

An Intensive Multi-day Opioid REMS Initiative in Pain Management



Please see https://www.opioidanalgesicrems.com/Resources/Docs/List_of_RPC_Companies.pdf for a listing of REMS Program Companies. This activity is intended to be fully compliant with the Opioid Analgesic REMS education requirements issued by the U.S. Food and Drug Administration (FDA).

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Advanced Pain Management Strategies: Interventional Approaches

When should we consider a big needle?



This activity may include discussions of products or devices that are not currently labeled for use by the U.S. Food and Drug Administration (FDA).

The faculty have been informed of their responsibility to disclose to the audience if they will be discussing off-label or investigational uses (any uses not approved by the FDA) of products or devices.



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Learning Objective

- Educate patients about multimodal pain management to optimize safe and effective, multimodal treatment plans

Audience Poll



What comes to mind when you think of “interventional pain management?”

Audience, type in your answers.

Don't worry: You won't offend me!

Interventional Pain Management

Categories of Interventional Treatments

- Anti-inflammatory
 - Normally steroid injections
 - Goal is to reduce inflammation
- Ablative
 - Destroying pain pathways
 - Can be done with extreme heat, cold, and/or chemical

Categories of Interventional Treatments

- Neuromodulative
 - Electroceutical
 - Voltage-gate theory of pain
 - Can we use electricity to block nerve channels?
- Restorative
 - Structural interventions
 - Fix problem



Mechanisms of Pain Modulation

- Anti-inflammatory – Calm down excitatory event
- Ablative – Block the road
- Neuromodulative – Add more cars to the road
- Restorative – Stop the initial event

Anti-inflammatory

Epidural Steroid Injections

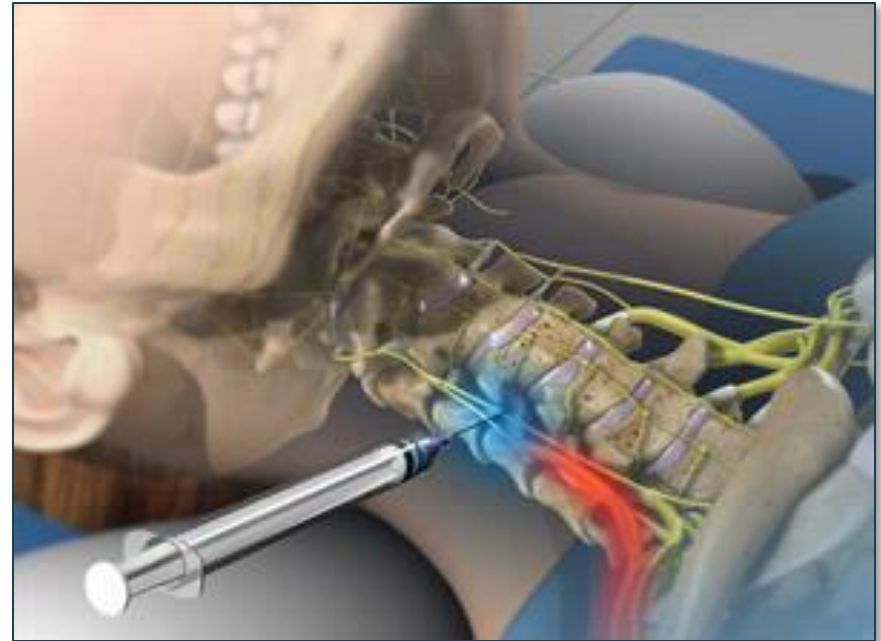
- Indications
 - Radiculopathy
 - Spinal Stenosis
 - Herniated Discs
 - After failed conservative management or patient can't tolerate conservative management
- Efficacy
 - Allow for short-term to medium-term pain improvement so that body can heal
 - Reduced risks and side effects to oral steroids

