Updates in Pain Medicine

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Conflict of Interest

NONE

Roadmap

- Updates in regulatory measures
  - DEA Requirements
  - Oregon Medical Board requires
- Updates in pain as pathology
  -IASP and WHO definitions
  -Changing the conversation about pain
- Emerging interventions
  -for arthritis, nerve blocks and ablations and nerve stimulations
- Conclusion

Why Update?

- Chronic function limiting pain is very prevalent

From: **Estimated Rates of Incident and Persistent Chronic Pain Among US Adults, 2019-2020**

JAMA Netw Open. 2023;6(5):e2313563. doi:10.1001/jamanetworkopen.2023.13563

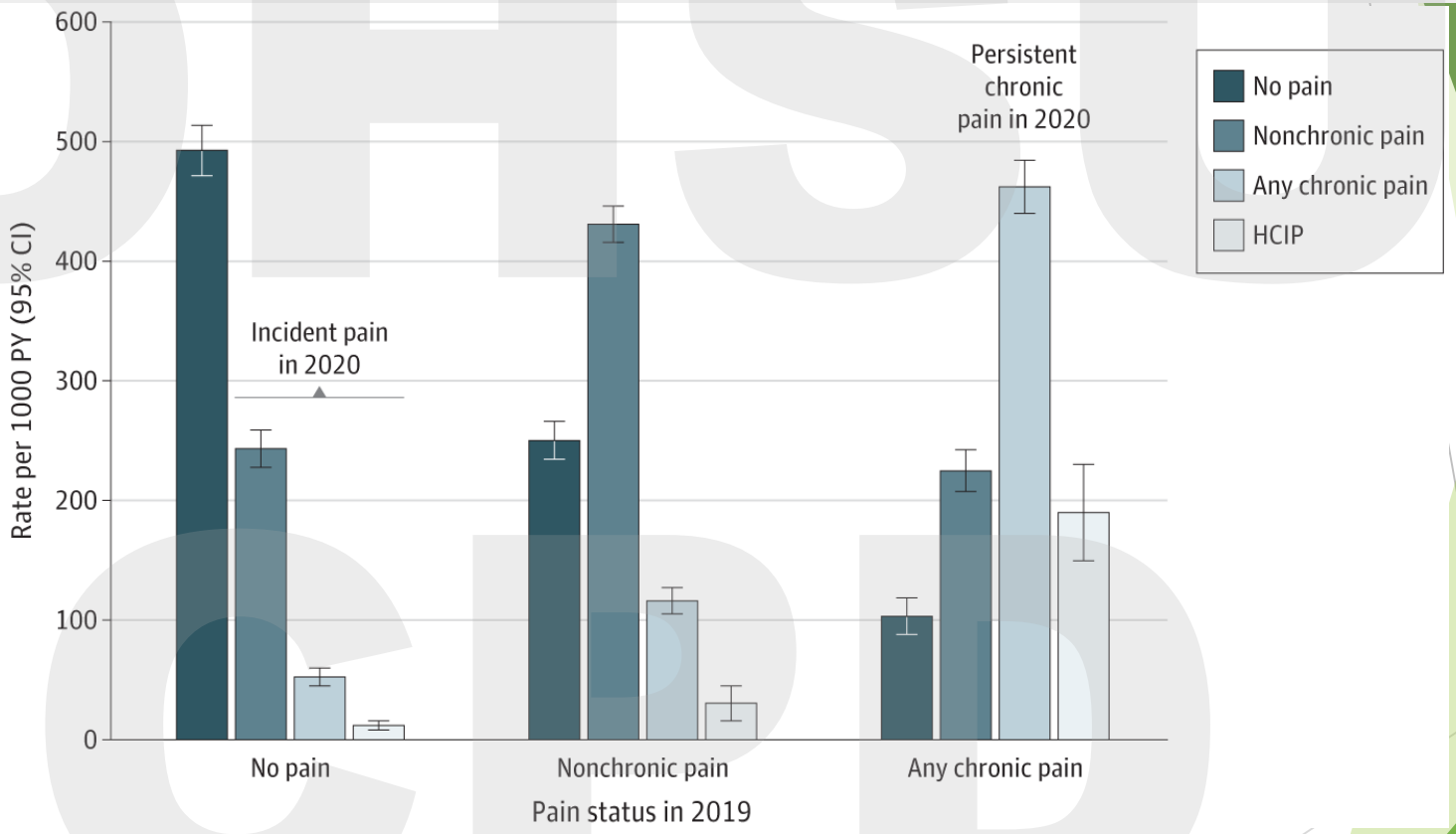


Figure Legend:

Rates of Pain in 2020 by Pain Status in 2019 No pain was defined as no pain in the past 3 months, nonchronic pain as pain on some days in the past 3 months, and chronic pain as pain on most days or every day in the past 3 months. High-impact chronic pain (HICP) was defined as chronic pain that limited life or work activities on most days or every day during the past 3 months. Rates were estimated using longitudinal survey weights supplied by the National Center for Health Statistics (10 415 participants included in the analysis; total weighted population of 250.9 million adults who were age standardized to the age distribution of the US population in 2010). The whiskers represent 95% CIs. PY indicates person-years.

Cancer Related Pain

- prevalence 33% in patients after curative treatment,
- to 59% in patients on anticancer treatment
- 64% in patients with metastatic, advanced or terminal disease
- Pain has a high prevalence earlier in disease in specific cancer types such as pancreatic (44%) and head and neck cancer (40%)
- POOR QUALITY OF LIFE

Fallon, Marie, et al. "Management of cancer pain in adult patients: ESMO Clinical Practice Guidelines." *Annals of Oncology* 29 (2018): iv166-iv191.

- As a public health effort, regulatory and research agencies are shifting the conversation away from medication treatment of chronic pain.
- How?

CDC Updated Guidelines 2022

1. Maximize nonopioid treatments for acute pain
2. Non-opioids are preferred over opioids
3. Start with immediate release opioids
4. Lowest effective dose, avoid escalation
5. **opioid therapy should not be discontinued abruptly, and clinicians should not rapidly reduce dose**
6. no greater quantity than needed for the expected duration of pain
7. evaluate within 1–4 weeks
8. evaluate risk for opioid-related harms
9. PDMP
10. toxicology testing
11. **caution when prescribing opioid and benzodiazepines** concurrently
12. **Detoxification without medications for opioid use disorder, is not recommended**

Oregon – Oregon Medical Board 2022

- All Oregon Medical Board licensees must complete the Oregon Pain Management Commission's (OPMC) continuing education course Changing the Conversation About Pain“ at initial licensing and then every 2 years.

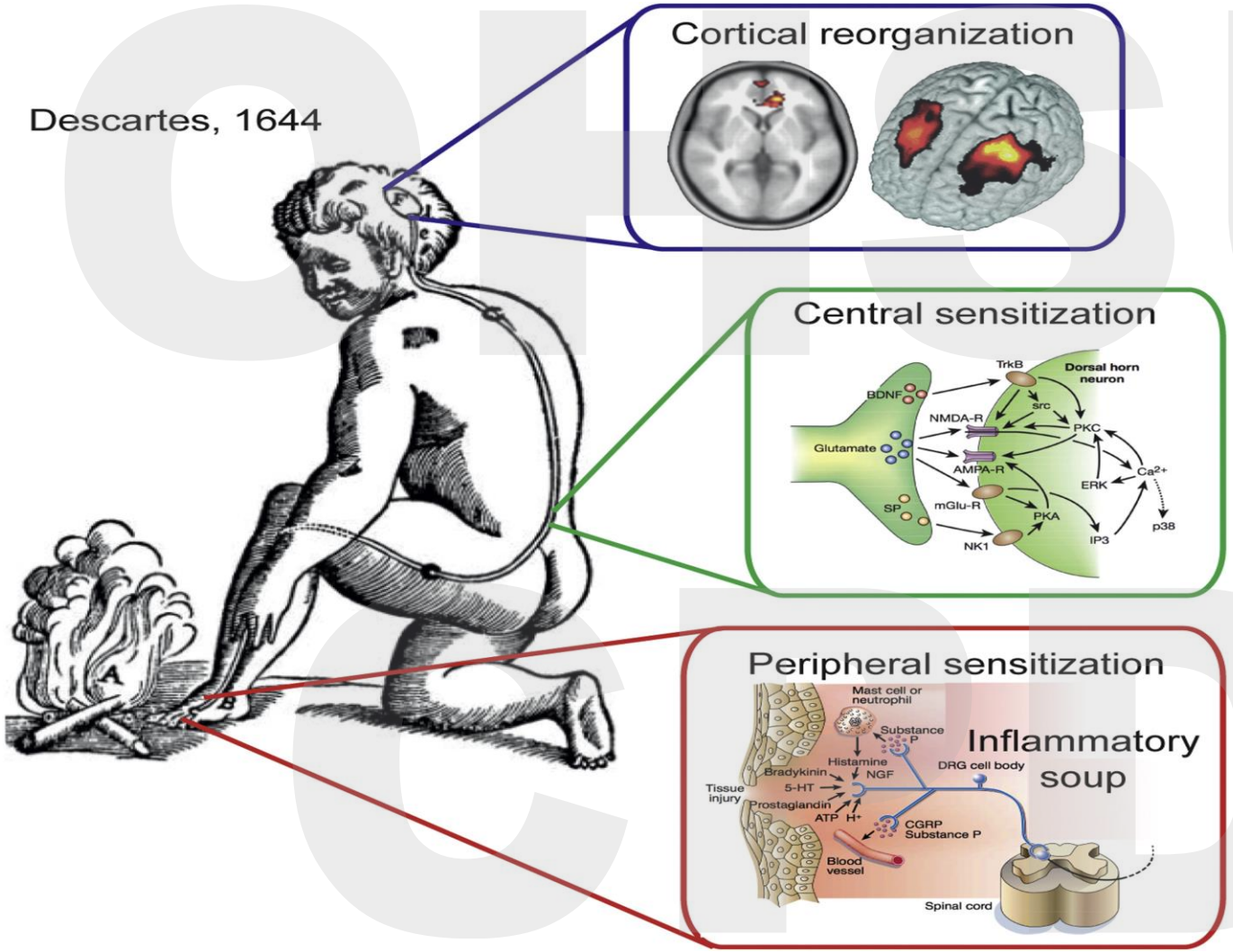
- Visit OregonPainGuidance.org/paineducationtoolkit to access the toolkit. A clinician-focused version is also available at OregonPainGuidance.org/paineducationtoolkitforclinicians.

