



SCOREBUILDERS



SPOTLIGHT *Series*

Pain in the Neck

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Objectives

1. Compare and contrast types of pain
2. Describe the basic mechanisms of pain
3. Explain the appropriate use of various pain assessments
4. Compare and contrast various interventions for pain (meds, PT, others)



A Pain in the

Pain is a major health issue

Pain is a major economic issue

Pain is a major social issue

Pain





Pain- What is it?

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

The currently accepted definition of pain was originally adopted in 1979 by the International Association for the Study of Pain (IASP)

1979 Definition of Pain

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

2020 Revised Definition of Pain

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

2020 Revised Definition of Pain Notes



Pain is always a personal experience that is influenced to varying degrees by biological, psychological, and social factors



A person's report of an experience as pain should be respected



Pain and nociception are different phenomena. Pain cannot be inferred solely from activity in sensory neurons



Although pain usually serves an adaptive role, it may have adverse effects on function and social and psychological well-being



Through their life experiences, individuals learn the concept of pain



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



In 2018, IASP constituted a 14-member multi-national task force with expertise in clinical and basic science related to pain, which sought input from multiple stakeholders to determine:

“Does the progress in our knowledge of pain over the years warrant a re-evaluation of the definition?”



Expert consultants



IASP council



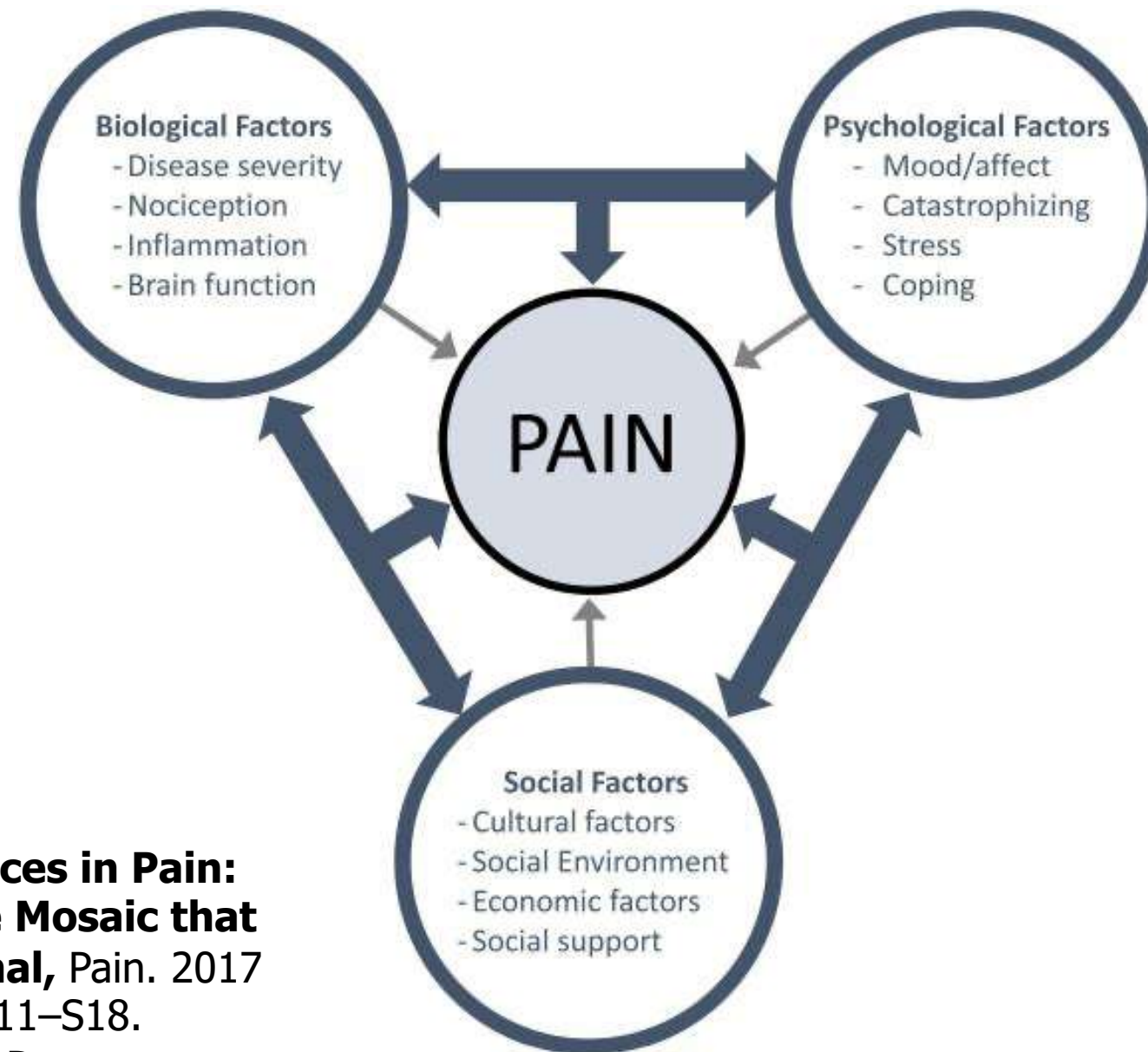
The public





Pain- What is it?

- In 2020 IASP expanded the definition by the addition of six key Notes and the etymology of the word pain for further valuable context.
 - 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.



