BEST PRACTICES ON CHRONIC PAIN TREATMENT AND MANAGEMENT IN ADULTS

Kemly Philip, MD PhD MBE
Assistant Professor
Division Chief, Interventional Pain & Musculoskeletal Medicine
Department of Physical Medicine & Rehabilitation
McGovern Medical School at UTHealth

Disclosures

- None

Learning Objectives

- Define chronic pain
- Discuss the importance of pain management on function and disability
- Describe best practices for chronic pain management in adults:
  - Treatment
    - Analgesics
    - Targeted interventions
    - Physical therapy/exercise
    - Psychology
    - Precision Medicine
    - Neuromodulation
  - Assessment

Learning Objectives

- **Define chronic pain**
- Discuss the importance of pain management on function and disability
- Describe best practices for chronic pain management in adults:
  - Treatment
    - Analgesics
    - Targeted interventions
    - Physical therapy/exercise
    - Psychology
    - Precision Medicine
    - Neuromodulation
  - Assessment

Chronic Pain

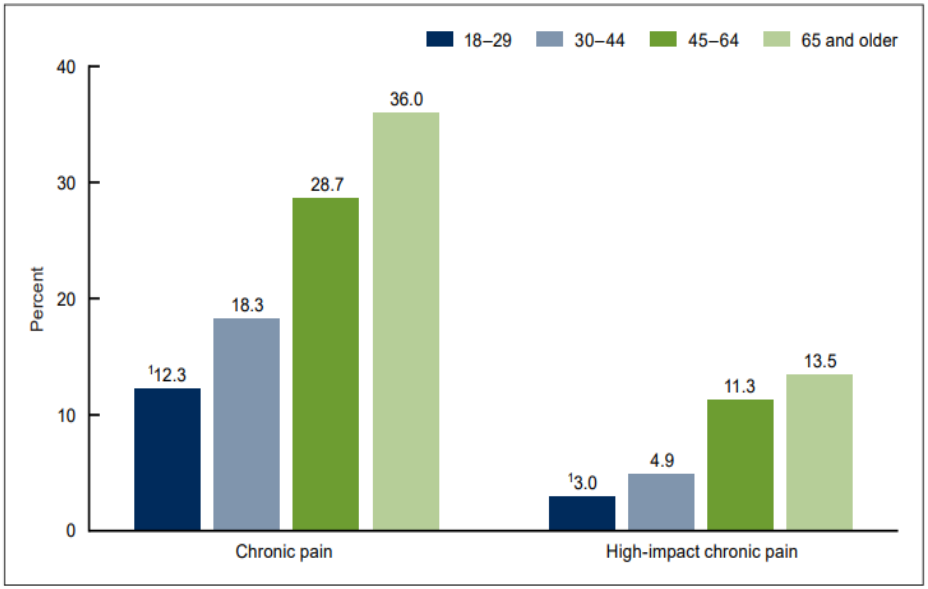
- "Pain that persists or recurs for **longer than 3 months.** Such pain often becomes the sole or predominant clinical problem in some patients[1]" - *International Association for the Study of Pain*
  - *Pain affecting work and activities of daily living:* ***high-impact chronic pain***

NCHS Data Brief ■ No. 518 ■ November 2024

Chronic Pain and High-impact Chronic Pain in U.S. Adults, 2023

Jacqueline W. Lucas, M.P.H., and Inderbir Sohi, M.S.P.H.

Chronic pain increases with age and can **limit mobility** causing **disability.**



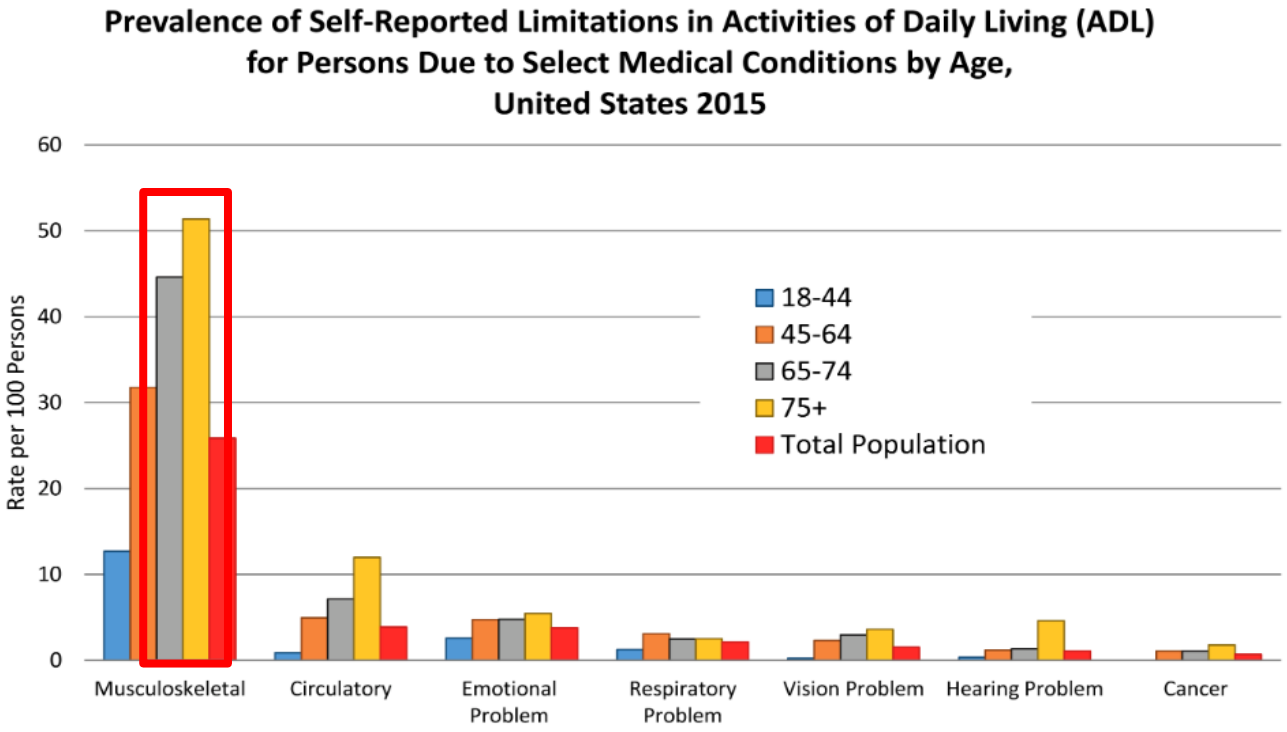
Rolf-Detlef et al. Chronic Pain as a symptom or a disease: the IASP Classification of Chronic Pain for the International Classification of Diseases (ICD-11).