How Did the Conversation Change:

Assess pain as a biopsychosocial disease instead of nociception

- Sleep
- Nutrition
- Activity
- Mood
- Social connections
- Flare-ups
- Medications

The evolution from nociception to biopsychosocial pain



Baliki, Marwan N., and A. Vania Apkarian. "Nociception, pain, negative moods, and behavior selection." *Neuron* 87.3 (2015): 474-491.

The Definition of Pain -- IASP

"An unpleasant sensory and emotional experience associated with, or resembling that associated with, actual or potential tissue damage,"

https://www.iasp-pain.org/publications/iasp-news/iasp-announces-revised-definition-of-pain/

The Biopsychosocial Aspects of Chronic pain -2020 IASP Update

- Pain is always a **personal experience** that is influenced to varying degrees by **biological, psychological, and social factors.**
- Pain and **nociception** are different phenomena. Pain cannot be inferred solely from activity in sensory neurons.
- Through their **life experiences**, individuals learn the concept of pain.
- A person's **report** of an experience as pain should be **respected**.
- Although pain usually serves an adaptive role, it may have adverse effects on function and social and psychological well-being.
- Verbal description is only one of several behaviors to express pain; **inability to communicate does not negate** the possibility that a human or a nonhuman animal experiences pain.

https://www.iasp-pain.org/publications/iasp-news/iasp-announces-revised-definition-of-pain/

New Nomenclature of Pain

- ICD-11

- chronic pain coding may lead to improved evaluations and treatment decisions.

Old Nomenclature

- Chronic Pain Syndrome – Not only do patients have chronic pain, they also have a psychological and emotional preoccupation with the pain that limits function.

Florence, David W. "The chronic pain syndrome: a physical and psychologic challenge." *Postgraduate Medicine* 70.5 (1981): 217-228.

Nomenclature of Pain: ICD 11 – Chronic Pain

- MG30.0 Chronic primary pain
- MG30.1 Chronic cancer-related pain
- MG30.2 Chronic postsurgical or posttraumatic pain
- MG30.3 Chronic secondary musculoskeletal pain
- MG30.4 Chronic secondary visceral pain
- MG30.5 Chronic neuropathic pain
- MG30.6 Chronic secondary headache or orofacial pain

Beatrice Korwisi, International Association for the Study of Pain (IASP) in 6/14/23 World Health Organization Unlocking the potential of ICD-11 for chronic pain. (https://www.who.int/news-room/events/detail/2023/06/14/default-calendar/who-webinar-on-unlocking-the-potential-of-icd-11-for-chronic-pain)

Extension for Pain Codes

- Pain Intensity
- Pain Related Distress
- Pain Interference

Chronic Primary Pain

- **emotional distress or functional disability**
- Chronic pain as a health condition

Examples are:

1. **Chronic widespread pain (CWP)**/fibromyalgia
2. **Complex regional pain syndrome**
3. Chronic **headaches and orofacial pain**: migraine, tension-type headache, trigeminal autonomic cephalgias, temporomandibular disorders, burning mouth, orofacial pain
4. **Chronic visceral pain**: chest pain syndrome, epigastric pain syndrome, irritable bowel syndrome, abdominal pain syndrome, bladder pain syndrome, pelvic pain syndrome
5. **Chronic musculoskeletal pain** (other than orofacial): cervical pain, thoracic pain, low back pain, limb pain

Chronic Secondary Pain

- Chronic pain as a symptom of an underlying disease
- **No correlation between pain severity and disease**
- requires **interdisciplinary pain treatment**

Updates in Interventional Pain Treatment

- Interventional pain management options provide effective and long-lasting pain relief to patients not responding to medical management.

Cohen, Steven P., Lene Vase, and William M. Hooten. "Chronic pain: an update on burden, best practices, and new advances." *The Lancet* 397.10289 (2021): 2082-2097.

Updates in Interventional Pain Treatment

Interventions – patient selection

- procedures might be used for diagnostic purposes such as nerve root blocks
- to facilitate other treatments (such as sympathetic blocks to facilitate physical therapy for complex regional pain syndrome.)
- Best procedure candidate would not have much central sensitization (peripheral nerve blocks do not work well for phantom limb pain)
- individuals without secondary gain, and lower degrees of disease burden (eg, those taking opioids, and with high baseline disability scores)
- Patient decompensated neuropathic conditions.

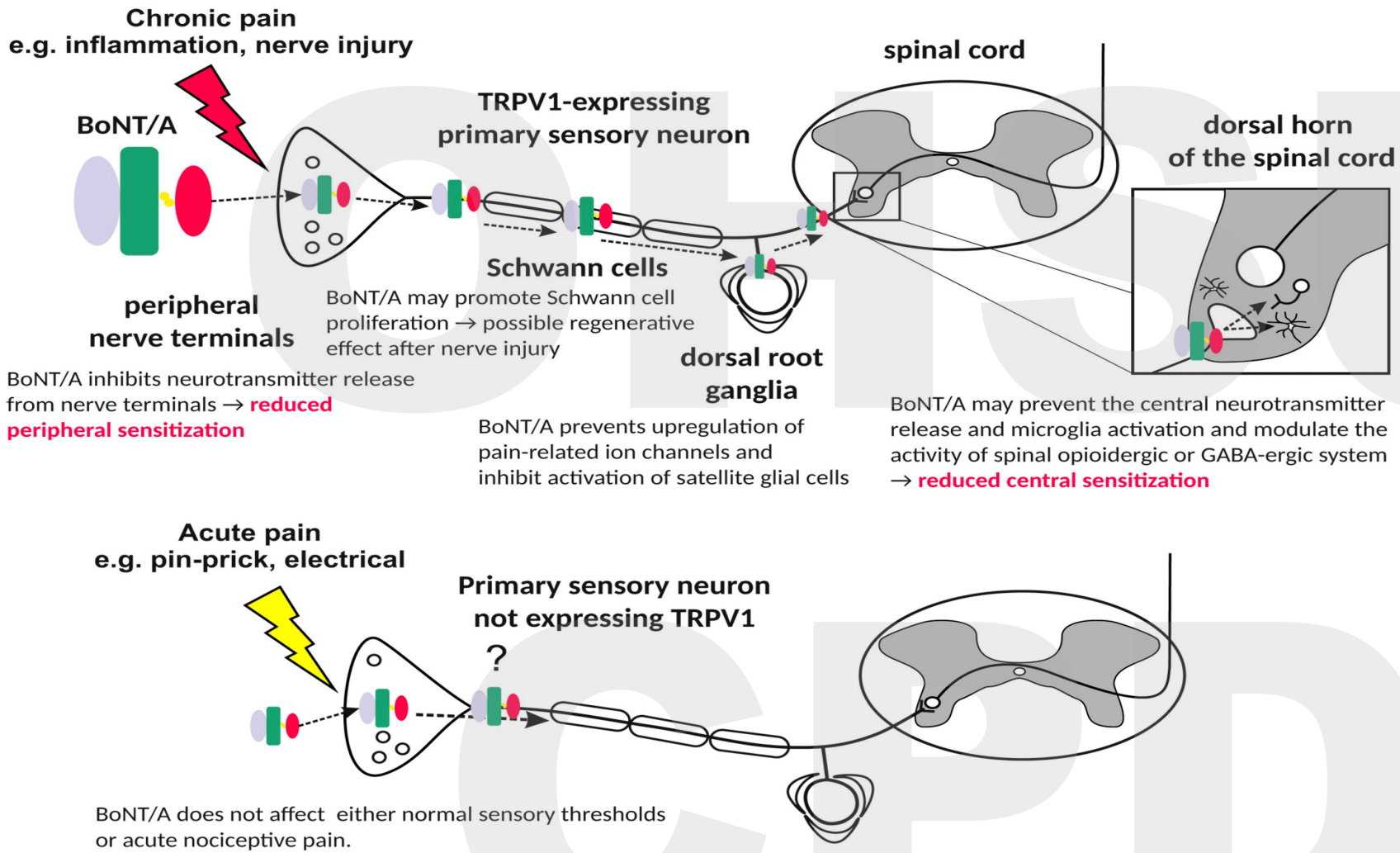
Primary Pain Disorders
Botox for Chronic headaches and orofacial pain