Graphic
individual Differences in Pain:
Understanding the Mosaic that
Makes Pain Personal, Pain. 2017
Apr; 158(Suppl 1): S11–S18.
Roger B. Fillingim, PhD



Pain Theories

Specificity

Gate Control Theories of Pain

Neuromatrix



Specificity Pain Theories

- Specificity Theory is that each modality has a specific receptor and associated sensory fiber (primary afferent) that is sensitive to one specific stimulus



Gate Control Theory

Noxious stimulus to spinal cord

Spinal Cord modification of noxious stimulus

Gating controlled by large and small fibers.

Open gates: More messages go through; feel more pain (small fiber facilitates (or opens the gate)

- Stress and Tension

- Mental factors-your pain is to focus all your attention on it. Boredom can also lead to the pain gates opening.

- Lack of activity-is to not move around, to have stiff joints and to lack fitness.

Closed gates: Fewer messages go through; less likely to feel pain (large fiber inhibits (or closes the gate)

- Relaxation and contentability

- Mental factors

- Activity



Neuromatrix Pain Theory

Pain is “produced by the output of a widely distributed neural network” that is “genetically determined and modified by sensory experience” throughout life (Melzack, 2005).

Pain is the output of the neural network, and not “a direct response to sensory input following tissue injury, inflammation, and other pathologies” (Gatchel et al., 2007). Although pain most often is triggered by such sensory inputs, it is no always



Categorizing Pain

Duration and Onset- Acute Chronic, High Impact

Types of damage- Nociceptive and neuropathic

Location



Acute Pain- Fifth Vital Sign

Definition:

An expected physiologic experience to noxious stimuli that can become pathologic, is normally sudden in onset, time limited, and motivates behaviors to avoid actual or potential tissue injuries.

Types of Patients:

Severe sprains, strains, tendonitis, fractures, dysmenorrhea, headache, acute onset migraine



