What's New In Pain Management?

EXPLORING PAIN MANAGEMENT IN CONTEMPORARY HEALTHCARE, EMBRACING ALTERNATIVE THERAPIES, AND INTEGRATING INTERDISCIPLINARY APPROACHES

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COURSE OBJECTIVES

- The attendee will identify the components of the biopsychosocial model of pain.
- The attendee will understand the framework of the classification of pain and how it can assist with providing appropriate referrals for treatment.
- The attendee will examine the structure of an interdisciplinary care model and the components of best practices for patient care.

Prevalence and Costs

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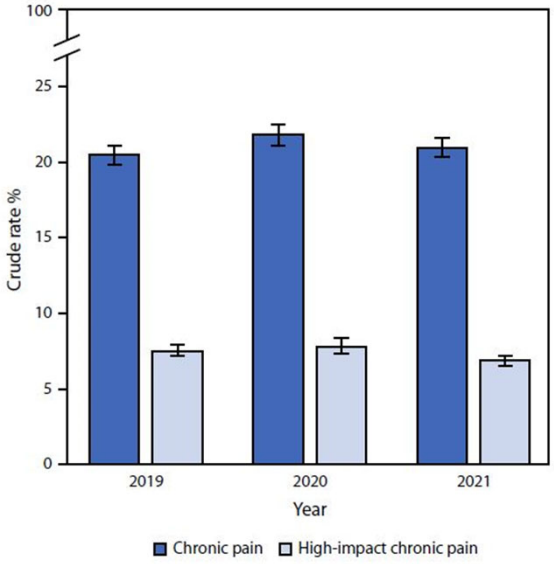
Prevalence

- During 2021, an estimated 51.6 million U.S. adults (20.9%) experienced chronic pain, and 17.1 million (6.9%) experienced high-impact chronic pain.[1]
- **Chronic Pain**: pain on most days > 3 months
- **High Impact Chronic Pain:** limits ADLs/work on most days > 3 months

FIGURE. Prevalence of chronic pain* and high-impact chronic pain† among adults — United States, 2019-2021§,¶



1. Rikard, S. M., Strahan, A. E., Schmit, K. M., & Guy, G. P. (2023). Chronic pain among adults — United States, 2019–2021. *MMWR. Morbidity and Mortality Weekly Report*, *72*(15), 379–385. https://doi.org/10.15585/mmwr.mm7215a1

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How do we address this?

- "Center for Disease Control's 2022 *Clinical Practice Guidelines for Prescribing Opioids for Pain* provides recommendations to promote a **multimodal** and **multidisciplinary approach** to pain management and implementation strategies to reduce disparities in pain management care."

1. Rikard, S. M., Strahan, A. E., Schmit, K. M., & Guy, G. P. (2023). Chronic pain among adults — United States, 2019–2021. *MMWR. Morbidity and Mortality Weekly Report*, *72*(15), 379–385. https://doi.org/10.15585/mmwr.mm7215a1

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What are the costs?

FINANCIAL

- "In 2011, the economic costs of chronic pain were estimated to range from **$560 to $635 billion** in annual direct medical costs, lost productivity, and disability."[2]

NON FINANCIAL

- Opioid Use Disorder (OUD)
- 3 million people in the United States meet this criterion and results in **47,000 deaths per year.**[3]
- In the United States, opioids have killed more people than any other drug in history.[3]

2. Dowell, D., Ragan, K. R., Jones, C. M., Baldwin, G. T., & Chou, R. (2022). CDC Clinical Practice Guideline for prescribing opioids for pain—United States, 2022. *MMWR. Recommendations and Reports*, *71*(3), 1–95. https://doi.org/10.15585/mmwr.rr7103a1
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Biopsychosocial vs Biomedical Model