Migraine (reduce frequency, intensity and duration of headaches)

tension-type headache (supported by CMS if some muscle relaxants are tried)

trigeminal autonomic cephalgia (reduces pain intensity and paroxysms)

temporomandibular disorders (mixed study results)



Matak, Ivica, et al. "Mechanisms of botulinum toxin type A action on pain." *Toxins* 11.8 (2019): 459.

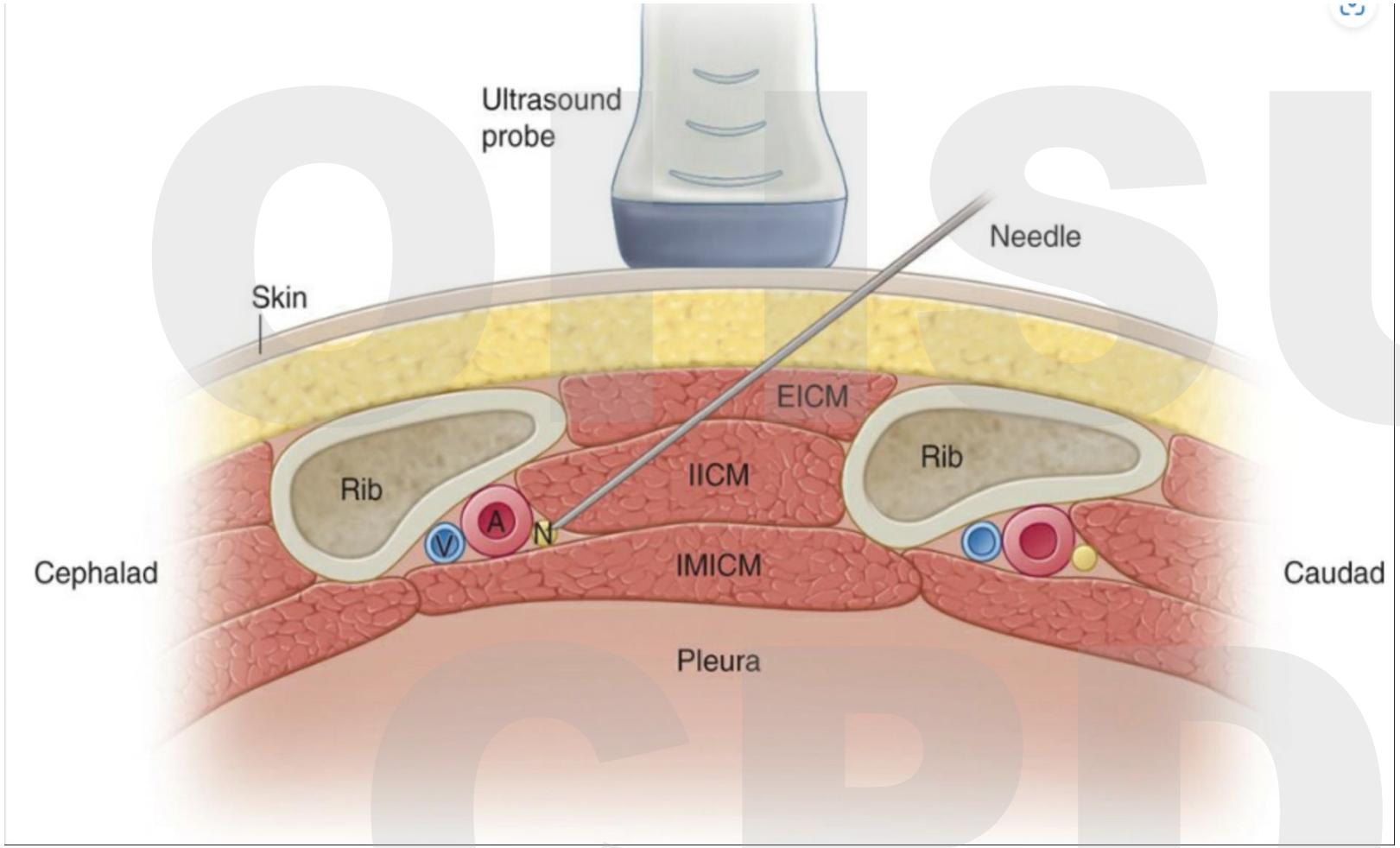
Uses of Botulinium toxin in Pain Medicine

- reducing spasticity, improving passive and active mobility, reducing pain, and improving upper limb comfort care (Hareb, Farid, et al. "Botulinum toxin in children with cerebral palsy: an update." *Neuropediatrics* 51.01 (2020): 001-005.)
- Botulinum toxin (BoNT) is currently considered the treatment of choice for CD and can lead to an improvement in pain and dystonic symptoms in up to 90% of patients (Camargo, Carlos Henrique Ferreira, Lígia Cattai, and Hélio Afonso Ghizoni Teive. "Pain relief in cervical dystonia with botulinum toxin treatment." *Toxins* 7.6 (2015): 2321-2335.)
- Elongation of abdominal wall prior to reconstruction (6cm) (Timmer, Allard S., et al. "A systematic review and meta-analysis of technical aspects and clinical outcomes of botulinum toxin prior to abdominal wall reconstruction." *Hernia* (2021): 1-13.)