Chronic Pain

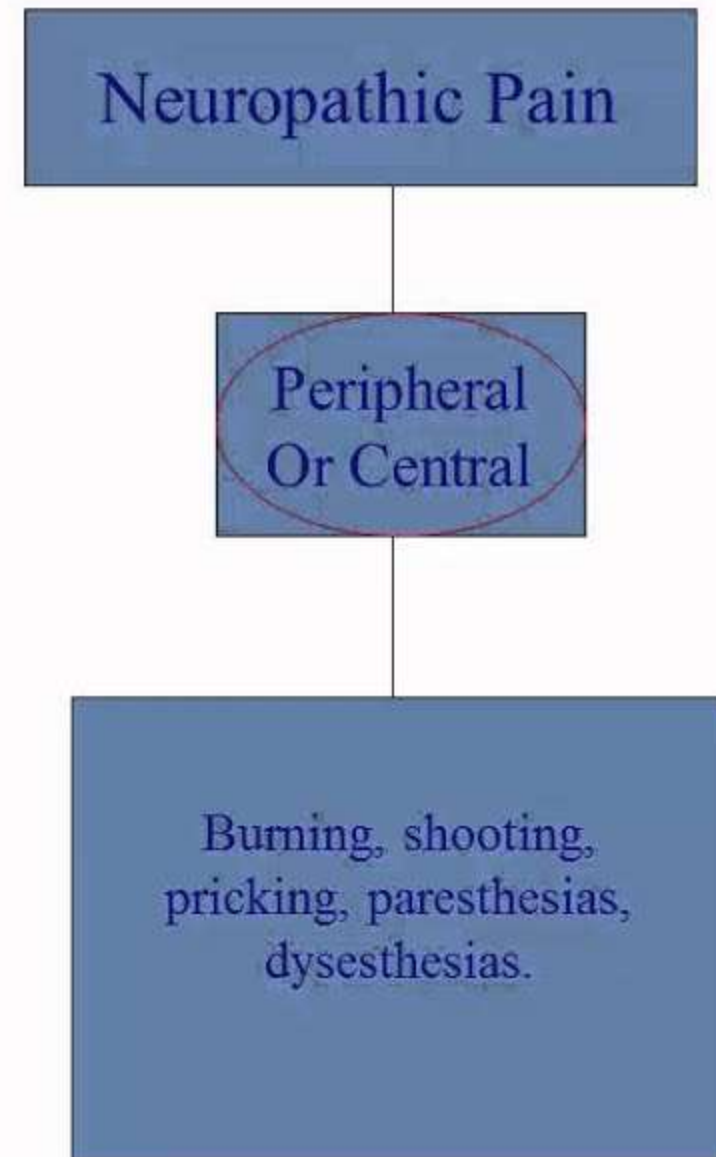
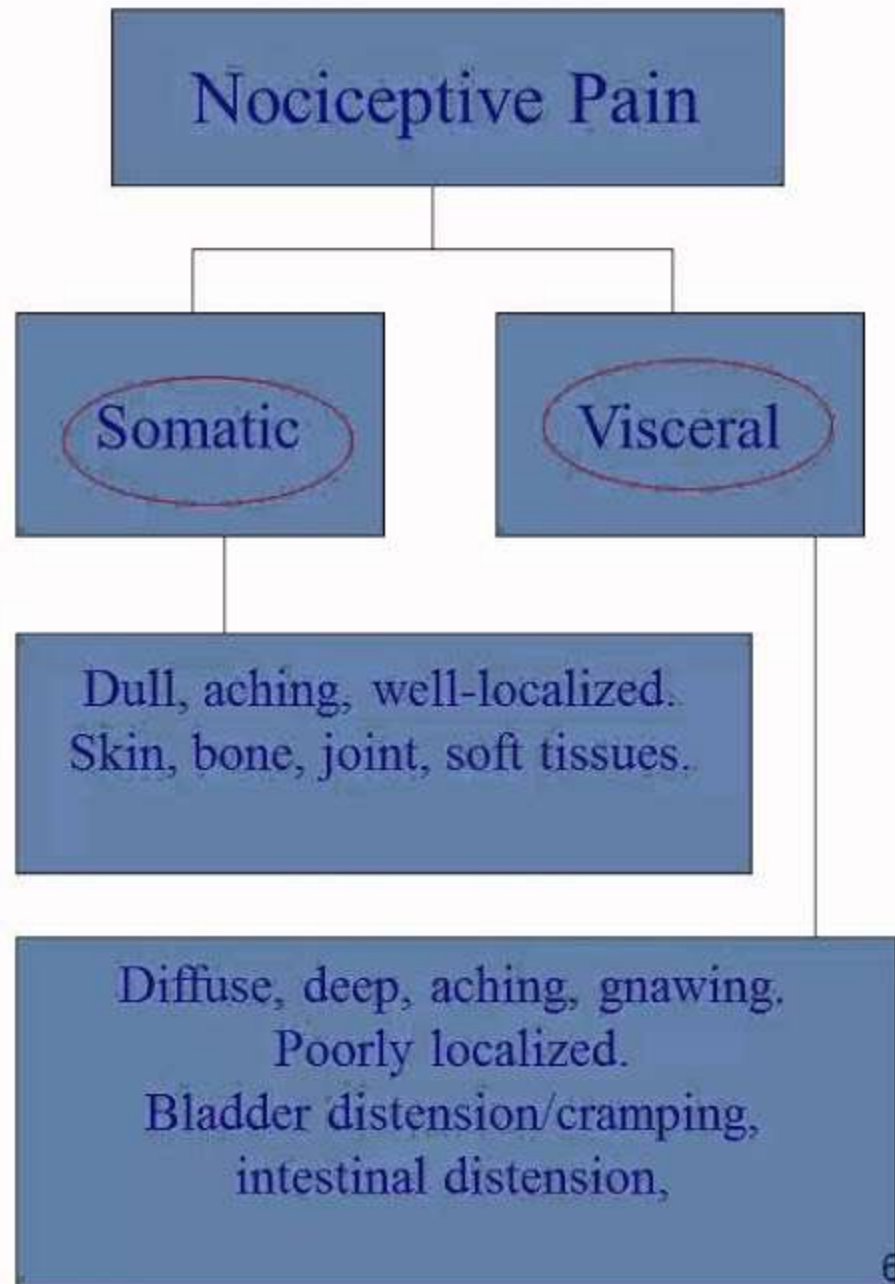
- Pain that occurs on at least half the days for six months or more.
- Chronic pain has a distinct pathology, causing changes throughout the nervous system that often worsen over time. It has significant psychological and cognitive correlates and can constitute a serious, separate disease entity.
- High-impact chronic pain is associated with substantial restriction of participation in work, social, and self-care activities for six months or more.