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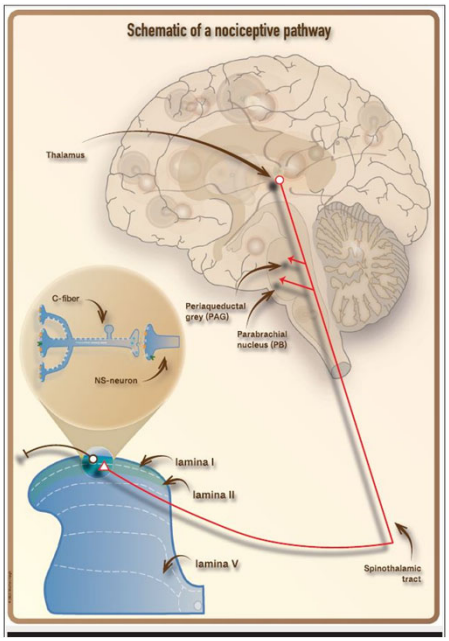
Biomedical Model

- Most applicable in instances of acute injury
- Functions on the premise that all pain has a dominant anatomical or pathological source
- Find dysfunction + correct it = remove the pain



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What about….?

- **Pain that is reported in the absence of any clearly identifiable pathology?**
- **Pain that is persisting after healing?**
- **Pain that is absent despite evidence of injury or pathology?**
- **Severity of pain that is at odds with the severity of injury?**
- **The relationship between pain, impairment, and disability are unpredictable and incongruous?**

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Biopsychosocial Model

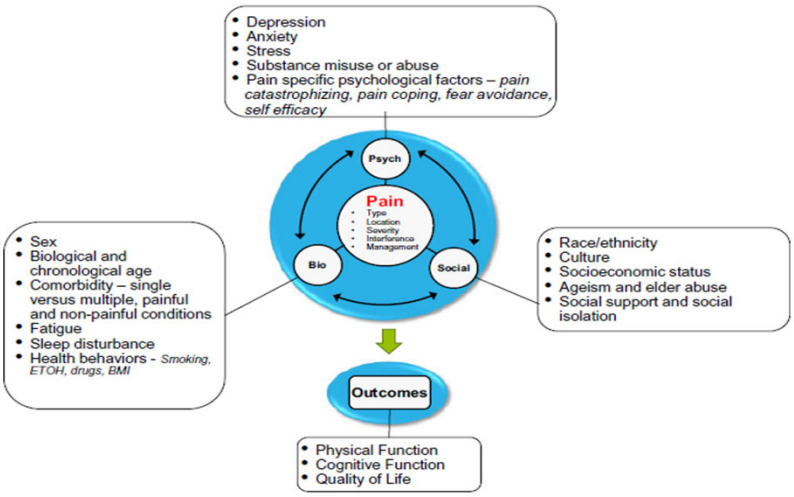

Figure 1. A conceptual framework for understanding chronic pain in older persons.

6. Miaskowski, C., Blyth, F., Nicosia, F., Haan, M., Keefe, F., Smith, A., & Ritchie, C. (2019). A biopsychosocial model of chronic pain for older adults. *Pain Medicine*, *21*(9), 1793–1805. https://doi.org/10.1093/pm/pnz329

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In clinical practice..

- Yellow Flag screening tools[4] and questionnaires that identify cognitive and affective attributes such as:
  - Pain catastrophization
  - Kinesiophobia (fear of movement)
  - Self-efficacy
  - Depression
  - Anxiety
- Can help guide psychologically informed care[4]

Examples:

- Keele Subgroups for Targeted Treatment (STarT) Back Screening Tool
- Optimal Screening for Prediction of Referral and Outcome Yellow Flag (OSPRO-YF)
- Tampa Scale of Kinesiophobia

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Mechanism Based Classification

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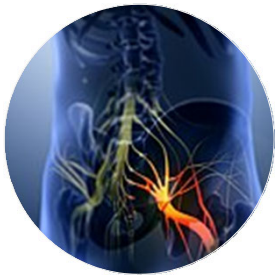
IASP's Classification of Pain