UTHealth The University of Texas Health Science Center at Houston | McGovern Medical School

Learning Objectives

- Define chronic pain
- **Discuss the importance of pain management on function and disability**
- Describe best practices for chronic pain management in adults:
  - Treatment
    - Analgesics
    - Targeted interventions
    - Physical therapy/exercise
    - Psychology
    - Precision Medicine
    - Neuromodulation
  - Assessment

Chronic Pain & Disability



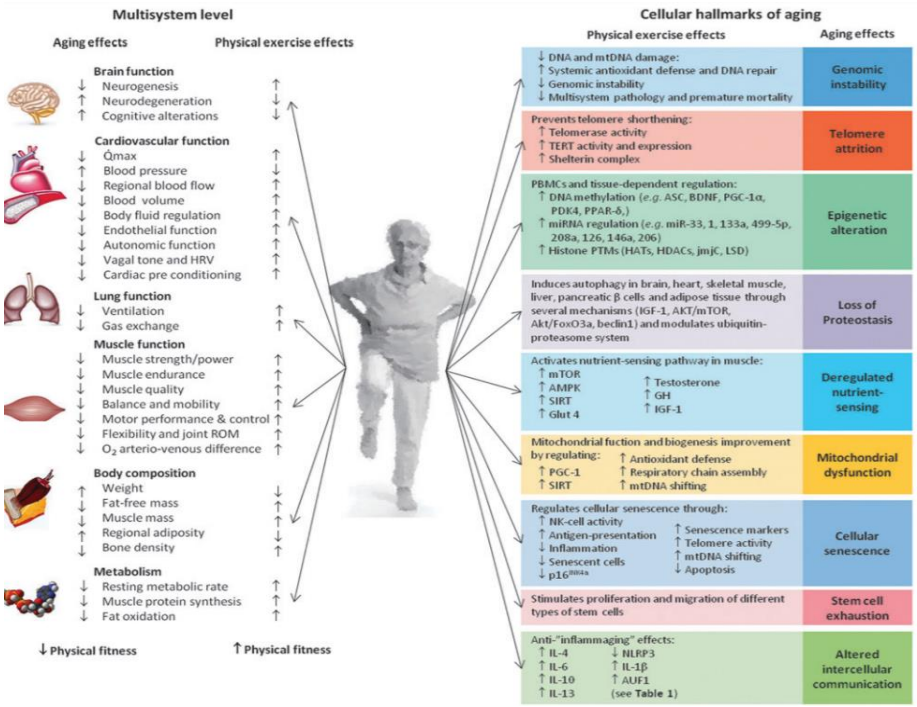
Musculoskeletal Conditions account for **34.1% of Social Security Disability** (Dec 2023) contributing $500-635 billion dollars spent annually

United States Bone and Joint Initiative: The Burden of Musculoskeletal Diseases in the United States (BMUS), Fourth Edition, forthcoming. Rosemont, IL. Available at http://www.boneandjointburden.org.

UTHealth The University of Texas Health Science Center at Houston | McGovern Medical School

Chronic Pain & Disability

- Chronic disease prevention
- Community integration
- Improved QOL
- Slow cognitive decline



Adapted from Garatachea et al. (2015)

Bauman et al. Updating the Evidence for Physical Activity: Summative Reviews of the Epidemiological Evidence, Prevalence, and Interventions to Promote "Active Aging". *The Gerontologist*. 2016, Vol 56. No 52. S268-S280.
Cruz-Almeida et al. Associations of Musculoskeletal Pain with Mobility in Older Adults: Potential Cerebral Mechanisms. *J Gerontol A Biol Sci Med Sci* 2017, Vol 72. No 9. 1270-1276.