Etiology

Nociceptive

Neuropathic





ABCDE Pain Assessment

Ask about pain consistently and regularly

Believe patient's reports about pain

Choose pain control options according to the needs of the patient, the family, and the setting.

Deliver the pain relief in a timely way, a consistent way, and a coordinated way.

Empower patients he patient and the family with information that they need and give them as much as possible an active voice in their pain care.



Different Pain Assessments

- Pain intensity
- Pain affect
- Pain-related disability.



Pain Intensity Assessment Scales

Numeric Rating Scale

Faces

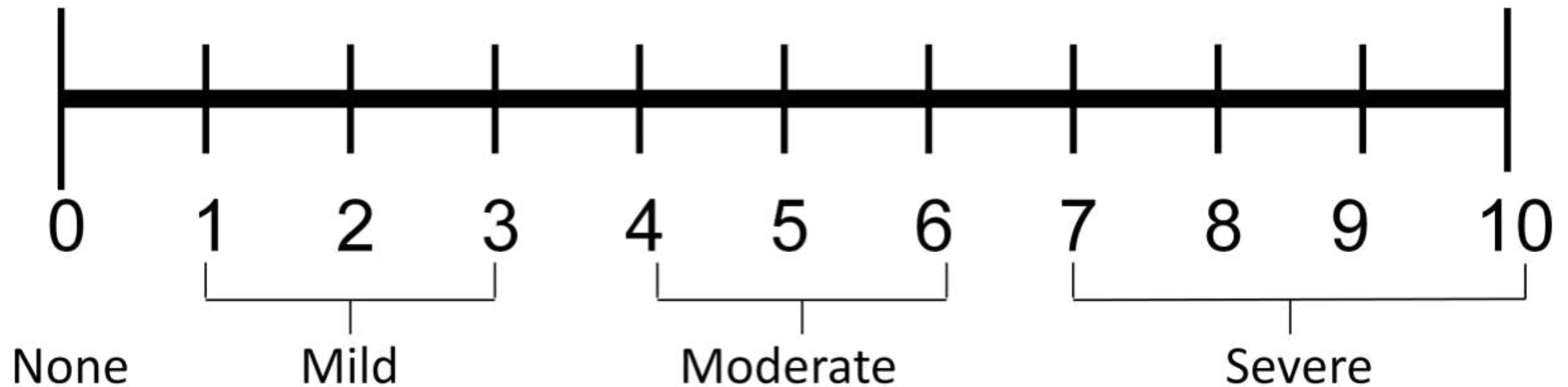
Visual Analogue Scale

Verbal Rating Scale

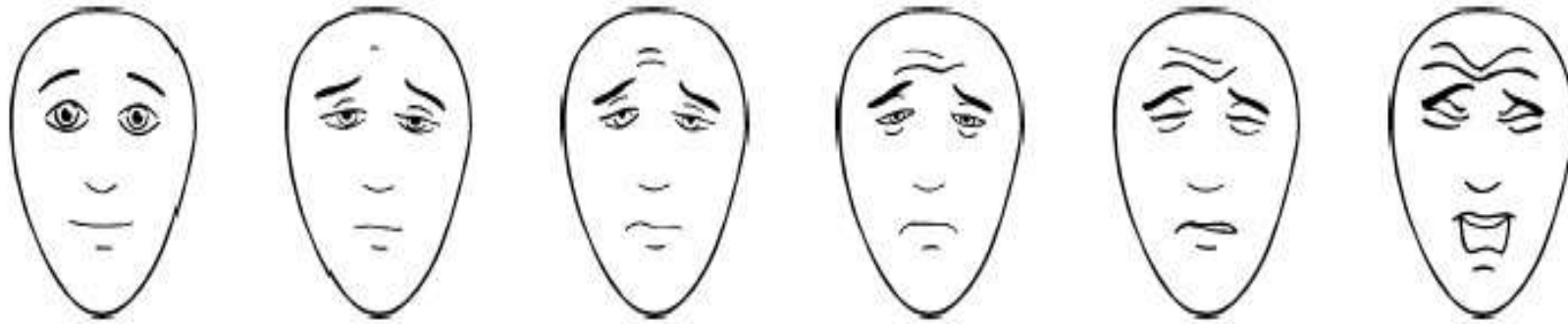
FLACC



Numeric Pain Rating Scale



Faces





Visual Analog Scale





Verbal Rating Scale

VERBAL PAIN INTENSITY SCALE



FLACC



Behaviour	0	1	2
Face	No particular expression or smile	Occasional grimace or frown, withdrawn, disinterested	Frequent to constant quivering chin, clenched jaw
Legs	Normal position or relaxed	Uneasy, restless, tense	Kicking or legs drawn up
Activity	Lying quietly, normal position, moves easily	Squirming, shifting, back and forth, tense	Arched, rigid or jerking
Cry	No cry (awake or asleep)	Moans or whimpers; occasional complaint	Crying steadily, screams, sobs, frequent complaints
Consolability	Content, relaxed	Reassured by touching, hugging or being talked to, distractible	Difficult to console or comfort



Pain Affect Assessment Scales

McGill Pain Questionnaire

American Chronic Pain Quality of Life Scale



Pain Disability Assessment

- Oswestry Disability Index
- Neck Disability Index
- Wheelchair User's Shoulder Pain Index