Epidural Steroid Injections

Interlaminar



Transforaminal



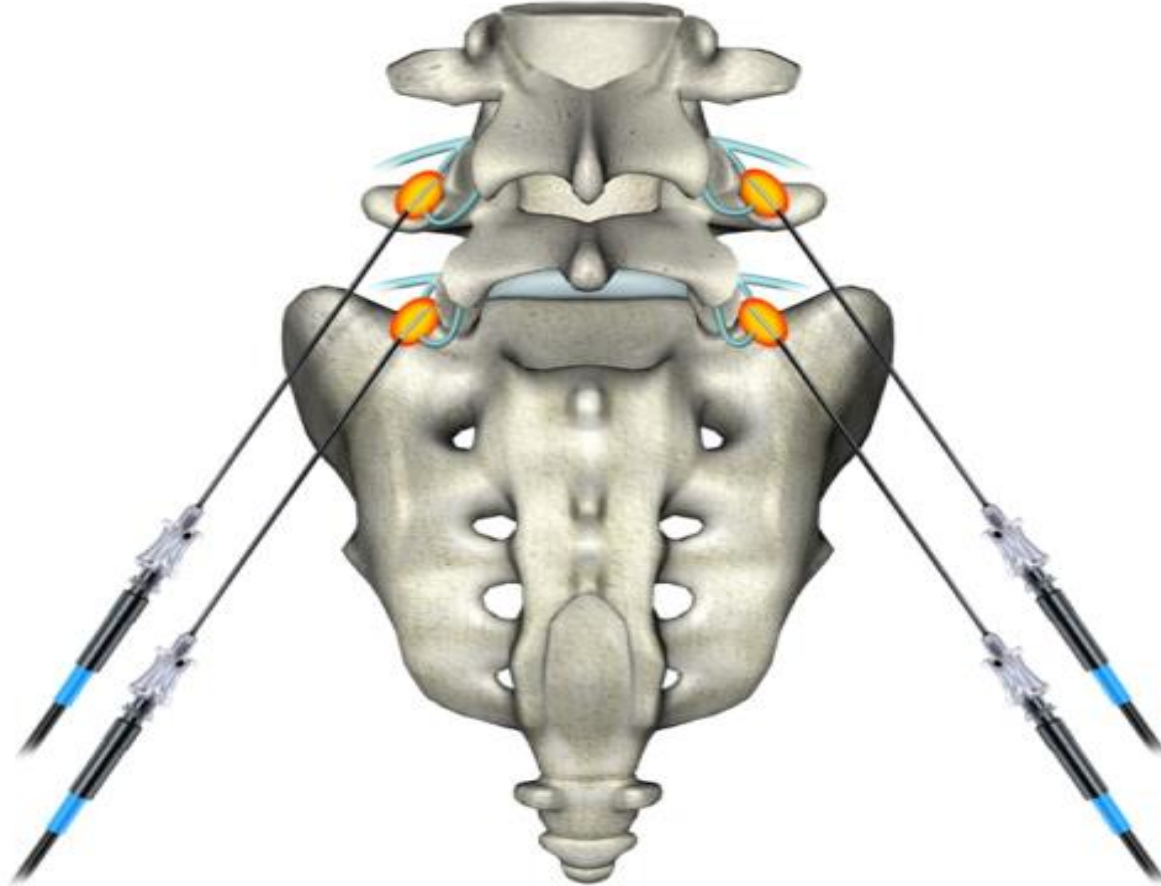
Interarticular Joint Injections



Ablative

Primary Care
SCREENING
Interpretation
Competent Prescribing
Acute Pain
SUBACUTE PAIN
persistent pain
Clinical Assessment
Non-opioid Strategies
DIAGNOSTIC TOOLS
MONITORING
CARE TEAM
SUBSTANCE USE DISORDER
Physiologic Mechanisms
pain mechanisms
MISAPPLICATION
Guidelines
Safe Prescribing
RISKS
Stigmas
PAs
BARRIERS
Implicit Bias
Pain Origins
OPIOID USE DISORDER
functional assessment
Psychologists
RISK ASSESSMENT
Discontinuation
Quality of Life
TREATMENT
Tapering
Education
Pharmacists
Nurses
Mental Health
RACIAL INEQUITIES
BIOPSYCHOSOCIAL CONTRIBUTORS
Dentists
Evaluation
EMOTIONAL HEALTH
Specialists
Shared Decision Making
Overdose
Palliative Care
Physicians
Studies
Misconceptions
OPIOID CRISIS
Pain Care
Opioid REVIS
Information
NPs
PAIN MANAGEMENT
Pharmacist