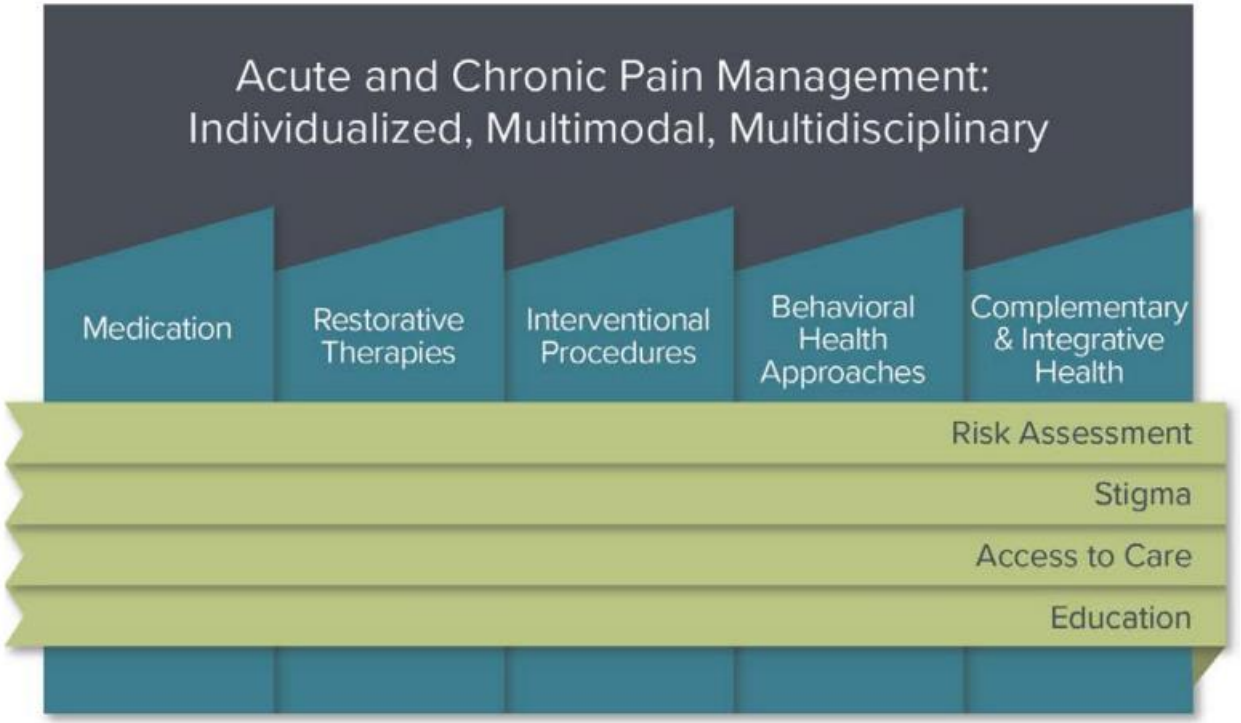
Learning Objectives

- Define chronic pain
- Discuss the importance of pain management on function and disability
- Describe best practices for chronic pain management in adults:
  - Treatment
    - Physical therapy/exercise
    - **Analgesics**
    - **Targeted interventions**
    - Psychology
    - Precision Medicine
    - Neuromodulation
  - Assessment

Chronic Pain Management

PAIN MANAGEMENT BEST PRACTICES
INTER-AGENCY TASK FORCE REPORT

Updates, Gaps, Inconsistencies, and Recommendations



Individualized

Multimodal

Multidisciplinary

Adapted from (2019) Pain Management Best Practices Inter-Agency Task Force.

https://www.hhs.gov/sites/default/files/pain-mgmt-best-practices-draft-final-report-05062019.pdf

UTHealth The University of Texas Health Science Center at Houston | McGovern Medical School

Chronic Pain Management

PAIN MANAGEMENT BEST PRACTICES
INTER-AGENCY TASK FORCE REPORT

Updates, Gaps, Inconsistencies, and Recommendations

Non-opioid

Opioid

Adapted from (2019) Pain Management Best Practices Inter-Agency Task Force.

CDC recommends non-pharmacologic and non-opioids as first-line therapies, when clinically appropriate.

https://www.hhs.gov/sites/default/files/pain-mgmt-best-practices-draft-final-report-05062019.pdf

UTHealth The University of Texas Health Science Center at Houston | McGovern Medical School

Chronic Pain Management: Analgesics

Table D. Pharmacologic Treatments			
Class of Medication	Indications[a]	Magnitude of Benefit[b]	
		PAIN	FUNCTION
NSAIDs (topical or oral)	Low back pain, asteoarthritis, inflammatory arthritis, acute musculoskeletal (MSK) pain	Small to noderate	None to small
Acetaminophen	Acute MSK pain	Small	None
Antidepessants	Diabetic peripheral neuropathy, fibromyalgia	Small	None
Anticonvulsants	Diabetic peripheral neuropathy, fibromyalgia	Small to moderate	None (neuropathic pain) Small (fibromyalgia)

Adapted from (2021) *AAFP Chronic Pain Management Toolkit*. Pain Management Section 3.

Utilize the **lowest effective** dosage for **pain relief** and **functional improvement.**

https://www.aafp.org/dam/AAFP/documents/patient_care/pain_management/cpm-toolkit-pain-mgmt.pdf

Analgesic Harms

Nonopioid Pharmacologic Treatments for Chronic Pain

Prepared for:
Agency for Healthcare Research and Quality
U.S. Department of Health and Human Services
5600 Fishers Lane
Rockville, MD 20857
www.ahrq.gov

Table B-2. Harms

Drug(s)/Drug Class	Harms by Drug Class
All drugs	Withdrawal due to adverse events, serious adverse events, overdose, misuse, and dependence
Serotonin-norepinephrine reuptake inhibitor antidepressants	Cognitive effects, nausea, sedation
Tricyclic antidepressants	Cardiac rhythm abnormalities, cognitive effects, dry mouth, urinary retention, weight gain
Pregabalin/gabapentin anticonvulsants	Blurred vision, cognitive effects, dizziness, peripheral edema, sedation, weight gain
Oxcarbazepine/carbamazepine anticonvulsants	Cognitive effects, hyponatremia, neutropenia, sedation
NSAIDs	CV events, GI, liver dysfunction, renal dysfunction
Skeletal muscle relaxants	Dry mouth, sedation, urinary retention
Acetaminophen	Liver toxicity
Memantine	Cardiac rhythm abnormalities, cognitive effects, dizziness, sedation
Topical (any)	Application site reactions
Topical lidocaine	Cardiotoxicity, cognitive effects
Topical diclofenac	CV events, GI, liver dysfunction, renal dysfunction
Cannabis	Addiction/dependence, cognitive effects, hyperemesis, nausea, sedation

https://effectivehealthcare.ahrq.gov/sites/default/files/pdf/nonopioid-chronic-pain.pdf

