
    - Ineffective for failed spinal surgery syndrome

Abejón D et al. *Pain Pract* 2007; 7(1):21-6; Birkenmaier C *et al. Reg Anesth Pain Med* 2007; 32(1):27-33; Bogduk N. *Spine J* 2008: 8(1):56-64; Pampati S *et al. Pain Physician* 2009; 12(5):855-66.

Combined Therapy for Management of Low Back Pain

- Type of therapy used by many physicians
- Muscle relaxers + analgesic or NSAID
- Opioids + NSAID
- Insufficient evidence to support a recommendation about its use in low back pain

NSAID = non-steroidal anti-inflammatory drug

Chou R *et al. Ann Intern Med* 2007; 147(7):505-14; Jamison RN *et al. Spine (Phila Pa 1976)* 1998; 23(23):2591-600
van Tulder MW *et al. Cochrane Database Syst Rev* 2000; 2:CD000396.

Therapeutic Recommendations for Management of Low Back Pain

	Non-specific Low Back Pain	Radicular Pain
Acute	• Acetaminophen • nsNSAIDs/coxibs • Co-prescribe PPI for patients aged >45 years • Weak opioids • Muscle relaxants	If radicular pain is prominent consider addition of: • $\alpha^2\delta$ ligands • TCAs
Chronic	Refer to specialist for: • 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.

Management of Low Back Pain: Summary

- An interdisciplinary approach should be used to address pain
  - Include patient education and non-pharmacological therapies
- Patients with acute low back pain should return to activity promptly and gradually
  - Bed rest is discouraged
- Supervised exercise and cognitive behavioral therapy may be useful for chronic low back pain
- Pharmacotherapy for acute low back pain may include acetaminophen, nsNSAIDs/coxibs, weak opioids and/or muscle relaxants
  - Addition of α2δ ligands or TCAs should be considered if radicular pain is present
- Patients with longer duration of low back pain should be assessed for neuropathic and central sensitization/dysfunctional pain
  - These patients may require referral to a specialist

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

TERIMA KASIH