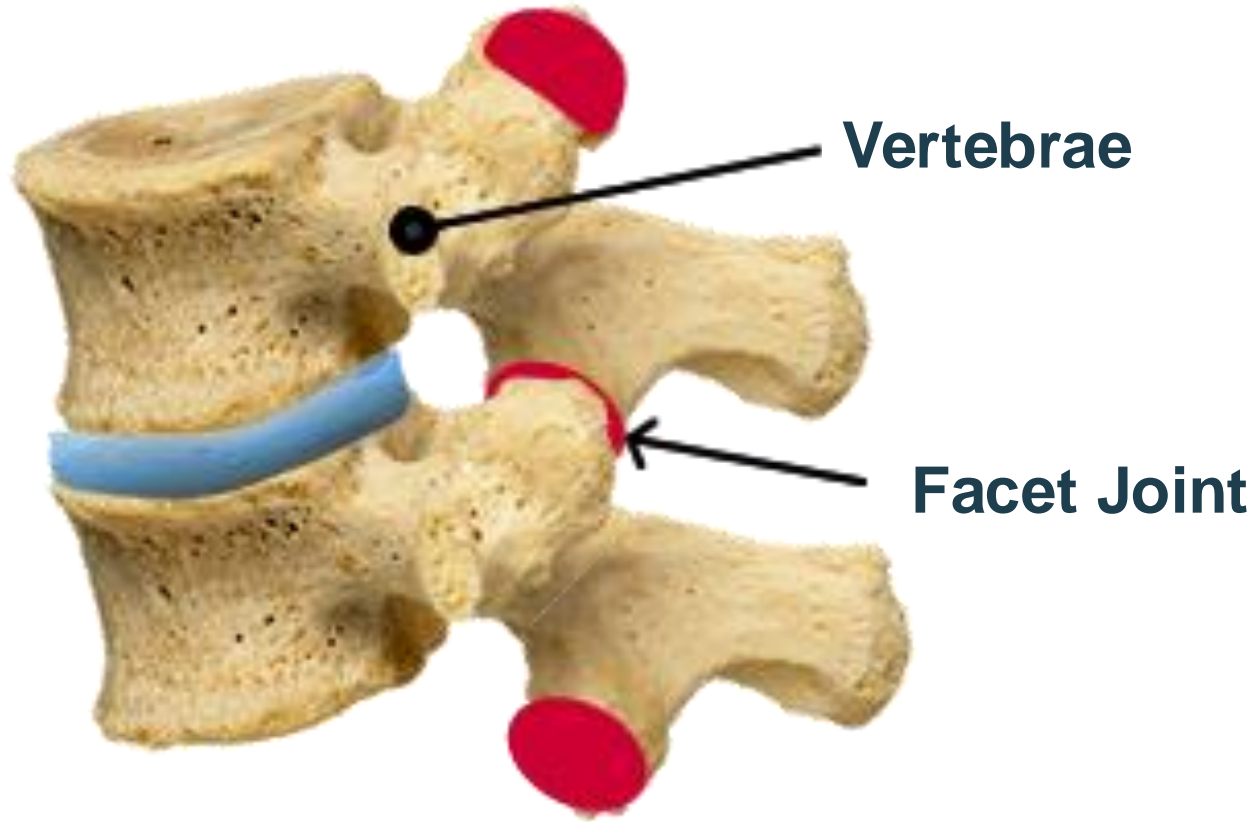
Radiofrequency Ablation



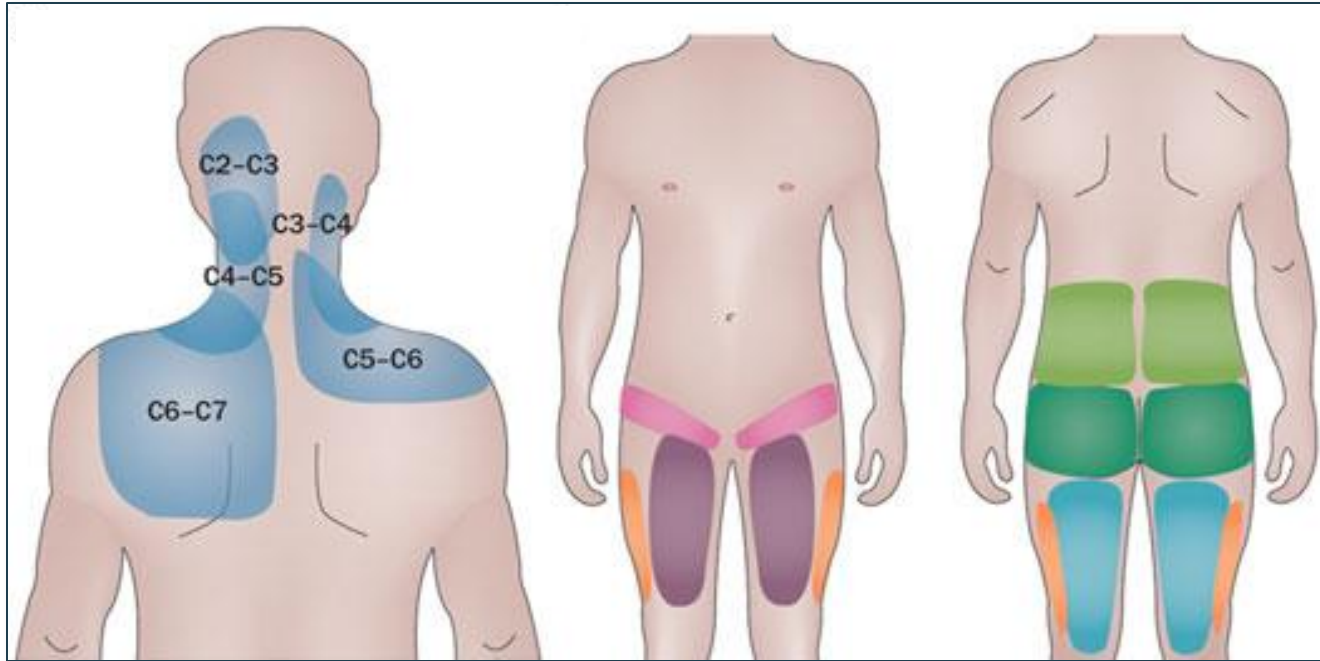
Radiofrequency Ablation

- Indications: Facet joint pain, sacroiliac joint pain, hip/knee joint pain
- Mechanism of action: Destruction of sensory nerve innervation to painful areas
- Duration of relief: 6 months – 2 years
- Risks: Collateral damage
- Types: Thermal, Cooled, Pulsed