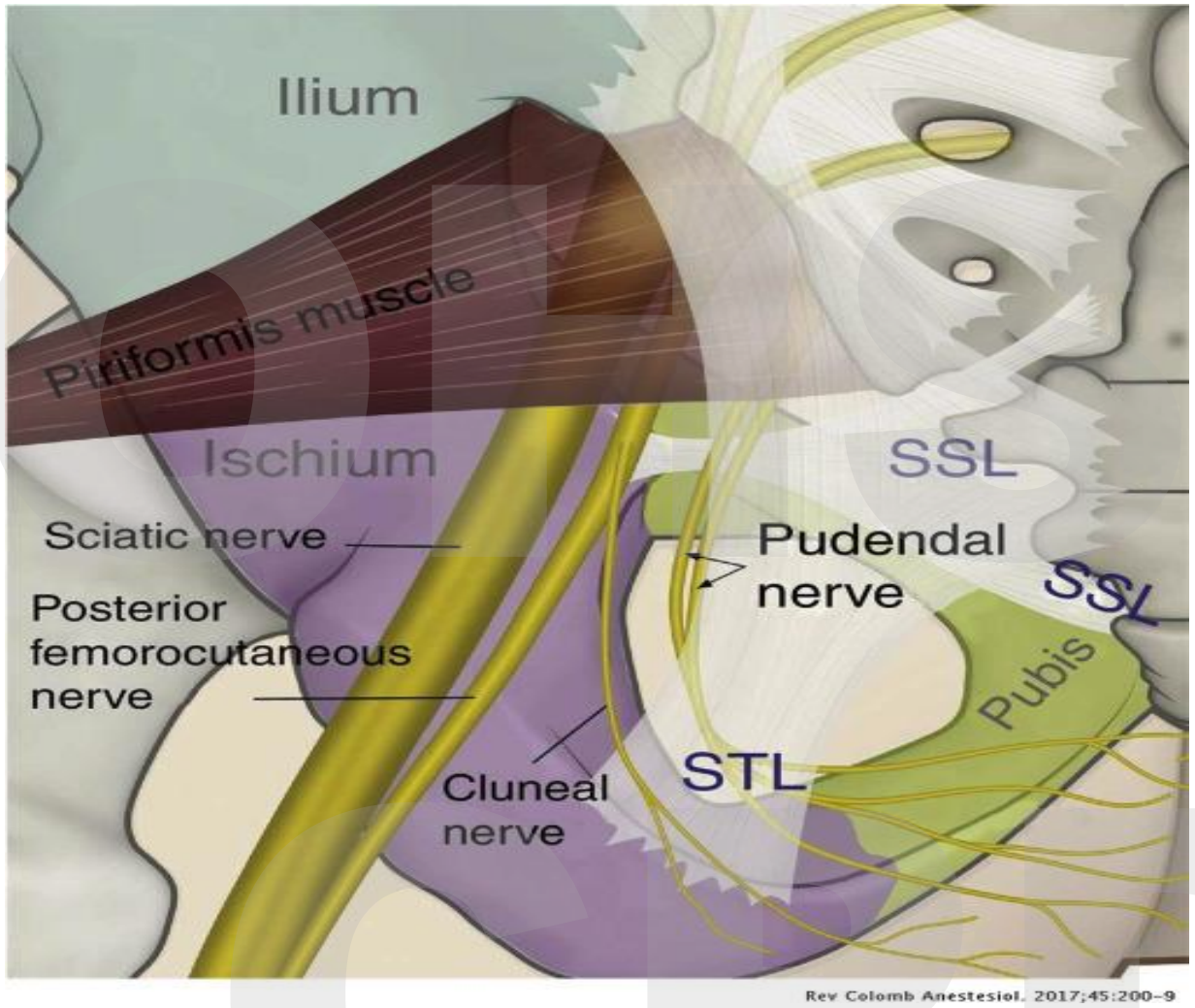
Secondary Disorders – Cryoanalgesia

- Cryoanalgesia causes Wallerian degeneration of nerve, but leaves the myelin sheath and endoneurium intact.
- May be superior to other methods of ablation (like heat or chemical) because it does not cause neuritis or neuralgia
- Indications include:
  - Intercostal neuralgia from rib fractures, post thoracotomy pain or post-herpetic neuralgia
  - Occipital neuralgia and other types of cephalgias
  - Ilioinguinal neuralgia post surgery
  - Genitofemoral neuralgia
  - Pudendal neuralgia

Trescot, Andrea M. "Cryoanalgesia in interventional pain management." *Pain physician* 6.3 (2003): 345.



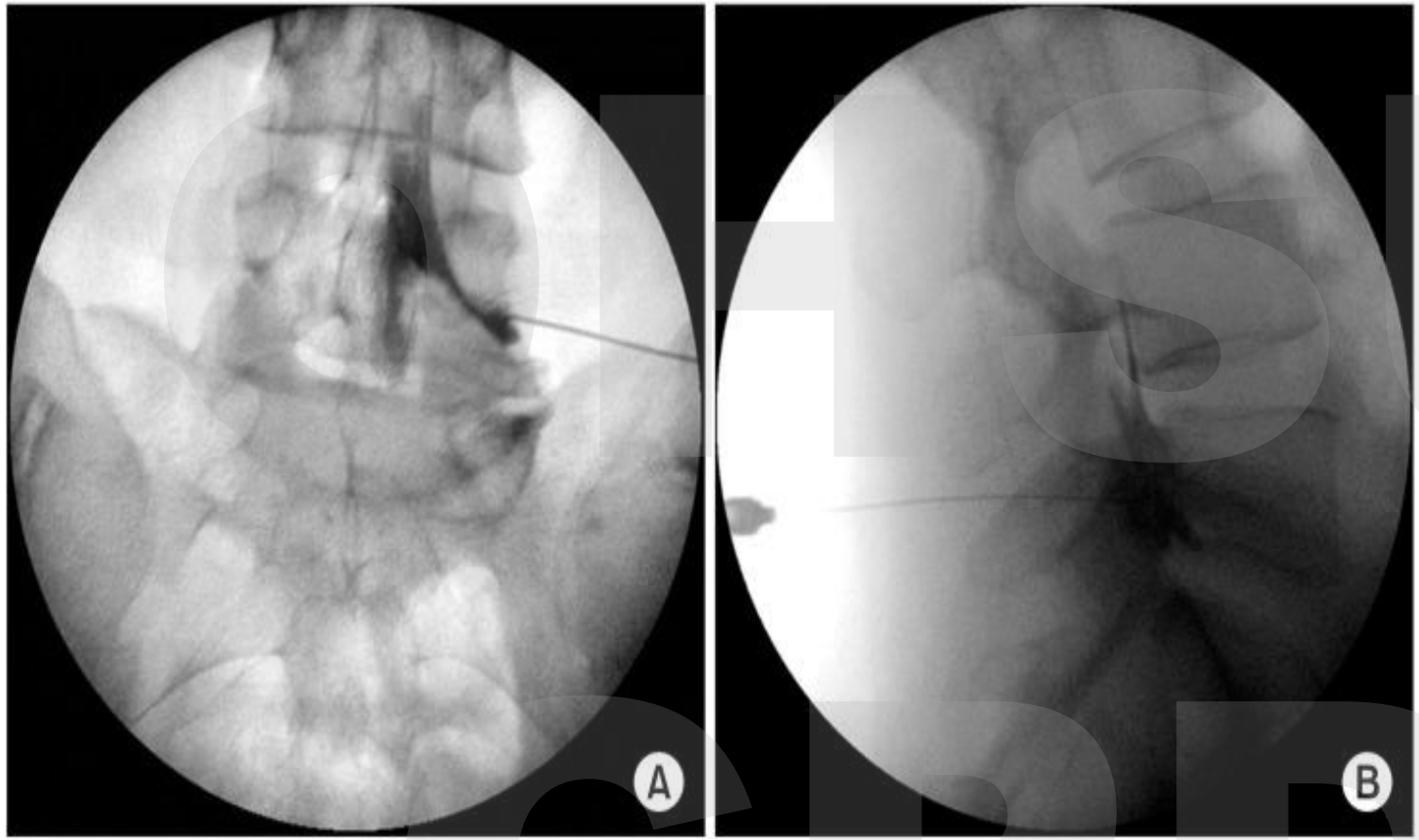
Intercostal Nerve Block | Anesthesia Key (aneskey.com)



Rana, AL-Jumah, and Krishna B. Shah. "Pudendal Neuralgia." *Interventional Management of Chronic Visceral Pain Syndromes*. Elsevier, 2021. 53-61.

Epidural Steroid Injections

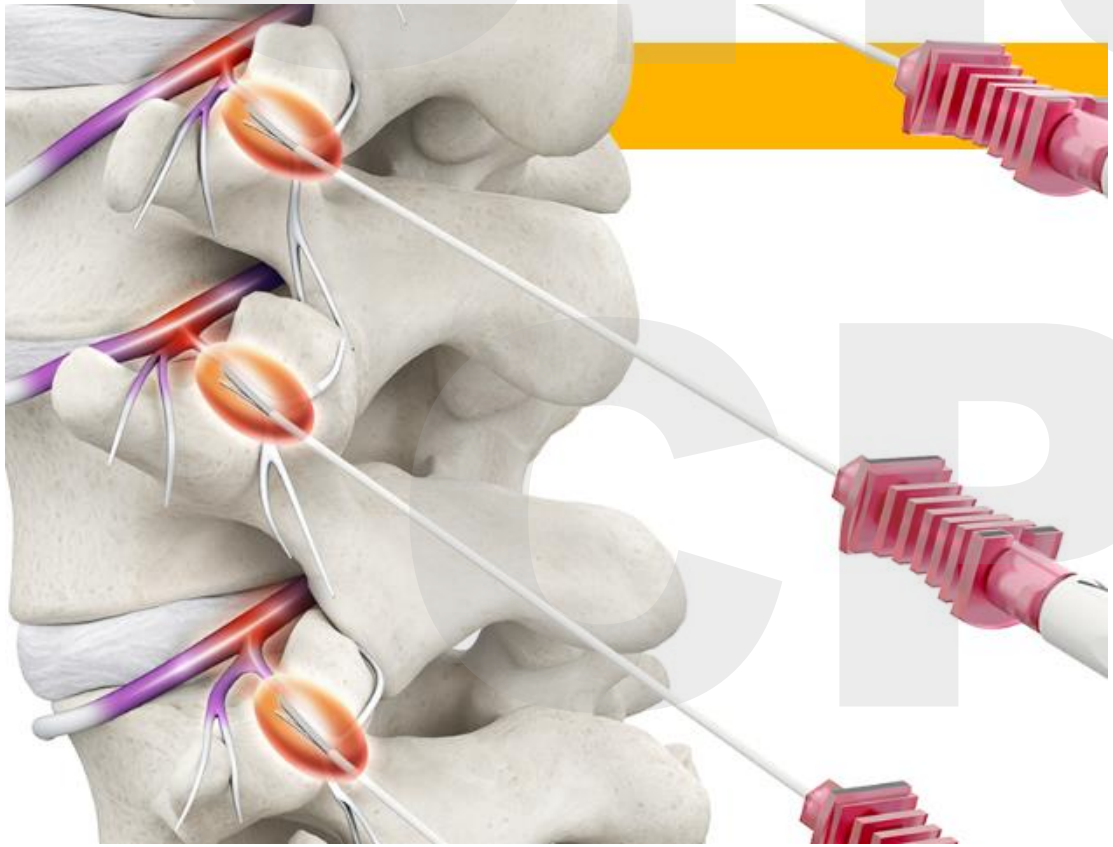
- Multiple injections provides longer term relief (>12 months) (**Manchikanti L et al,** Epidural injections for lumbar radiculopathy and spinal stenosis: a comparative systematic review and meta-analysis. *Pain Physician*. 2016; **19**: E365-E410)