Morbidity and Mortality Weekly Report (*MMWR*)

Search

CDC Clinical Practice Guideline for Prescribing Opioids for Pain United States, 2022

Recommendations and Reports / November 4, 2022 / 71(3);1–95

BOX 3. Recommendations for prescribing opioids for outpatients with pain, excluding pain management related to sickle cell disease, cancer-related pain treatment, palliative care, and end-of-life care; recommendation categories; and evidence types — CDC Clinical Practice Guideline for Prescribing Opioids for Pain — United States, 2022

Return

Determining Whether or Not to Initiate Opioids for Pain (Recommendations 1 and 2)

1. Nonopioid therapies are at least as effective as opioids for many common types of acute pain. Clinicians should maximize use of nonpharmacologic and nonopioid pharmacologic therapies as appropriate for the specific condition and patient and only consider opioid therapy for acute pain if benefits are anticipated to outweigh risks to the patient. Before prescribing opioid therapy for acute pain, clinicians should discuss with patients the realistic benefits and known risks of opioid therapy (recommendation category: B; evidence type: 3).
2. Nonopioid therapies are preferred for subacute and chronic pain. Clinicians should maximize use of nonpharmacologic and nonopioid pharmacologic therapies as appropriate for the specific condition and patient and only consider initiating opioid therapy if expected benefits for pain and function are anticipated to outweigh risks to the patient. Before starting opioid therapy for subacute or chronic pain, clinicians should discuss with patients the realistic benefits and known risks of opioid therapy, should work with patients to establish treatment goals for pain and function, and should consider how opioid therapy will be discontinued if benefits do not outweigh risks (recommendation category: A; evidence type: 2).

Selecting Opioids and Determining Opioid Dosages (Recommendations 3, 4, and 5)

3. When starting opioid therapy for acute, subacute, or chronic pain, clinicians should prescribe immediate-release opioids instead of extended-release and long-acting (ER/LA) opioids (recommendation category: A; evidence type: 4).
4. When opioids are initiated for opioid-naïve patients with acute, subacute, or chronic pain, clinicians should prescribe the lowest effective dosage. If opioids are continued for subacute or chronic pain, clinicians should use caution when prescribing opioids at any dosage, should carefully evaluate individual benefits and risks when considering increasing dosage, and should avoid increasing dosage above levels likely to yield diminishing returns in benefits relative to risks to patients (recommendation category: A; evidence type: 3).
5. For patients already receiving opioid therapy, clinicians should carefully weigh benefits and risks and exercise care when changing opioid dosage. If benefits outweigh risks of continued opioid therapy, clinicians should work closely with patients to optimize nonopioid therapies while continuing opioid therapy. If benefits do not outweigh risks of continued opioid therapy, clinicians should optimize other therapies and work closely with patients to gradually taper to lower dosages or, if warranted based on the individual circumstances of the patient, appropriately taper and discontinue opioids. Unless there are indications of a life-threatening issue such as warning signs of impending overdose (e.g., confusion, sedation, or slurred speech), opioid therapy should not be discontinued abruptly, and clinicians should not rapidly reduce opioid dosages from higher dosages (recommendation category: B; evidence type: 4).

Dowell D, Ragan KR, Jones CM, Baldwin GT, Chou R. CDC Clinical Practice Guideline for Prescribing Opioids for Pain — United States, 2022. MMWR Recomm Rep 2022;71(No. RR-3):1–95. DOI: http://dx.doi.org/10.15585/mmwr.rr7103a1

Morbidity and Mortality Weekly Report (*MMWR*)

Search

CDC Clinical Practice Guideline for Prescribing Opioids for Pain United States, 2022

Recommendations and Reports / November 4, 2022 / 71(3);1–95

Deciding Duration of Initial Opioid Prescription and Conducting Follow-Up (Recommendations 6 and 7)

6. When opioids are needed for acute pain, clinicians should prescribe no greater quantity than needed for the expected duration of pain severe enough to require opioids (recommendation category: A; evidence type: 4).
7. Clinicians should evaluate benefits and risks with patients within 1–4 weeks of starting opioid therapy for subacute or chronic pain or of dosage escalation. Clinicians should regularly reevaluate benefits and risks of continued opioid therapy with patients (recommendation category: A; evidence type: 4).

Assessing Risk and Addressing Potential Harms of Opioid Use (Recommendations 8, 9, 10, 11, and 12)

8. Before starting and periodically during continuation of opioid therapy, clinicians should evaluate risk for opioid-related harms and discuss risk with patients. Clinicians should work with patients to incorporate into the management plan strategies to mitigate risk, including offering naloxone (recommendation category: A; evidence type: 4).
9. When prescribing initial opioid therapy for acute, subacute, or chronic pain, and periodically during opioid therapy for chronic pain, clinicians should review the patient's history of controlled substance prescriptions using state prescription drug monitoring program (PDMP) data to determine whether the patient is receiving opioid dosages or combinations that put the patient at high risk for overdose (recommendation category: B; evidence type: 4).
10. When prescribing opioids for subacute or chronic pain, clinicians should consider the benefits and risks of toxicology testing to assess for prescribed medications as well as other prescribed and nonprescribed controlled substances (recommendation category: B; evidence type: 4).
11. Clinicians should use particular caution when prescribing opioid pain medication and benzodiazepines concurrently and consider whether benefits outweigh risks of concurrent prescribing of opioids and other central nervous system depressants (recommendation category: B; evidence type: 3).
12. Clinicians should offer or arrange treatment with evidence-based medications to treat patients with opioid use disorder. Detoxification on its own, without medications for opioid use disorder, is not recommended for opioid use disorder because of increased risks for resuming drug use, overdose, and overdose death (recommendation category: A; evidence type: 1).