Disparities in Pain Management

Access issues

Demographic factors, such as sex, race/ethnicity, and age,
SES

Women

Race/Ethnicity

Age

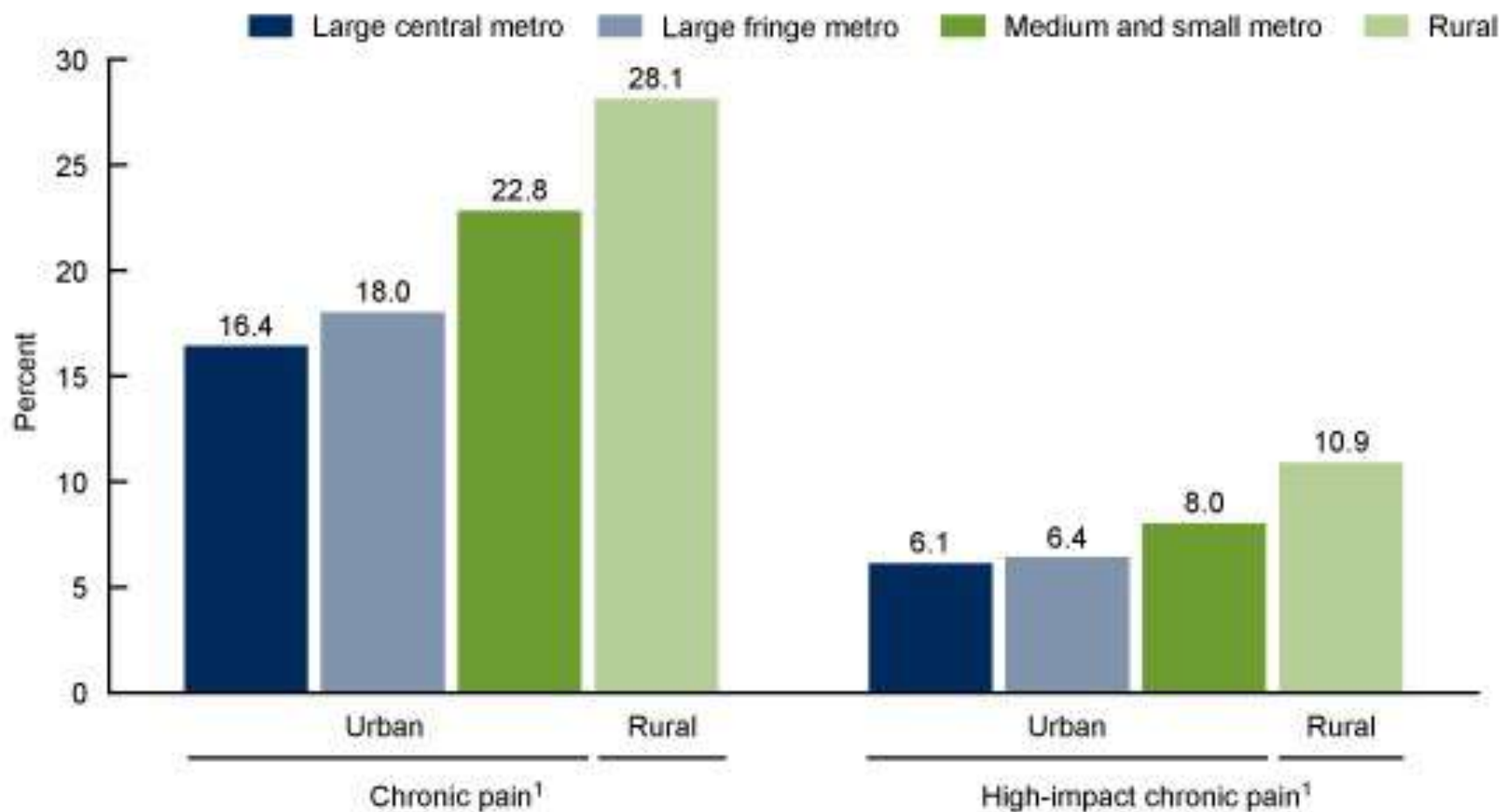
Urban vs. Rural

Among older adults presenting to the ED with acute hip fracture, cognitive impairment was independently associated with lower likelihood of receiving analgesia and lower amount of opioid analgesia.

J Gerontol A Biol Sci Med Sci. 2020 Sep 25;75(10):2003-2007.

Disparities in Acute Pain Treatment by Cognitive Status in Older Adults With Hip Fracture

Figure 4. Percentage of adults aged 18 and over with chronic pain and high-impact chronic pain in the past 3 months, by urbanization level: United States, 2019





Pain Management

Under-treated in the primary care setting

Pain will cause changes in neurosystem

Can become chronic

Potential for psychiatric stress

Active engagement is better than passive



Pain Management Standards- JCAHO 2001 Updated in 2018

JCAHO developed standards that address the assessment and management of pain in hospitals and other health care settings.

The standards acknowledge that patients have a right to effective pain management and require that the presence of pain be routinely assessed for all patients.

- [JAHCO Pain Standards](#)



Pain Management

- Medications
- Regional anesthetic interventions
- Surgery
- Psychological therapies
- CAM
- Rehabilitative/physical therapy



Medications

- **Non-opioids:** Aspirin (ASA), nonsteroidal anti-inflammatories (NSAIDs), and acetaminophen.
- **Opioids:** Examples of opioids include but are not limited to morphine, codeine, hydrocodone, oxycodone, and methadone. Tramadol and tapentadol are considered opioids since they are biochemically similar and work on the same receptors.
- **Adjuvant analgesics:** Medications originally used to treat conditions other than pain but may also be used to help relieve specific pain problems; examples include some antidepressants and anticonvulsants.
- **Other:** Medications with no direct pain-relieving properties may also be prescribed as part of a pain management plan. These include medications to treat insomnia, anxiety, depression, and muscle spasms.



Regional anesthesia

- Regional anesthesia makes a specific part of the body numb to relieve pain or allow surgical procedures to be done. Types of regional anesthesia include spinal anesthesia (also called subarachnoid block), epidural anesthesia, and nerve blocks



Spinal Surgery

When conservative treatments fail...