Jeong, Young Cheol, et al. "Contrast spread in the superoposterior approach of transforaminal epidural steroid injections for lumbosacral radiculopathy." *Annals of Rehabilitation Medicine* 41.3 (2017): 413-420.

Ablative Procedures – lumbar facet

- Lumbar facet medial branch ablations tends to work better if there is an inciting event to the pain, pain has shorter duration and patient older. (Odonkor, Charles A., et al. "Inciting events associated with lumbar facet joint pain." *Anesthesia & Analgesia* 126.1 (2018): 280-288.)



Ablative Procedures – Sacral iliac joint

Sacroiliac Joint Injections | Anesthesia Key (aneskey.com)

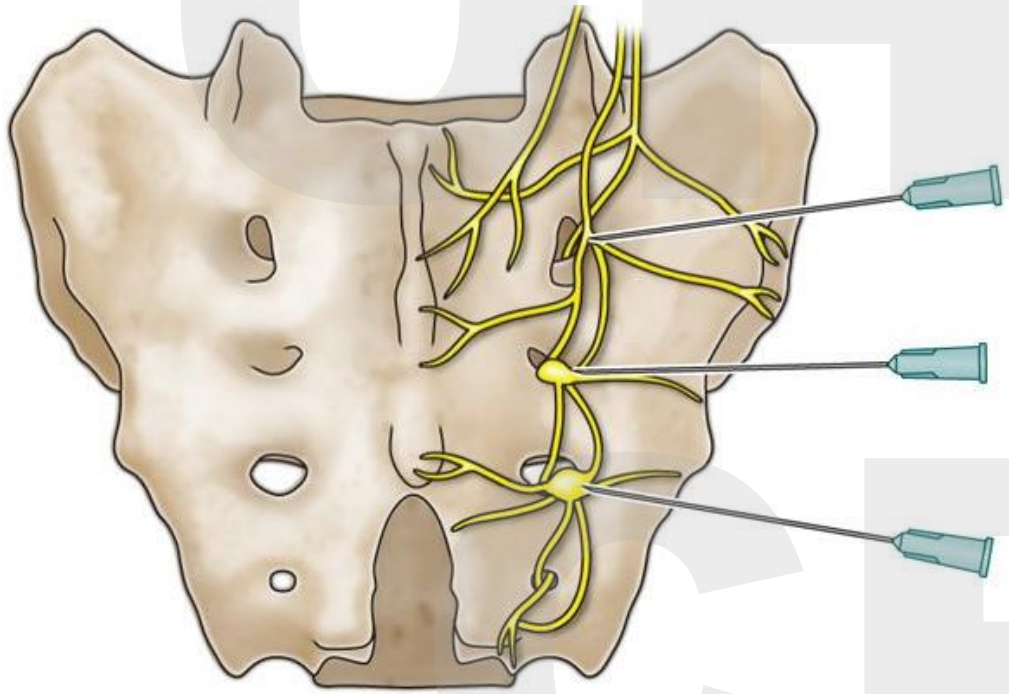
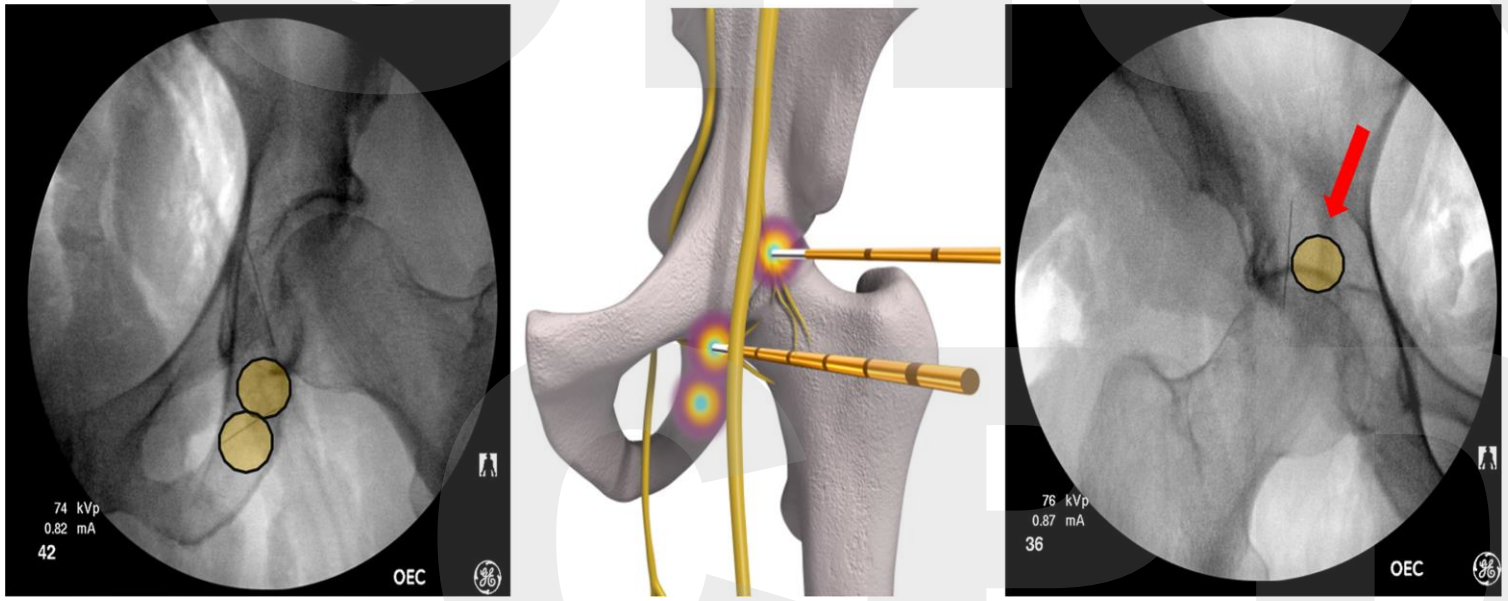


Figure 26-3. Lateral branches from S1 to S4 sacral foramen. Schematic drawing showing the S1-3 lateral branches innervating the SI joint and overlying ligaments. The needles depict the approximate location for the diagnostic LBB.

Hip Joint Ablation

Salmasi, Vafi, et al. "Application of cooled radiofrequency ablation in management of chronic joint pain." *Techniques in Regional Anesthesia and Pain Management* 18.4 (2014): 137-144.



Knee Genicular nerve Ablation

Fogarty, Alexandra E., et al. "The effectiveness of fluoroscopically guided genicular nerve radiofrequency ablation for the treatment of chronic knee pain due to osteoarthritis: a systematic review." American journal of physical medicine & rehabilitation 101.5 (2022): 482-492.