Lumbar Facet Disease

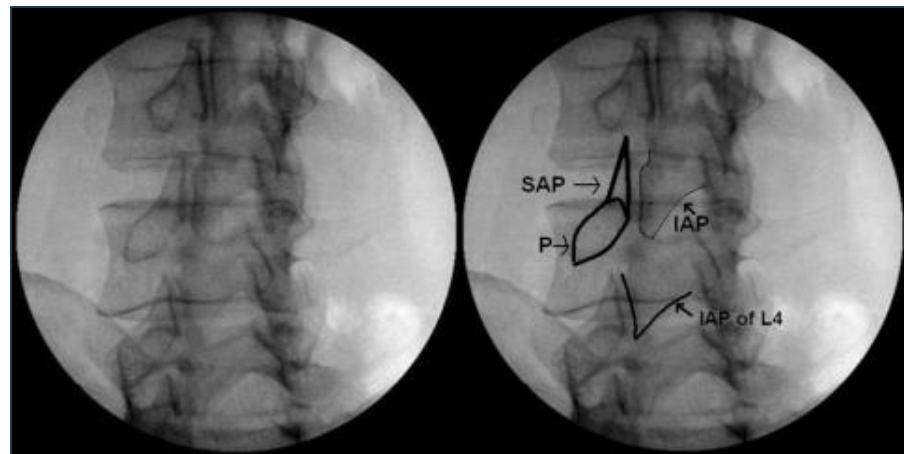
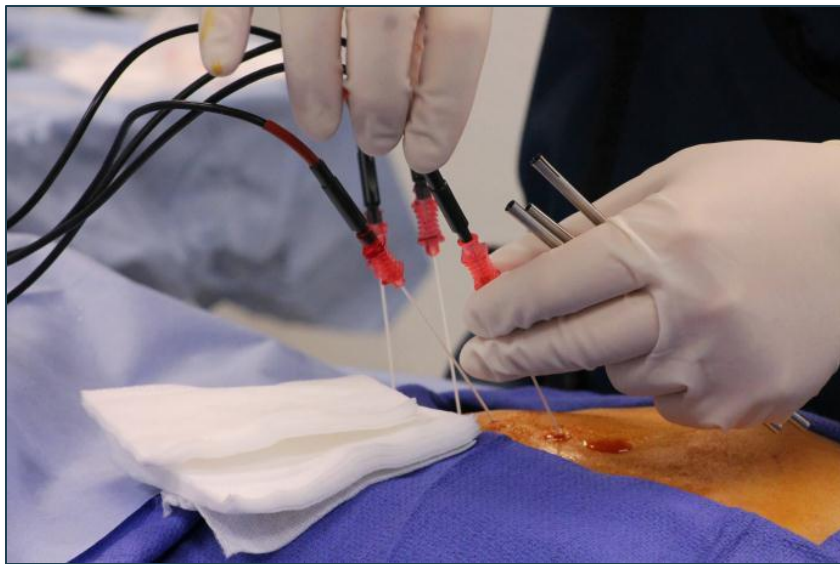


Lumbar Facet Disease



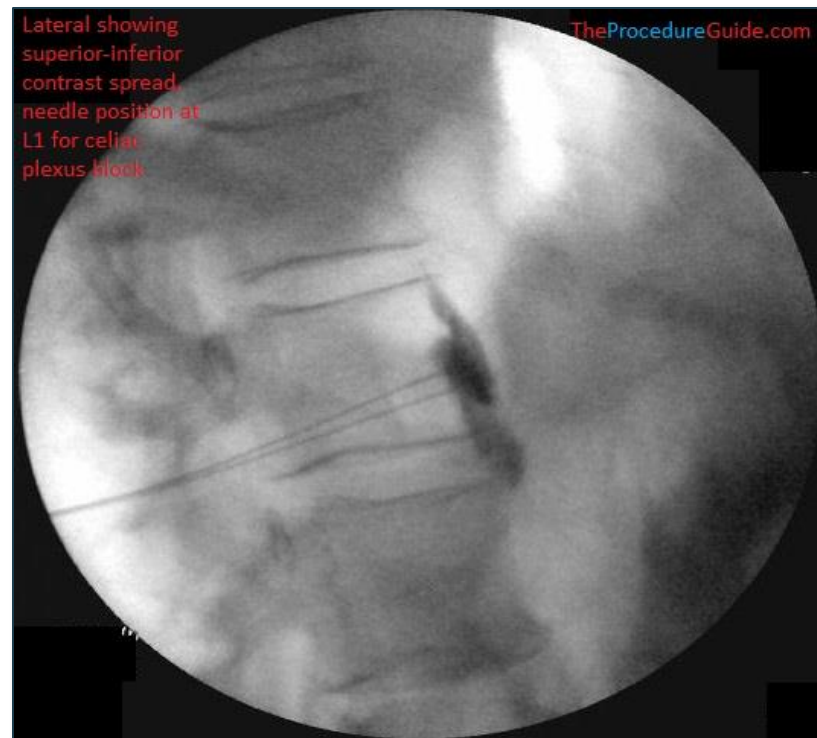
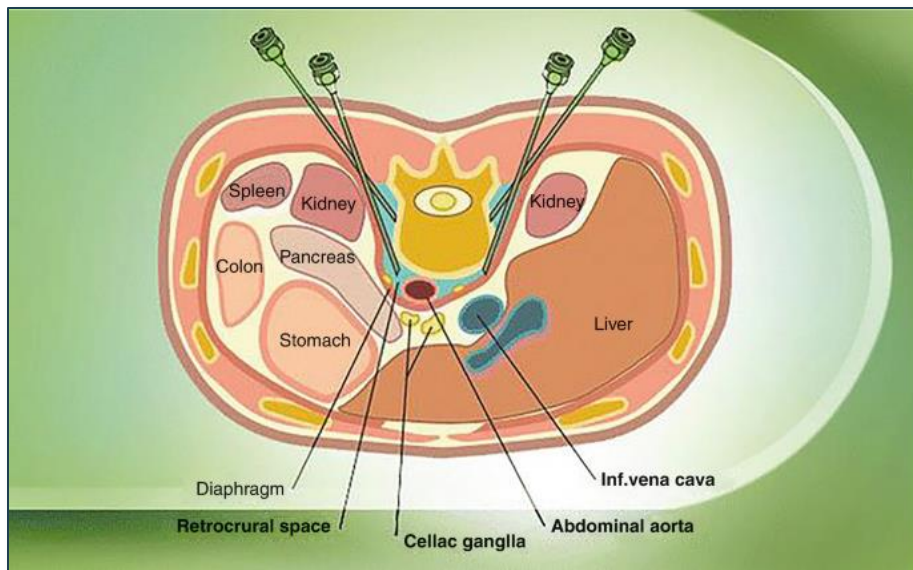
- Lumbar (L1–L5)
- Lower lumbar/gluteal (L2–S1)
- Posterior thigh (L3–S1)
- Lateral thigh (L2–S1)
- Anterior thigh (L3–S1)
- Groin (L3–S1)