Dowell D, Ragan KR, Jones CM, Baldwin GT, Chou R. CDC Clinical Practice Guideline for Prescribing Opioids for Pain — United States, 2022. MMWR Recomm Rep 2022;71(No. RR-3):1–95. DOI: http://dx.doi.org/10.15585/mmwr.rr7103a1

ment: Opioids

Opioid Medication for Chronic Pain Agreement

Chronic Pain Management Toolkit

This is an agreement between _____ (patient) and Dr. _____.

I am being treated with opioid medication for my chronic pain, which I understand may not completely rid me of my pain, but will decrease it enough that I can be more active. I understand that, because this medication has risks and side effects, my doctor needs to monitor my treatment closely in order to keep me safe. I ackr over time to meet my functional goals, and that my doctor will discuss the risks of the medication, as well as any changes that occur during my treatment. In additic

Patient Initials	Please read the statements below and initial in the box at the left.
	I understand that the medication may be stopped or changed to an a meet my functional goals.
	To reduce risk, I will take medication as prescribed. I will not take mo frequently than prescribed.
	I will inform my doctor of all side effects I experience.
	To reduce risk, I will not take sedatives, alcohol, or illegal drugs while
	I will submit to urine and/or blood tests to assist in monitoring my trea
	I understand that my doctor or his/her staff may check the state pres against overlapping prescriptions.
	I will receive my prescription for this medication only from Dr. _____
	I will fill this prescription at only one pharmacy. (Fill in pharmacy infor
	I will keep my medication in a safe place. I understand if my medicine not be replaced.
	I will do my best to keep all scheduled follow-up appointments. I und prescrption refill if I miss my appointment.

Chronic Pain

Urine Drug Testing for Commonly Used and Misused Drugs

OPIATES

Drug	Detection Time	Test Order	False Positive
Codeine	1-3 days	Opiates Immunoassay* Confirmatory test: GC/MS or LC/MS/MS**	Dextromethorpan, diphenhydramine, heroin, poppy seeds, quinine, quinolones, rifampin, verapamil, other opiates
Morphine	1-3 days	Opiates Immunoassay* Confirmatory test: GC/MS or LC/MS/MS	Dextromethorpan, diphenhydramine, heroin, poppy seeds, quinine, quinolones, rifampin, verapamil, other opiates
Fentanyl	1-3 days	GC/MS or LC/MS/MS Fentanyl	n/a
Meripidine	1-3 days	GC/MS or LC/MS/MS Meperidine	n/a
Methadone	3-7 days	Methadone Immunoassay Confirmatory test: GC/MS or LC/MS/MS Methadone	Diphenhydramine, clomipramine
Hydrocodone	1-3 days	Opiates immunoassay Confirmatory test: GC/MS or LC/MS/MS	Dextromethorpan, diphenhydramine, heroin, poppy seeds, quinine, quinolones, rifampin, verapamil, other opiates
Hydromorphone	1-3 days	Opiates immunoassay Confirmatory test: GC/MS or LC/MS/MS	Dextromethorpan, diphenhydramine, heroin, poppy seeds, quinine, quinolones, rifampin, verapamil, other opiates
Oxycodone	1-3 days	Opiates immunoassay Confirmatory test: GC/MS or LC/MS/MS	Dextromethorpan, diphenhydramine, heroin, poppy seeds, quinine, quinolones, rifampin, verapamil, other opiates
Oxymorphone	1-3 days	Opiates immunoassay Confirmatory test: GC/MS or LC/MS/MS	Dextromethorpan, diphenhydramine, heroin, poppy seeds, quinine, quinolones, rifampin, verapamil, other opiates

Medication name, dose, frequency _____

Pharmacy name _____

Pharmacy phone number _____

By signing below, we agree that we are comfortable with this agreement and our responsibilities.

Total Score Risk Category
Low Risk 0-3
Moderate Risk 4-7
High Risk ≥8

Dowell D, Ragan KR, Jones CM, Baldwin GT, Chou R. CDC Clinical Practice Guideline for Prescribing Opioids for Pain — United States, 2022. MMWR Recomm Rep 2022;71(No. RR-3):1–95. DOI: http://dx.doi.org/10.15585/mmwr.rr7103a1

Chronic Pain Management: Opioids

residents with **chronic non-cancer pain** receive **regularly scheduled opioids**

https://www.aafp.org/dam/AAFP/documents/patient_care/pain_management/cpm-toolkit-pain-mgmt.pdf.

UTHealth The University of Texas Health Science Center at Houston | McGovern Medical School

Chronic Pain Medication Management

Table D. Pharmacologic Treatments			
Class of Medication	Indications[a]	Magnitude of Benefit[b]	
		PAIN	FUNCTION
NSAIDs (topical or oral)	Low back pain, asteoarthritis, inflammatory arthritis, acute musculoskeletal (MSK) pain	Small to noderate	None to small
Acetaminophen	Acute MSK pain	Small	None
Antidepessants	Diabetic peripheral neuropathy, fibromyalgia	Small	None
Anticonvulsants	Diabetic peripheral neuropathy, fibromyalgia	Small to moderate	None (neuropathic pain) Small (fibromyalgia)
Opioids	Acute MSK pain, chronic pain, neuropathy	Small to no benefit[c]	Small to no benefit[c]

Adapted from (2021) *AAFP Chronic Pain Management Toolkit*. Pain Management Section 3.