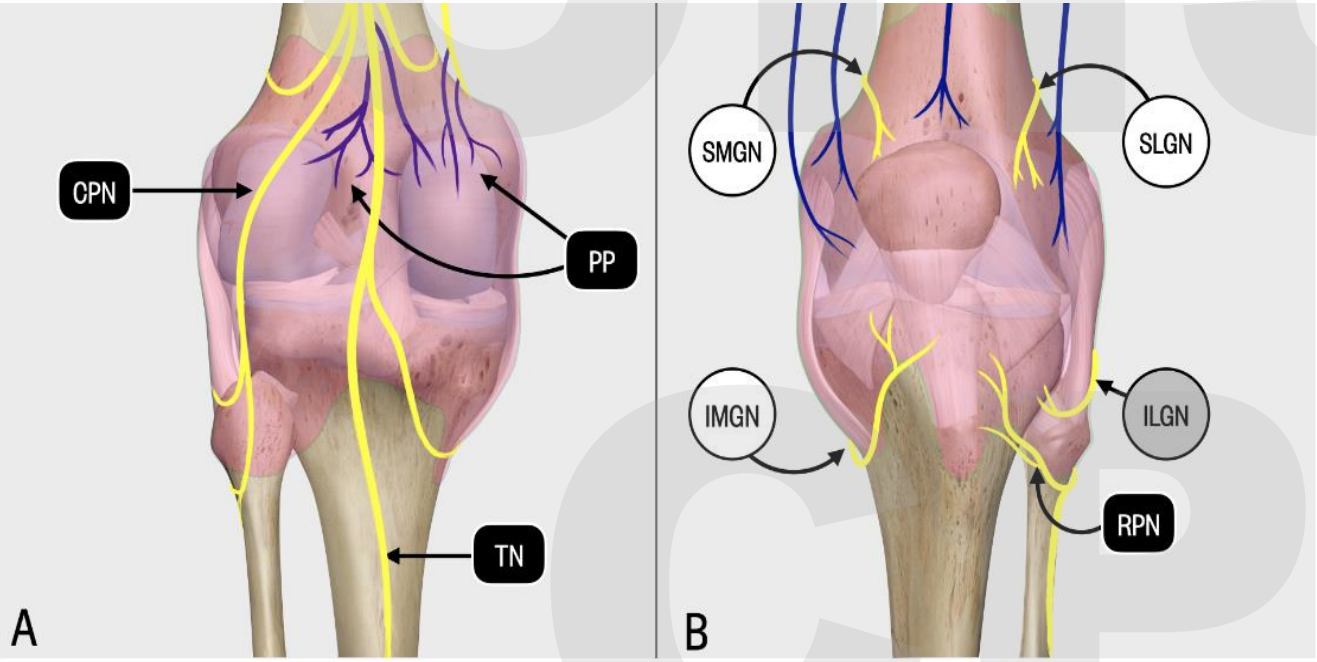
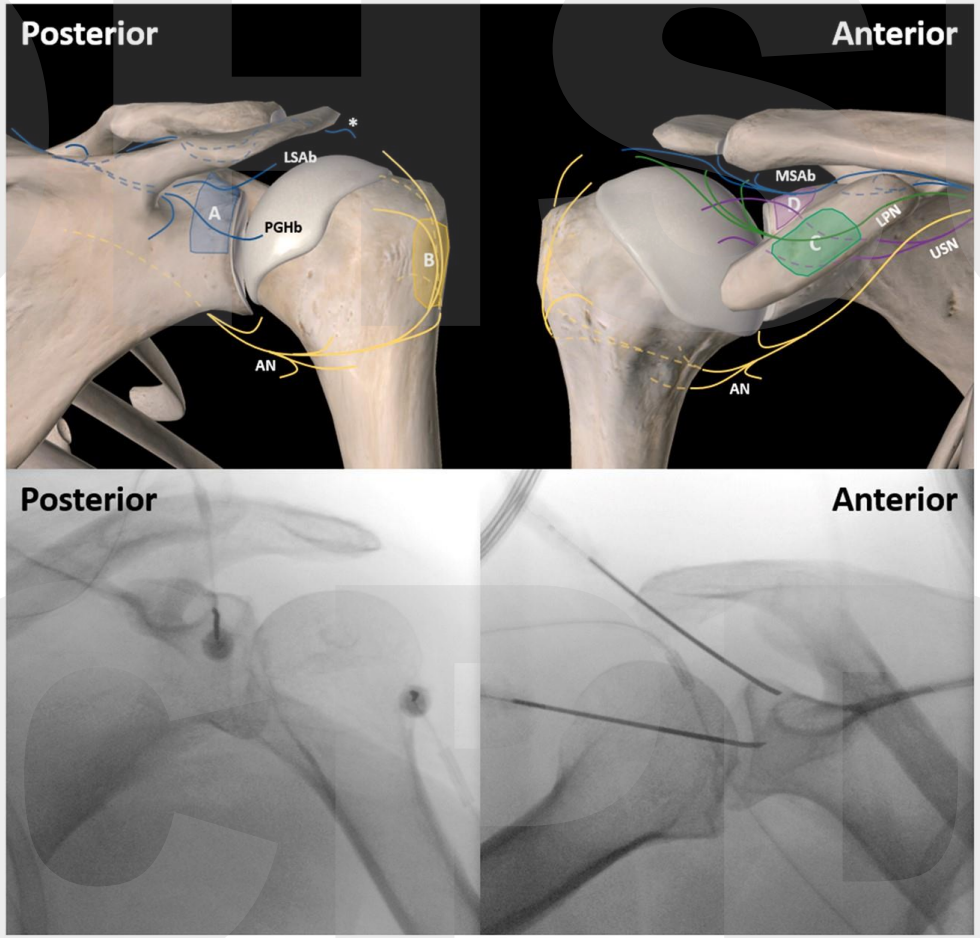


Figure 1. Schematic diagram showing posterior (A) and anterior (B) innervation of the knee capsule and joint. The three genicular targets are the SMGN, SLGN and IMGN. ILGN, inferolateral genicular nerve; IMGN, inferomedial genicular nerve; NVI, nerve to vastus intermedius; NVL, nerve to vastus lateralis; NVM, nerve to vastus medialis; RPN, recurrent peroneal nerve; SaN, saphenous nerve; SLGN, superolateral genicular nerve; SMGN, superomedial genicular nerve.

Image courtesy of ASRA --How I Do It: Genicular Nerve Blocks for Acute Pain (asra.com)

Figure 1. Recommended target zones for articular ablation derived from anatomic studies and clinical reports. Zone A ...



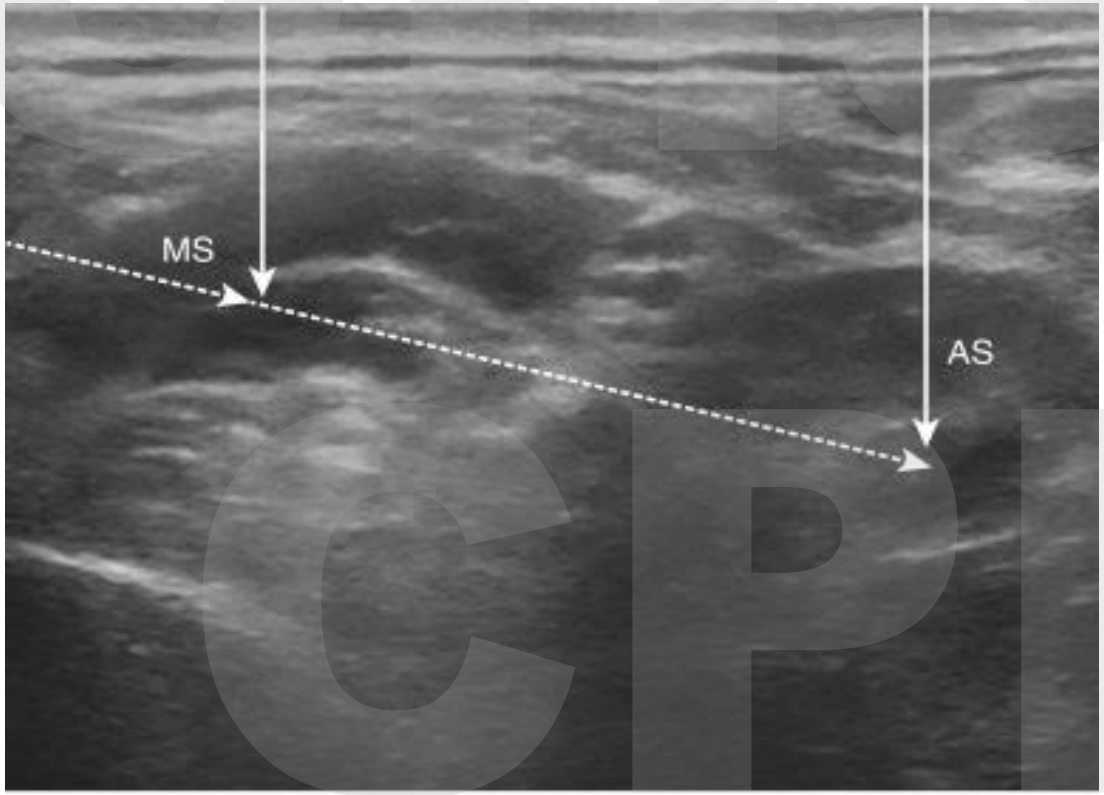
Pain Med, Volume 22, Issue Supplement_1, July 2021, Pages S2–S8, https://doi.org/10.1093/pm/pnab152

Scalenes Block for Thoracic Outlet Syndrome

Fereydooni, Arash, et al. "Impact of Scalene Muscle Botulinum Toxin Injection With and Without Surgery in Neurogenic Thoracic Outlet Syndrome." *Clinical Journal of Sport Medicine* 33.2 (2023): 116-122.