Lumbar Radiofrequency Ablation



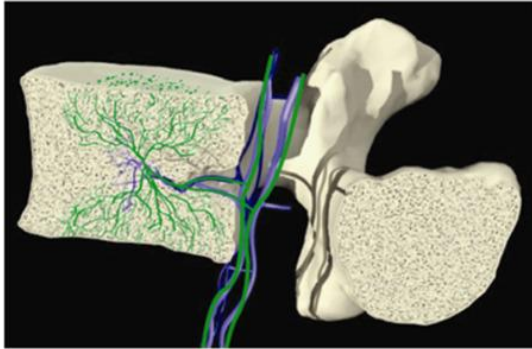
Chemical Neurolysis

- Phenol vs alcohol
- Intractable cancer pain

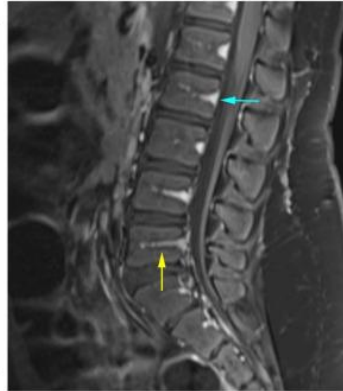


Basivertebral Nerve Ablation

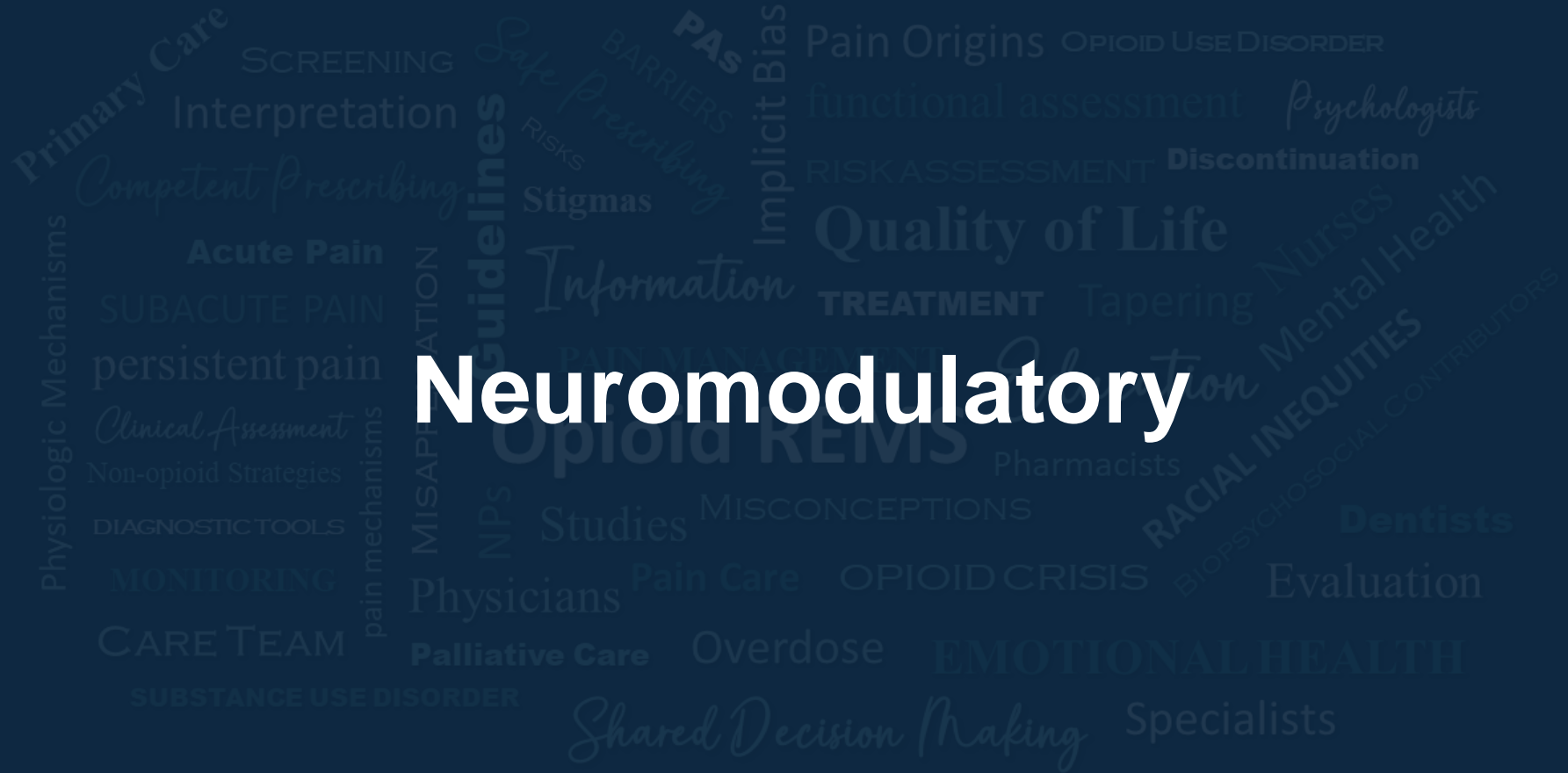
Distribution of the
Basivertebral nerve



Basivertebral
Foramen



Neuromodulatory



Neuromodulation

- Application of targeted electrical, chemical, and biological technologies to the nervous system in order to improve function and quality of life
- Examples:
 - Spinal Cord Stimulation – Chronic pain
 - Dorsal Root Ganglion Stimulation – CRPS
 - Peripheral Nerve Stimulation – Nerve injury
 - Deep Brain Stimulation – Parkinson's Disease
 - Targeted Drug Delivery – Terminal cancer pain

Vibration/Touch > Pain



Indications