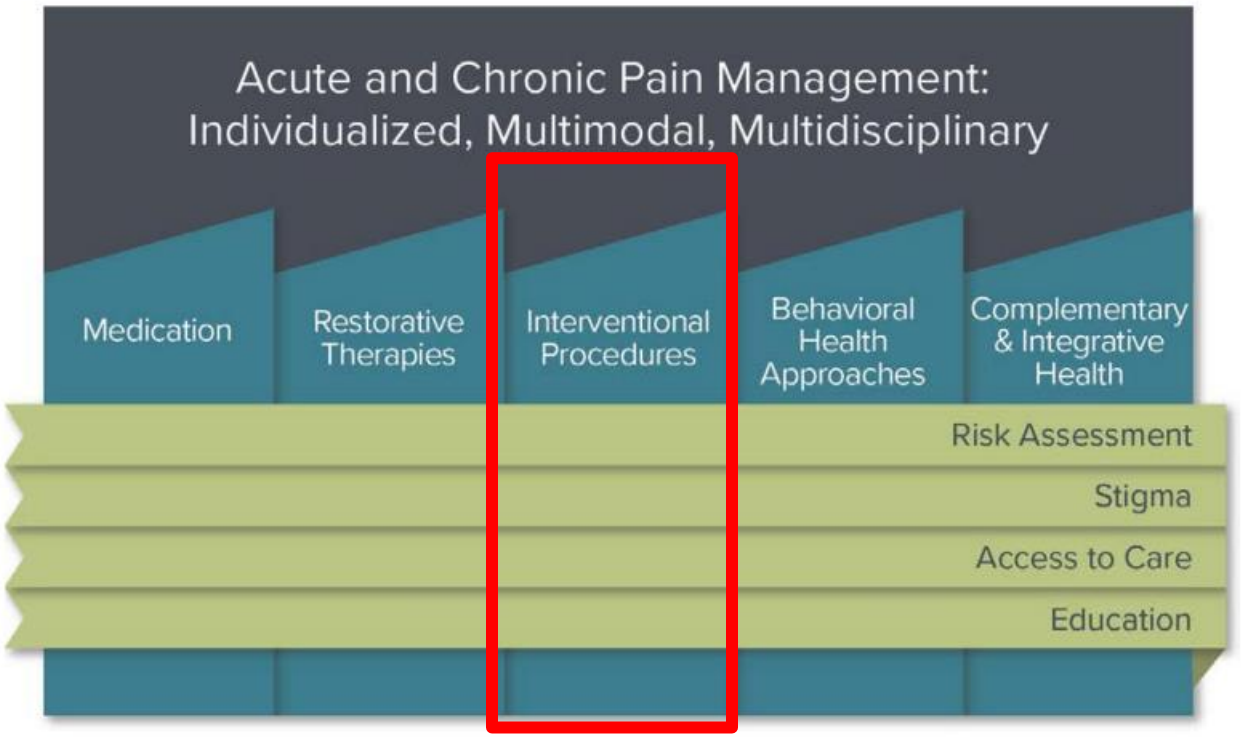
Pharmacologic Management can be **ineffective** and **limited.**

https://www.aafp.org/dam/AAFP/documents/patient_care/pain_management/cpm-toolkit-pain-mgmt.pdf.