- With Botulinium toxin injection 77.9% reported subjective relief, confirmed by an improved QDASH disability score.
- Thirty-one patients (40.3%) then went on to have further persistent symptoms and proceeded with first rib resection. 96.8% reported symptomatic relief

Nelson, Ariana, Honorio T. Benzon, and Juan Francisco Asenjo. "Deep Muscle Injections: Piriformis, Scalene Muscle, Iliopsoas Injections." *Essentials of Pain Medicine*. Elsevier, 2018. 737-748.



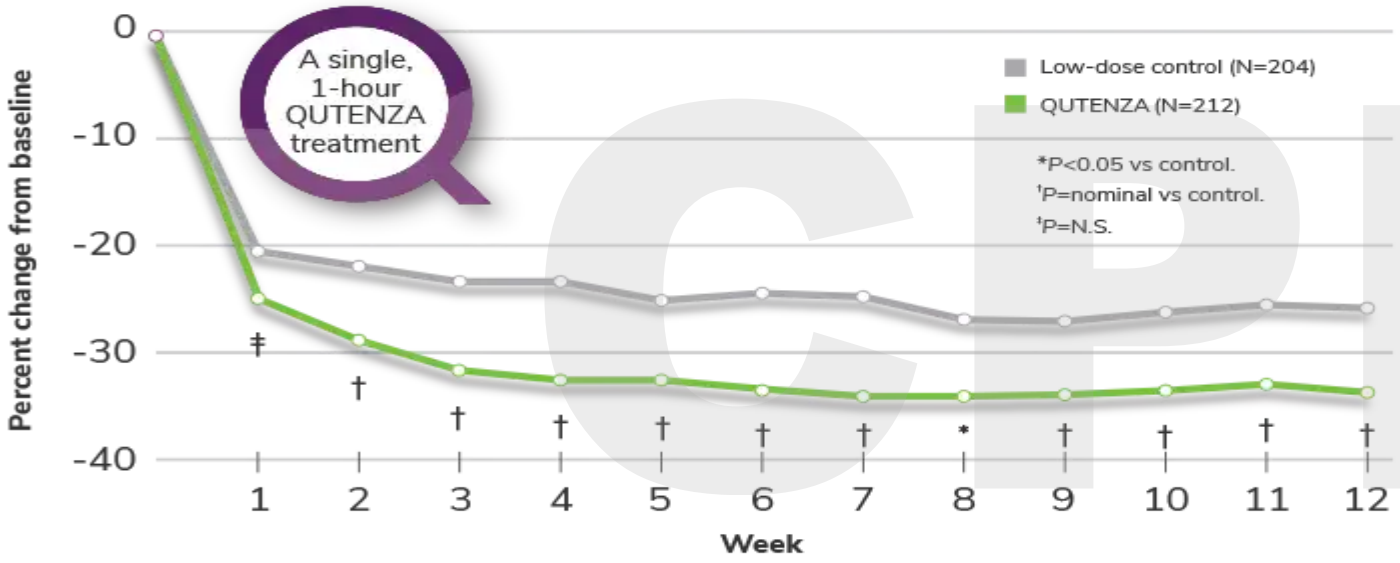
MS = Middle scalene muscle, AS = Anterior scalene muscle
Arrows display location of injection: Solid line = Out-of-plane technique
Dashed line = In-plane technique

Capsaisin 8% system

- For diabetic neuropathy
- Post-herpetic neuralgia
- Peripheral neuropathy

Pain scores decreased about 30% and sustained through Week 12[1]

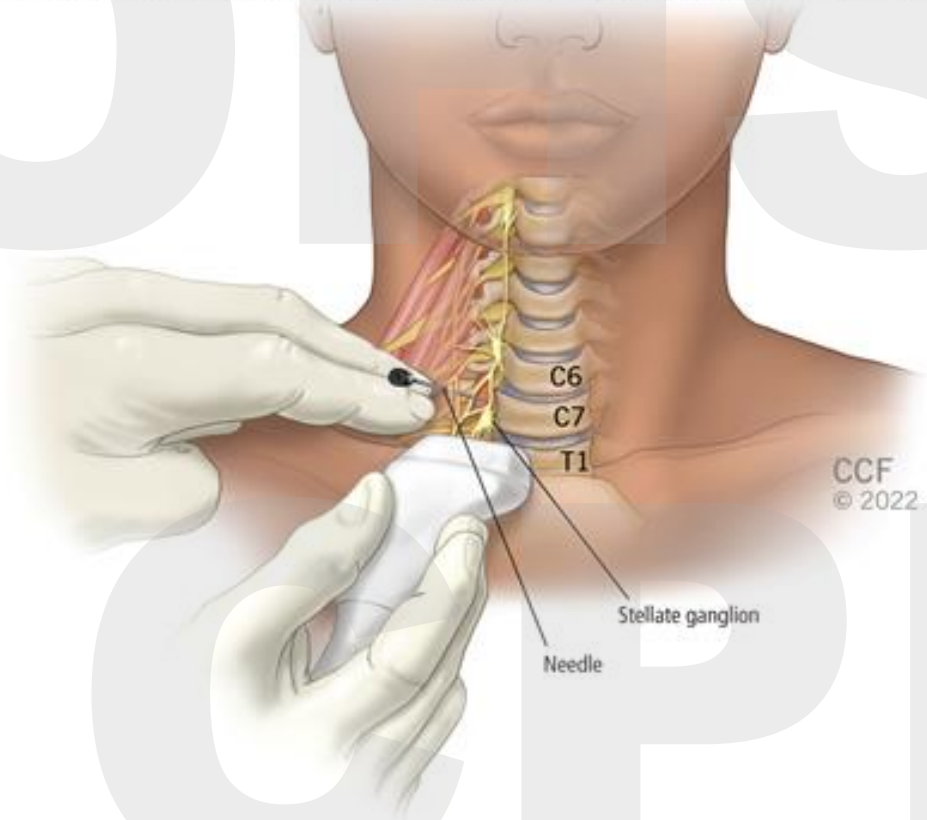
PHN Study 2[3]: Percent change in average pain for the past 24 hours NPRS scores by week



Mean percent changes in NPRS scores from baseline to Week 8 were -33% for QUTENZA vs -26% for control (*P*=0.011).

Stellate Ganglion Block

In stellate ganglion block, anesthetic is injected under ultrasonographic or fluoroscopic guidance into the stellate ganglion at the C6 or C7 vertebral level, targeting the sympathetic nerve chain that runs anterior to the transverse processes of the seventh cervical vertebra and



Yeomsoo Sara Lee et al. CCJM 2022;89:147-153

CLEVELAND CLINIC JOURNAL OF MEDICINE

Indications for Stellate Ganglion Block

- PTSD (Olmsted, Kristine L. Rae, et al. "Effect of stellate ganglion block treatment on posttraumatic stress disorder symptoms: a randomized clinical trial." *JAMA psychiatry* 77.2 (2020): 130-138.)
- Refractory Ventricular Tachycardia (Sanghai, Saket, et al. "Stellate ganglion blockade with continuous infusion versus single injection for treatment of ventricular arrhythmia storm." *Clinical Electrophysiology* 7.4 (2021): 452-460.)
- Refractory Cerebral Vasospasm (Wendel, Christopher, et al. "Stellate Ganglion Block and Intraarterial Spasmolysis in Patients with Cerebral Vasospasm: A Retrospective Cohort Study." *Neurocritical Care* (2023): 1-9.)

Side Effects for Chronic Opioid Use

DSM V Opioid Use Disorder

Diagnostic Criteria*

These criteria not considered to be met for those individuals taking opioids solely under appropriate medical supervision.