Spinal Cord Stimulation Systems

Spinal Cord Analgesic Infusion Pumps

Spinal Decompressive Surgeries (Laminectomy or Diskectomy)



Joint Replacement Surgery

Pain from end-stage arthritis can lead to joint replacements.

1. Total Hip Replacement (THR)
2. Total Knee Replacement (TKR)



Psychological therapies

Evaluate and treat psychological and social consequences

Cognitive behavioral therapy

Consider support groups and self-management skill training

Complementary and Alternative Medicine (CAM)



Acupuncture

Meditation

Hypnosis

Yoga

Certain herbal preparations



Research validates that early access to physical therapy can prevent acute pain from becoming chronic pain.



Critical Research on Pain

Research on Prevention of Pain •

“Exercise and the Prevention of Low Back Pain: Ready for Implementation” article published in JAMA Internal Medicine in February 2016.

Conclusion: The current evidence suggests that exercise alone or in combination with education is effective for preventing lower back pain.



Critical Research on Pain

Research on the Value of Physical Therapy in Managing Acute Pain **“Physical Therapy as the First Point of Care To Treat Low Back Pain: An Instrumental Variables Approach To Estimate Impact on Opioid Prescription Health Care Utilization, and Costs”** article published in **Health Services Research in December 2018**. Conclusion: Patients with low back pain who saw a physical therapist at the first point of care had lower utilization of high-cost medical services, lower opioid use, and lower health care costs compared with those who saw a physical therapist later in treatment, or never saw one at all.



Physical Therapy

Promote change in Behaviors

Relaxation Techniques-Anxiety enhance one's perception of pain.

Heat and cold

Manipulative procedures

Hydrotherapy

Counterirritants

TENS

Electrotherapeutic modalities

Aquatic



Physical Therapy Examination

ROM

Posture

Leg length discrepancy

Manual Ms testing

Neurologic exam-hyperalgesia, hyperpathia, numbness, paresthesia

Aerobic testing

Balance

Sensory – nerve innervation



Physical Therapy Interventions

Patient Education-anatomy, body mechanics

Postural correction

Exercise – Exercise-Stretching, strengthening, aerobic, endurance, increase overall activity level especially with chronic pain, wellness versus illness

Work Hardening and Functional Restoration

Positioning – Cast, orthotics, lumbar supports



Outcomes in Pain management

Pain reduction

Improved physical function

Improved psychosocial function

Improved sleep

Reduced depression or anxiety

Return to work

Change in medication

Increase self-management of pain



Case

A 34-year-old woman suffered from significant pain for 7 months, depression, non-restorative sleep, fatigue, severe morning stiffness, leg cramps, irritable bowel syndrome, hypersensitivity to cold, concentration difficulties, and forgetfulness.

What is her medical diagnosis?

What type of pain does she have?

What pain assessments will you use?

What PT interventions are appropriate for her dx?



Case

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What is her medical diagnosis?

Fibromyalgia

- Widespread pain index (WPI) score of seven or higher and a symptom severity scale (SS) score of five or higher. Or a WPI score of three to six and a SS score of nine or higher.
- Symptoms at a similar level for at least three months.
- No other disorder that could explain the symptoms.



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What type of pain does she have?

Chronic and neuropathic

Fibromyalgia has mechanisms and pathways associated with central sensitization. The condition follows similar pathways as other neuropathic pain syndromes, such as complex regional pain syndrome, interstitial cystitis and irritable bowel syndrome.



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What pain assessment would you use?

VAS

NPRS

McGill

American Chronic Pain Quality of Life Scale

Other Assessments?

Sleep Assessment

1. Epworth Sleepiness Scale (ESS) 2

.Assessment Flow Chart and

Symptoms / Management Table

Pain Stages of Change Questionnaire (PSOCQ)



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What PT interventions are appropriate for her dx?

Education

Aerobic condition

Aquatic Ex program

Stretching

Strengthening

Yoga or Tai Chi

Deep Breathing



Resources

American Chronic Pain Association – Stanford
Resource Guide To Chronic Pain Management
An Integrated Guide to Comprehensive Pain Therapies
2021 Edition

Relieving Pain in America: A Blueprint for Transforming
Prevention, Care, Education, and Research (2011)
National Academies Press



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