Chronic Pain Management

PAIN MANAGEMENT BEST PRACTICES
INTER-AGENCY TASK FORCE REPORT

Updates, Gaps, Inconsistencies, and Recommendations

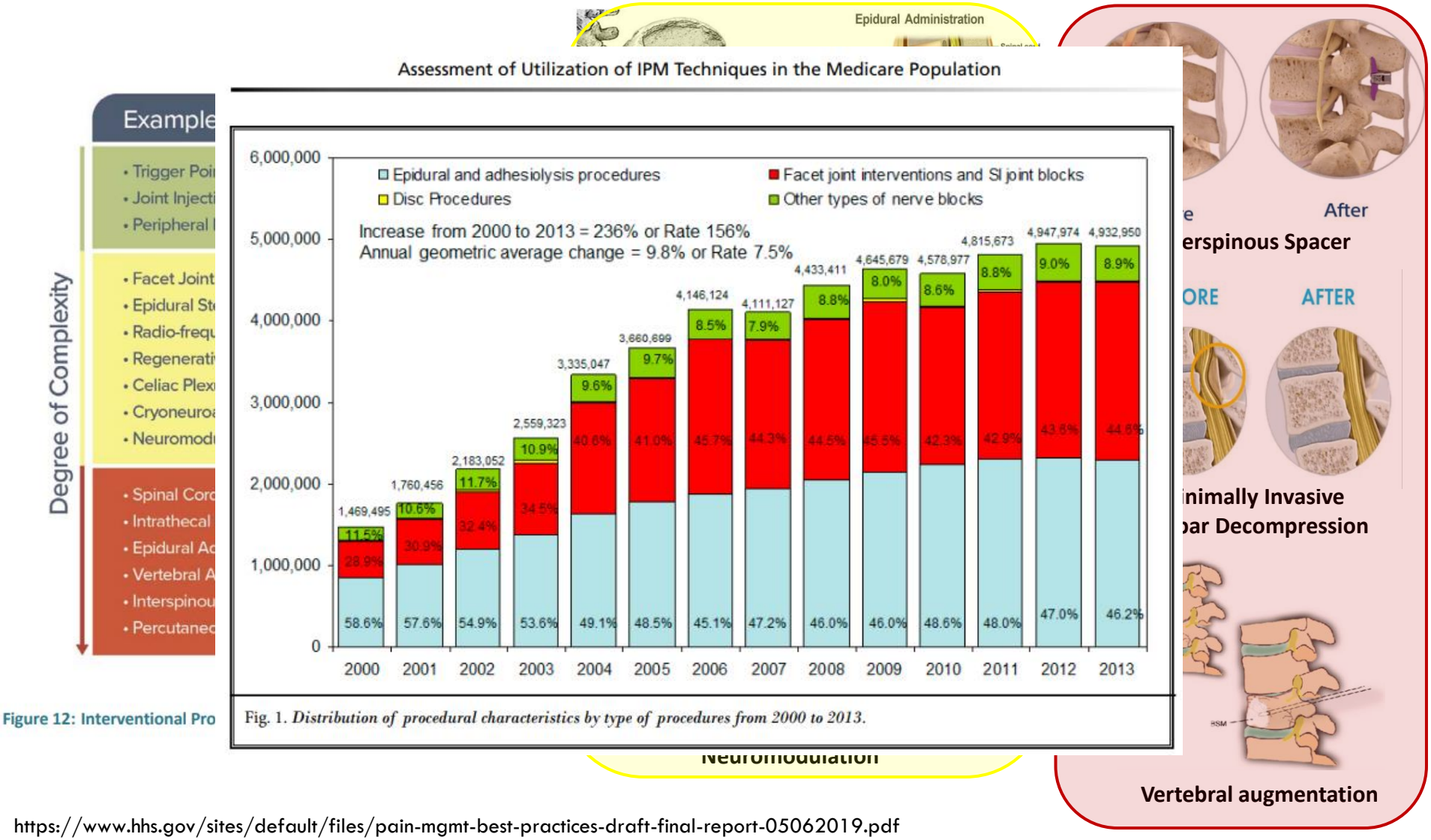


Adapted from (2019) Pain Management Best Practices Inter-Agency Task Force.

https://www.hhs.gov/sites/default/files/pain-mgmt-best-practices-draft-final-report-05062019.pdf

UTHealth The University of Texas Health Science Center at Houston | McGovern Medical School

Chronic Pain Management: Interventions



https://www.hhs.gov/sites/default/files/pain-mgmt-best-practices-draft-final-report-05062019.pdf

Chronic Pain Management: Interventions

- **Fewer side effects** in comparison to pharmacologic interventions
- **Combine** interventions with **therapy** for **synergistic** benefit
- Interventions **limit** the **need** for **pharmacologic** interventions or **surgery**

Interventions offer a **direct, targeted** approach to both **diagnosing** and **treating** a **pain generator** however requires **complex** decision making

	Non-PT	PT	*P*-value
Abduction			
Baseline (wk)	50 (40-60)	50 (41-102)	0.39
6	70 (43-90)	100 (80-140)	0.01
12	80 (65-98)	100 (90-165)	0.03
26	85 (80-149)	130 (85-170)	0.33
Anteflexion			
Baseline (wk)	70 (70-80)	95 (48-120)	0.25
6	90 (75-111)	140 (105-165)	0.02
12	90 (80-146)	130 (115-155)	0.06
26	100 (90-160)	155 (110-170)	0.17
External rotation			
Baseline (wk)	0 (0-5)	8 (0-24)	0.14
6	13 (5-26)	40 (30-43)	0.01
12	18 (8-29)	40 (25-65)	0.04
26	30 (13-44)	50 (35-60)	0.07
SPADI total			
Baseline (wk)	80 (65-87)	82 (35-86)	0.54
6	63 (45-76)	14 (6-38)	0.01
12	42 (25-72)	16 (7-58)	0.17
26	14 (11-39)	10 (2-28)	0.44

SPADI: Shoulder Pain and Disability Index; PT: Physiotherapy treatment.

Adapted from Kraal et al. (2018)

Ultrasound-guided glenohumeral corticosteroid injection (**CSI**) when combined with physical therapy (**PT**) **improves ROM** and **decreases** shoulder **pain** in the first 12 wks for frozen shoulder.

Kraal et al. Corticosteroid injection alone versus additional physiotherapy treatment in early stage frozen shoulders. *World J Orthop* (2018) 9 (9): 112-184.

Chronic Pain Management: Interventional Pain Barriers

Gap 2: Inconsistencies and frequent delays exist in insurance coverage for interventional pain techniques that are clinically appropriate for a particular condition and context.

- **Recommendation 2a:** Encourage CMS and private payers to provide consistent and timely insurance coverage for evidence-informed interventional procedures early in the course of treatment when clinically appropriate. These procedures can be paired with medication and other therapies to improve function and QOL.
- **Recommendation 2b:** CMS and other payers must restore reimbursement to non-hospital sites of service to improve access and lower the cost of interventional procedures.

Interventional Treatments for Acute and Chronic Pain: Systematic Review

Prepared for:
Agency for Healthcare Research and Quality
U.S. Department of Health and Human Services
5600 Fishers Lane
Rockville, MD 20857
www.ahrq.gov

Results. Thirty-seven randomized trials (in 48 publications) were included. Vertebroplasty (13 trials) is probably more effective at reducing pain and improving function in older (>65 years of age) patients, but benefits are small (less than 1 point on a 10-point pain scale). Benefits appear smaller (but still present) in sham-controlled (5 trials) compared with usual care controlled trials (8 trials) and larger in trials of patients with more acute symptoms; however, testing for subgroup effects was limited by imprecision. Vertebroplasty is probably not associated with increased risk of incident vertebral fracture (10 trials). Kyphoplasty (2 trials) is probably more effective than usual care for pain and function in older patients with vertebral compression fracture at up to 1 month (moderate to large benefits) and may be more effective at >1 month to ≥1 year (small to moderate benefits) but has not been compared against sham therapy. Evidence on kyphoplasty and risk of incident fracture was conflicting. In younger (below age for Medicare eligibility) populations, cooled radiofrequency denervation for sacroiliac pain (2 trials) is probably more effective for pain and function versus sham at 1 and 3 months (moderate to large benefits). Cooled radiofrequency for presumed facet joint pain may be similarly effective versus conventional radiofrequency, and piriformis injection with corticosteroid for piriformis syndrome may be more effective than sham injection for pain. For the other interventional procedures and conditions addressed, evidence was too limited to determine benefits and harms.