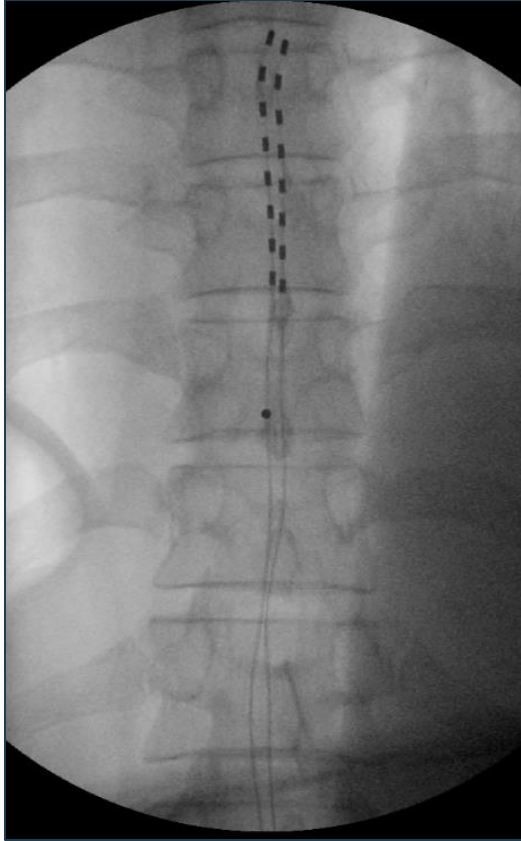
- **Post-Laminectomy Syndrome (Failed Back Surgery Syndrome)**
- **Chronic Lumbar Radiculopathy**
- **Complex Regional Pain Syndrome**
- **Diabetic Peripheral Neuropathy**
- **Peripheral Vascular Disease**
- **Refractory Angina**

Neuromodulation

- Delivery methods
 - Spinal cord stimulation
 - DRG stimulation
 - Peripheral nerve stimulation
- Waveform technology
 - High frequency/burst
 - Closed loop
 - Ultralow frequency



Implant



Photos courtesy of Johnathan Goree, MD

Controversy



Restorative

Vertebral Augmentation

- Indications: Osteoporotic fractures, malignancy-related fractures
- Patient selection: Failed conservative management, worsening immobility causing other cardiopulmonary risk factors, no retropulsion