Nociceptive



Neuropathic

Nociplastic

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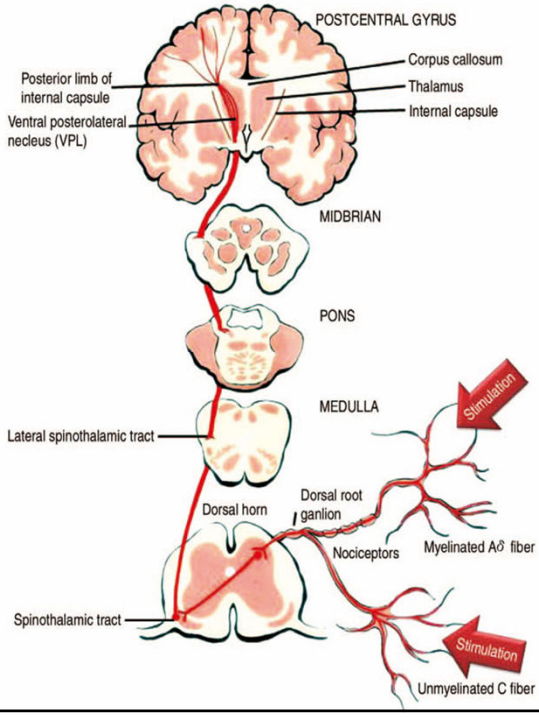

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Nociceptive Pain

Location	Characteristics	Examination Findings	Diagnostic Imaging
• Pain clearly localized to area of injury	• Proportional • Evidence of inflammation including swelling, redness, warmth • Absence of neurological symptoms	• Normal neurological function and neural provocation testing • Pain provocation with specific movement/mechanical testing • Normal quantitative sensory testing	• Evidence of localized tissue injury/pathology for generating nociceptive input that is proportional and related to the pain experience.

7. Shraim, M. A., Massé-Alarie, H., & Hodges, P. W. (2020). Methods to discriminate between mechanism-based categories of pain experienced in the musculoskeletal system: A systematic review. *Pain*, *162*(4), 1007–1037. https://doi.org/10.1097/j.pain.0000000000002113

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Neuropathic Pain

Location	Characteristics	Examination Findings	Diagnostic Imaging
• Pain with a distinct dermatomal/peripheral nerve distribution • History of nerve injury, pathology, or mechanical compromise	• Burning, tingling, electric shock—like, shooting, sharp, numbness	• Impaired sensory testing • Positive neurodynamic testing • Muscle weakness • Altered deep tendon reflexes	• Demonstration of the relevant lesion on CT, MRI, electro-diagnostic techniques

7. Shraim, M. A., Massé-Alarie, H., & Hodges, P. W. (2020). Methods to discriminate between mechanism-based categories of pain experienced in the musculoskeletal system: A systematic review. *Pain*, *162*(4), 1007–1037. https://doi.org/10.1097/j.pain.0000000000002113

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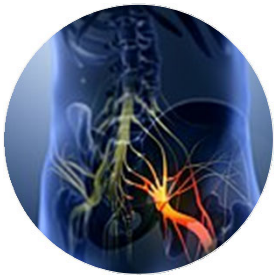
Is the nerve…



Trapped?

Tight?

Sensitive?

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Nociplastic Pain

Location	Characteristics	Examination Findings	Diagnostic Imaging
• Neuroanatomical illogical pattern of pain and/or sensory distribution	• Vague and dull • Allodynia • Hyperaglesia • Pain disproportionate to the nature or extent of injury • Strong maladaptive psychosocial factors	• Impaired quantitative sensory testing • Inconsistent response to special tests • Absence of clear neurological findings • Active movement testing reveals no clear restrictions	• No evidence of damage to the nervous system or insufficient evidence of injury/pathology

7. Shraim, M. A., Massé-Alarie, H., & Hodges, P. W. (2020). Methods to discriminate between mechanism-based categories of pain experienced in the musculoskeletal system: A systematic review. *Pain*, *162*(4), 1007–1037. https://doi.org/10.1097/j.pain.0000000000002113