Check all that apply

	Opioids are often taken in larger amounts or over a longer period of time than intended.
	There is a persistent desire or unsuccessful efforts to cut down or control opioid use.
	A great deal of time is spent in activities necessary to obtain the opioid, use the opioid, or recover from its effects.
	Craving, or a strong desire to use opioids.
	Recurrent opioid use resulting in failure to fulfill major role obligations at work, school or home.
	Continued opioid use despite having persistent or recurrent social or interpersonal problems caused or exacerbated by the effects of opioids.
	Important social, occupational or recreational activities are given up or reduced because of opioid use.
	Recurrent opioid use in situations in which it is physically hazardous
	Continued use despite knowledge of having a persistent or recurrent physical or psychological problem that is likely to have been caused or exacerbated by opioids.
	*Tolerance, as defined by either of the following: (a) a need for markedly increased amounts of opioids to achieve intoxication or desired effect (b) markedly diminished effect with continued use of the same amount of an opioid
	*Withdrawal, as manifested by either of the following: (a) the characteristic opioid withdrawal syndrome (b) the same (or a closely related) substance are taken to relieve or avoid withdrawal symptoms

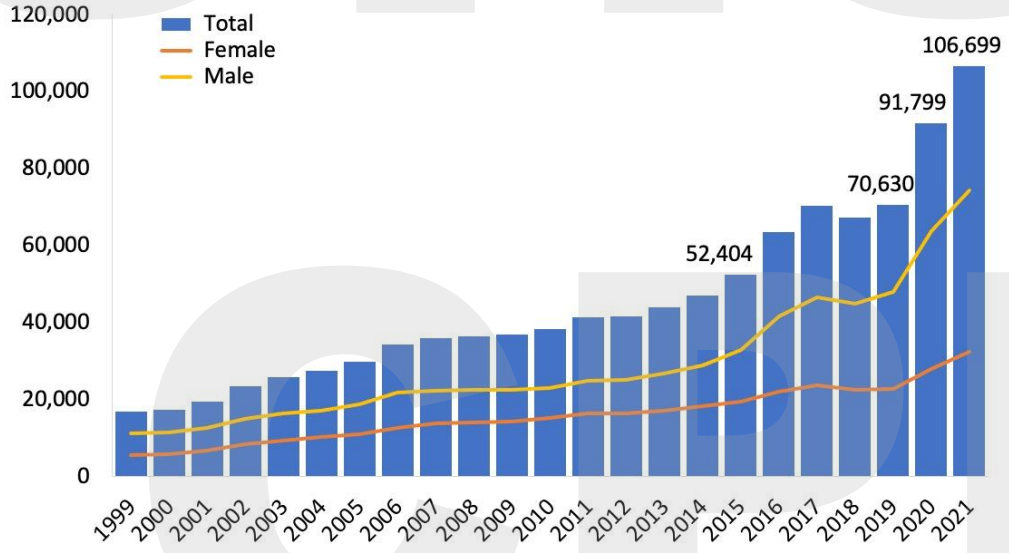
Total Number Boxes Checked: _____

Severity: **Mild**: 2-3 symptoms. **Moderate**: 4-5 symptoms. **Severe**: 6 or more symptoms

*Criteria from American Psychiatric Association (2013). Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition,. Washington, DC, American Psychiatric Association page 541. For use outside of IT MATTTRs Colorado, please contact ITMATTTRsColorado@ucdenver.edu

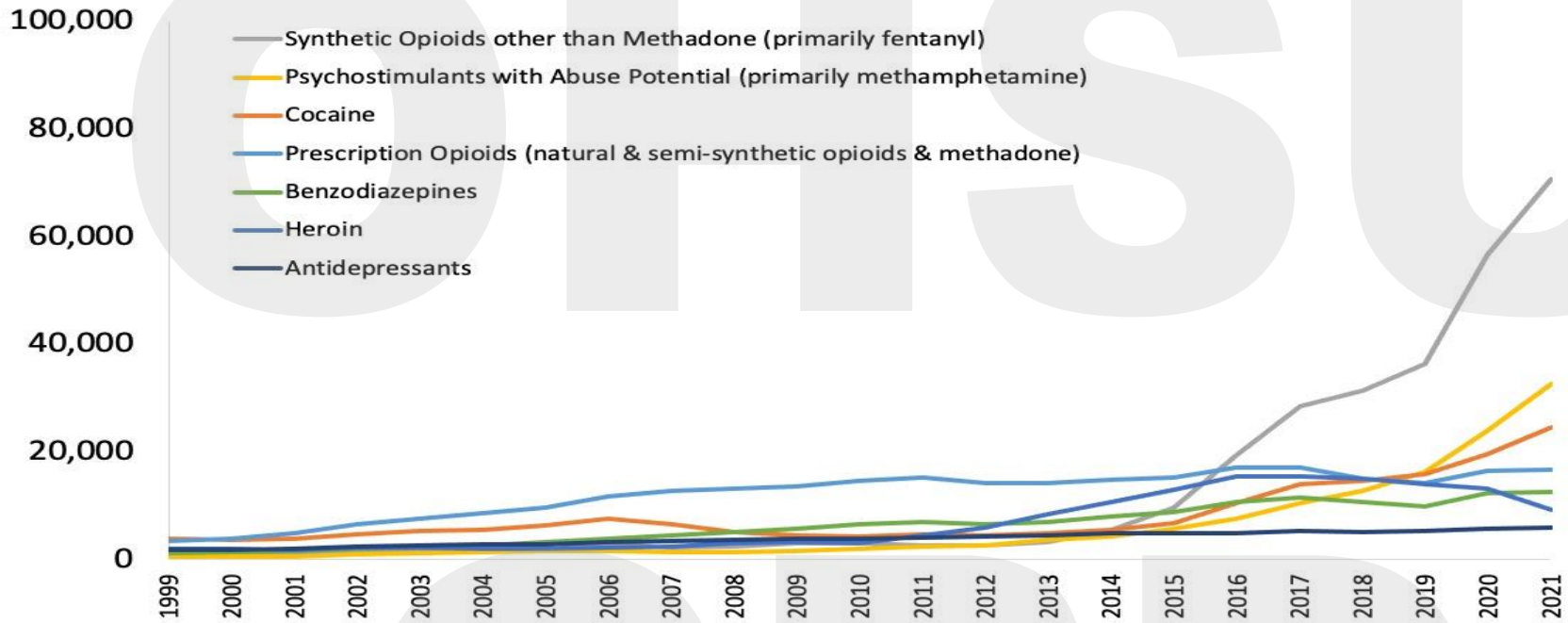
Opioid Treatment of Pain Contributed to the Opioid Crisis – CDC – June, 2023

Figure 1. National Drug-Involved Overdose Deaths*, Number Among All Ages, by Gender, 1999-2021



*Includes deaths with underlying causes of unintentional drug poisoning (X40–X44), suicide drug poisoning (X60–X64), homicide drug poisoning (X85), or drug poisoning of undetermined intent (Y10–Y14), as coded in the International Classification of Diseases, 10th Revision.
Source: Centers for Disease Control and Prevention, National Center for Health Statistics. Multiple Cause of Death 1999-2021 on CDC WONDER Online Database, released 1/2023.

Figure 2. National Drug-Involved Overdose Deaths*, Number Among All Ages, 1999-2021



*Includes deaths with underlying causes of unintentional drug poisoning (X40–X44), suicide drug poisoning (X60–X64), homicide drug poisoning (X85), or drug poisoning of undetermined intent (Y10–Y14), as coded in the International Classification of Diseases, 10th Revision. Source: Centers for Disease Control and Prevention, National Center for Health Statistics. Multiple Cause of Death 1999-2021 on CDC WONDER Online Database, released 1/2023.

https://nida.nih.gov/research-topics/trends-statistics/overdose-death-rates

Consolidated Appropriations Act of 2023 (CAA 2023)

- December 29, 2022, all DEA-registered practitioners to complete **8 hours of training on the treatment and management of patients with opioid or other substance use disorders**
- Section 1262 of the Consolidated Appropriations Act, 2023 (also known as Omnibus bill), **removes the federal requirement for practitioners to submit a Notice of Intent (have a waiver) to prescribe medications, like buprenorphine**, for the treatment of opioid use disorder (OUD)

Conclusion

- Conversation about pain shifts from nociceptive model to a biopsychosocial model
- Conversation about pain treatment shifts away from opioids to lifestyle medicine, minimally invasive and invasive treatments.
- Treatment of pain is aimed at the underlying disease and aims to improve quality of life