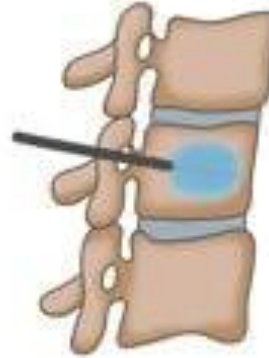
Vertebral Augmentation



1. Vertebral fracture



2. Insertion of
expandable device
under image guidance

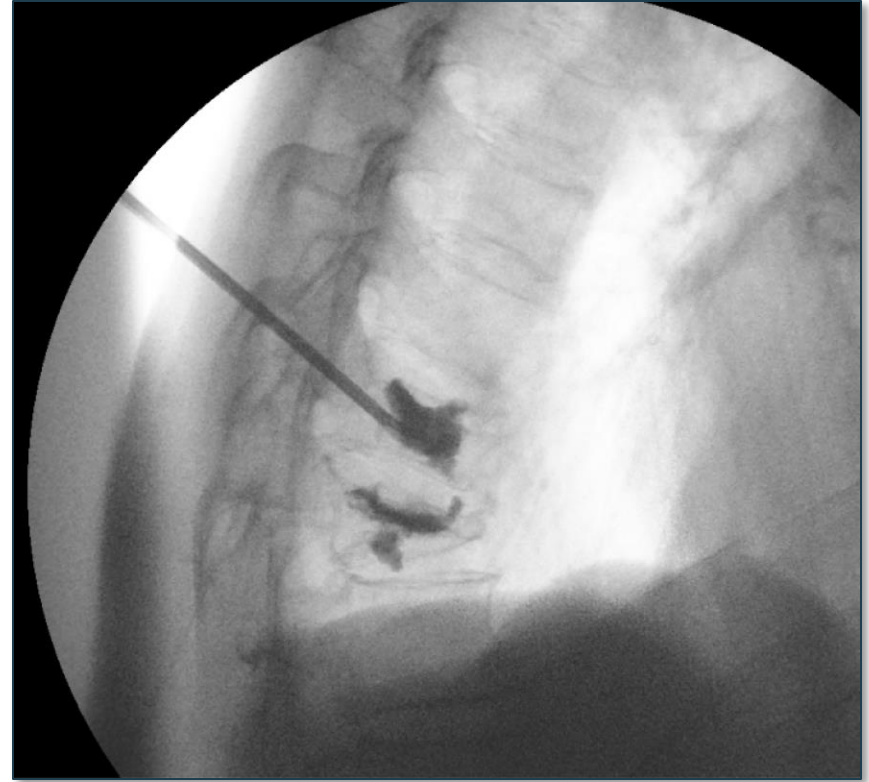
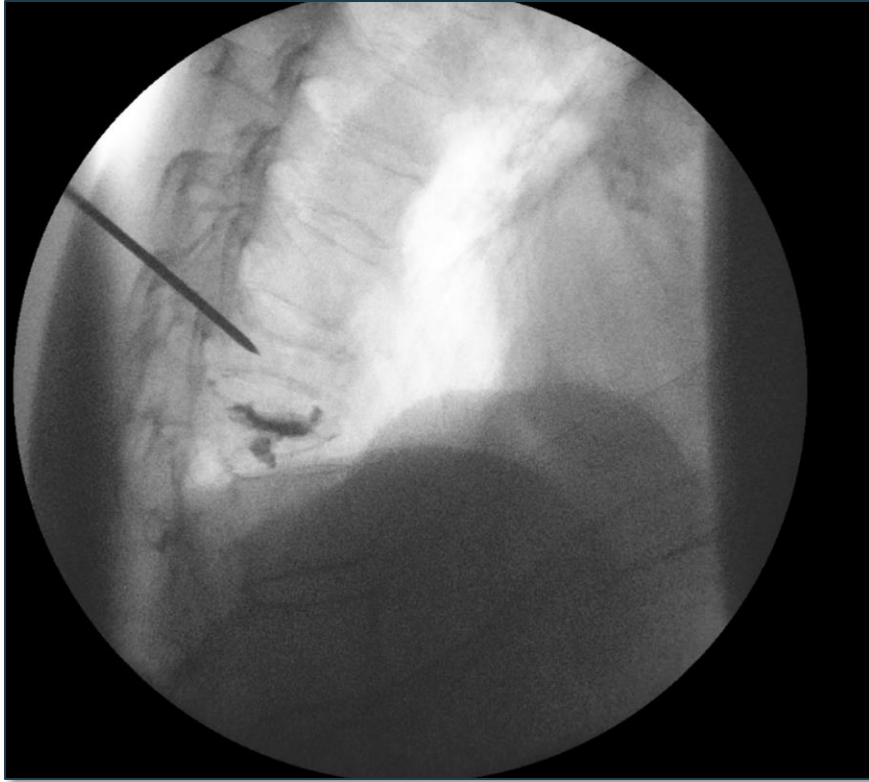


3. Balloon expanded

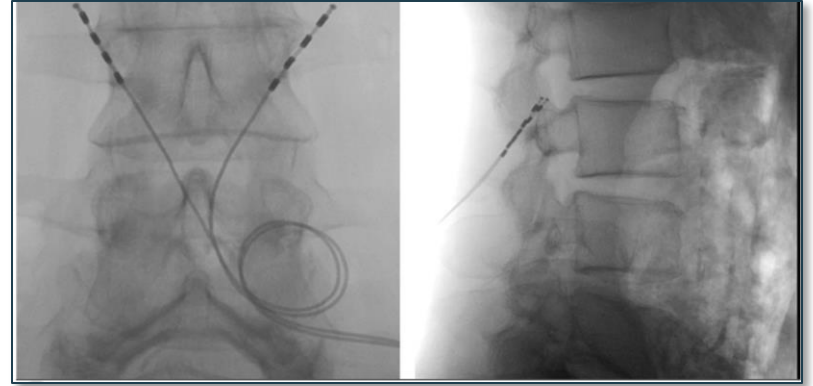
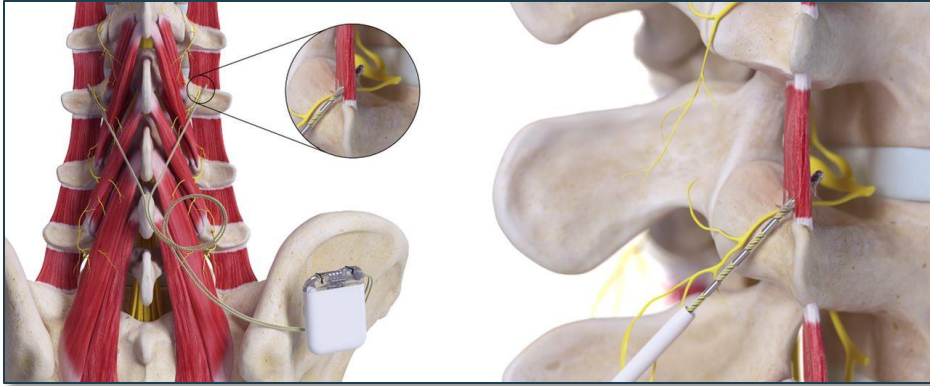