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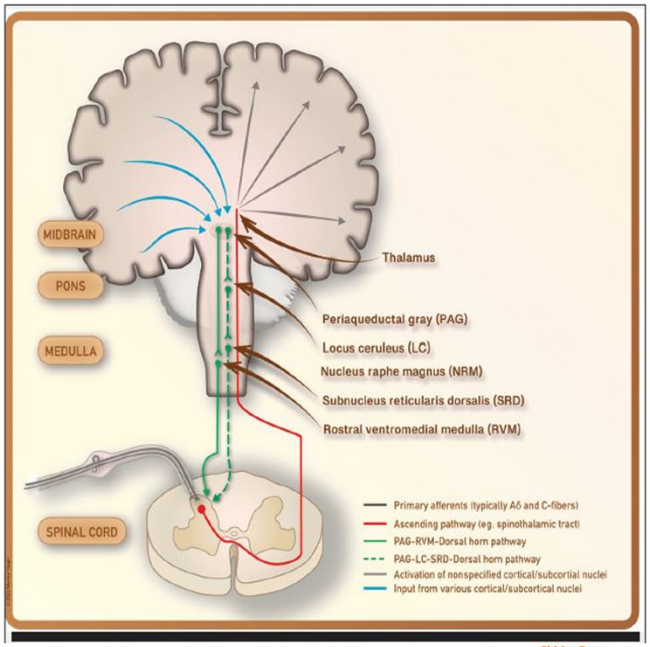
Nociplastic Pain

- Central sensitization
  - "Facilitated synaptic plasticity"
- Increased responsiveness of neurons and changes in synaptic efficiency in the spinal cord
- Nerves that fire together wire together



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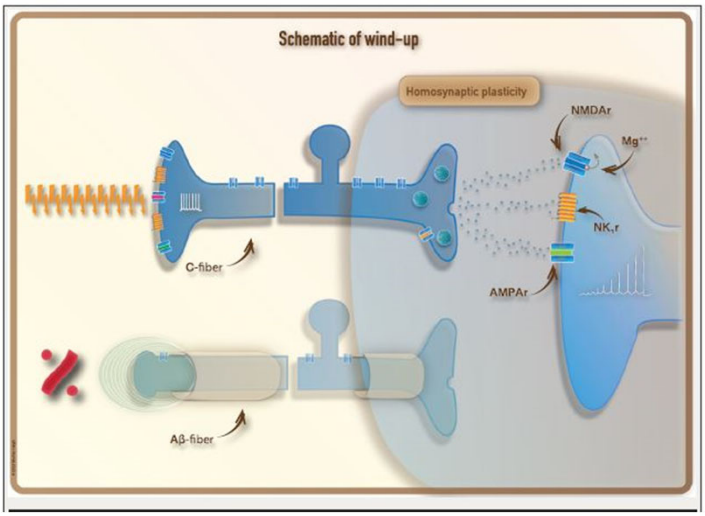
Characteristics of Central Sensitization

Temporal Summation

- Repeating a fixed-intensity stimulus on a C-fiber increases the number of action potentials in dorsal horn neurons
- "wind up"



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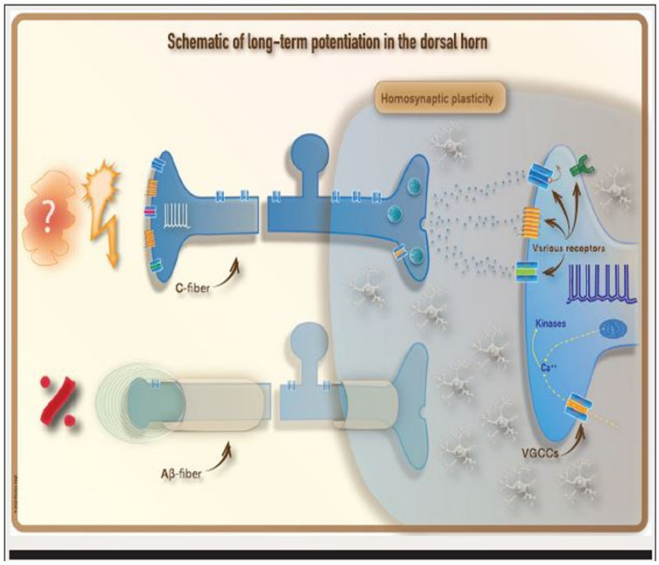
Characteristics of Central Sensitization



Long Term Potentiation

- Synaptic efficiency
- Neuroplastic changes of the nociceptive pathways lasting for 30minutes up to 3 hours that remain despite removal of the painful stimulus.

9. Hoegh, M. (2023b). Pain science in practice (part 5): *central sensitization ii*. *Journal of Orthopaedic & Sports Physical Therapy*, *53*(2), 55–58. https://doi.org/10.2519/jospt.2023.11571

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Interdisciplinary Functional Restoration Program

Medical

Psychology

Physical Therapy

Occupational Therapy

Vocational Rehab

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Medical Management

- Medication management
- Procedural interventions
- Referral to specialties or other rehab services
- Diagnostics and imaging
- Establish pain MMI
- Collaborate with therapies for recs for work hardening, work conditioning, and FCEs.

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Pain Psychology

- Relaxation Therapy
- Mindfulness Training
- Biofeedback Training
- Meditation Practice
- Sleep
- PTSD and Pain (i.e Worker's Compensation)
- Cognitive Behavioral Therapy and coping strategies

Occupational Therapy

- Functional training in activities of daily living
- Body mechanics
- Ergonomics
- Activity tolerance
- Pacing
- Leisure
- Routine Development
- Return to work accommodation recommendations
- Graded Motor Imagery
- Sensory retraining and desensitization

Vocational Rehabilitation

- Evaluation: assists medical evaluation assessing potential for vocational rehab
  - Motivation, addressing emotions (ie anger), litigation/WC issues, obstacles to RTW
- Program Curriculum/interventions
  - RTW status, WC process
  - Address issues such as MMI (max medical improvement)
  - Return to Work Assessment letter at DC
- Group Discussions
  - Benefits of work, defining disability (SSDI, LTD, ADA, and WC)
  - Understanding ADA and work accommodations/modifications

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Physical Therapy

Emphasis on:

- Establish home exercise program
- Identify nocicieptive, neuropathic, and/or nociplastic drivers to pain
- Incorporate principles of Graded Exposure
- Enhance Descending Pain Inhibition
- Promote Exercise Induced Hypoalgesia (EIH)

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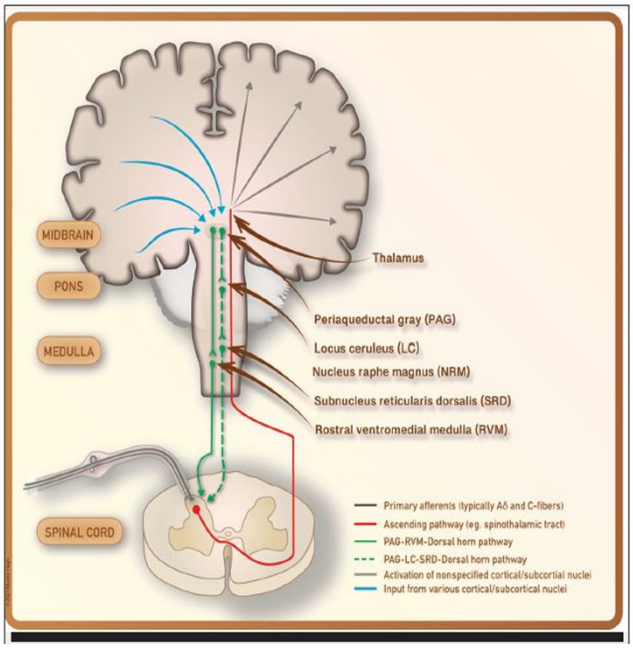
Descending Pain Inhibition

- Exercise Induced Hypoalgesia:
  - — moderate intensity aerobic exercise
  - — Manual therapy and active exercise
  - — TENS and active movement
- Activation of endogenous opioids and neuromodulators



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The Future?
Teaming with Case Management

- Promising role that supporting interdisciplinary teamwork can play in improving chronic pain outcomes.[9]
  - — Care manager emerged as a common structural feature of the interventions with some clinical effect on pain outcomes
  - — The role of a dedicated manager to direct and coordinate patient care is associated with improved outcomes.
  - — Patient follow up as an important facilitator of improved patient pain outcomes.

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Thank You

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