4. Cement injected
into space created

Vertebral Augmentation



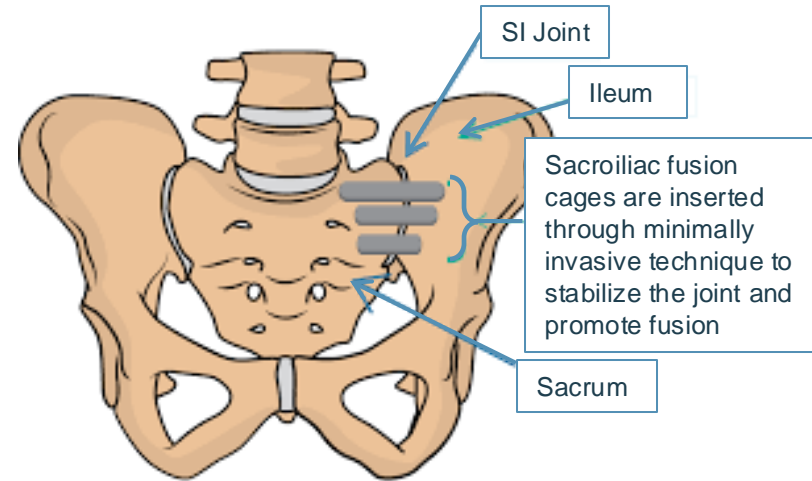
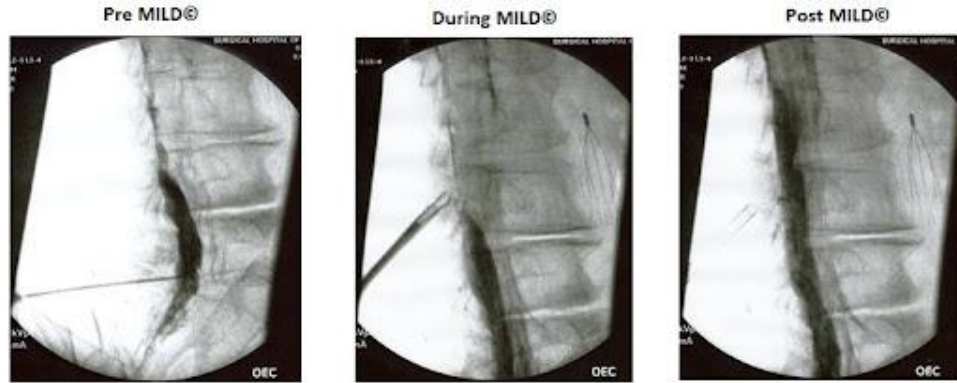
Restorative Neuromodulation



Regenerative Medicine

- Platelet-rich plasma vs. stem cell therapy
 - Indications:
 - Degenerative disc disease
 - Osteoarthritis
 - Limitations:
 - Payer approval
 - Limited evidence

Spinal Endoscopy and Minimally Invasive Surgery



Patient Case: Bob



72 y/o male with severe back pain and intermittent pain down his right leg for 6 months enters the clinic.



Presents at clinic with severe back pain and intermittent pain down his right leg for 6 months enters the clinic.

Solutions?

- Anti-inflammatory?
 - MRI w/ herniated L5-S1 disc with right-sided L5 impingement
 - Transforaminal epidural steroid injection
- Ablative
 - Exam positive facet loading, pain to facet palpation, facet hypertrophy on MRI
 - Lumbar radiofrequency ablation

Solutions

- Neuromodulative?
 - History of L5-S1 discectomy and L4-S1 posterior fusion. MRI with arachnoiditis at L4.
 - Spinal Cord Stimulation
- Restorative?
 - History of a fall 8 weeks ago with severe pain to palpation at L4 with MRI showing 50% compression fracture of L4 vertebral body
 - Kyphoplasty

SMART Goals

Specific, Measurable, Attainable, Relevant, Timely

Put information into action! Consider the following goals; then *set a time frame* that fits with your work environment and *a reasonable improvement target* that aligns with your patient population.

- Increase knowledge on interventional pain treatments and when they are most effective
- Educate patients on the options that may be available to them when they are referred to an interventional pain specialist

Thank you.

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