Data Analysis

National and Geographic Trends in Medicare Reimbursement for Pain Management 2014-2023

George Wiest, BMus[1], Alexander Dorius, MBA[1], Carson Bateman, BS[2], and Miles Day, MD[3]

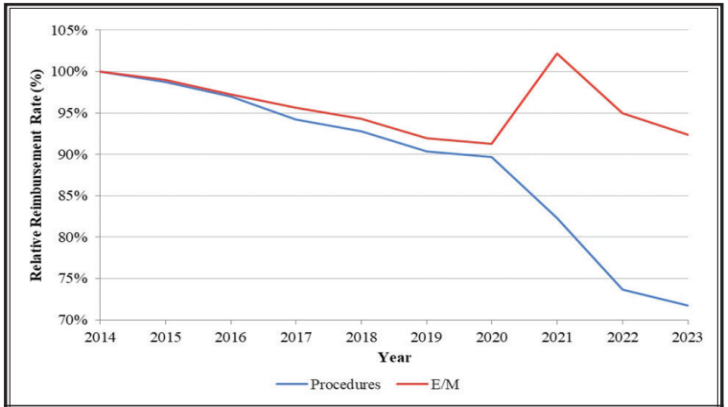


Fig. 1. *Average change in Medicare reimbursement 2014-2023 for procedure and E/M reimbursement, relative to 2014.*

https://www.hhs.gov/sites/default/files/pain-mgmt-best-practices-draft-final-report-05062019.pdf

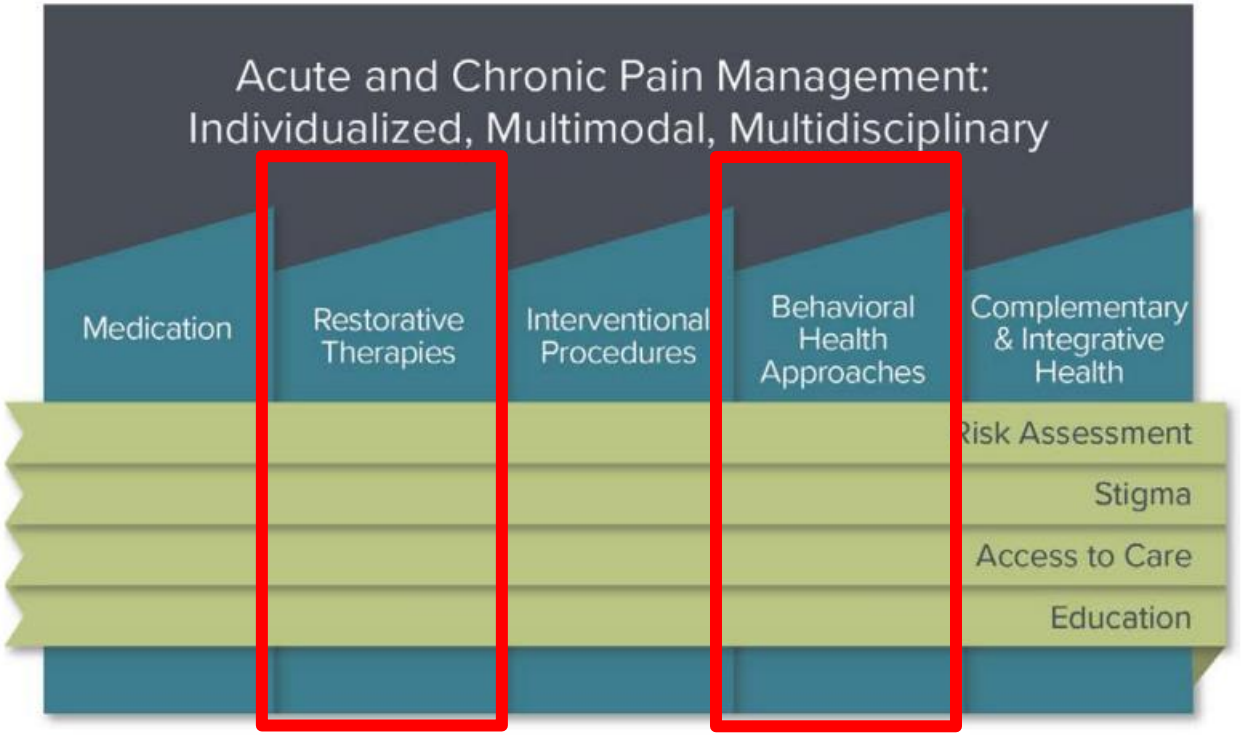
Summary

- Chronic pain limits activity and function
- Improving mobility slows chronic disease
- Non-pharmacologic and non-opioid management is first-line treatment
- Pharmacologic managements can be limited and ineffective
  - Utilize lowest-dose effective dose for pain relief to improve function
  - Opioid Management Toolbox
- Interventions limit the need for pharmacologic interventions or surgery
  - Direct, targeted
  - Diagnostic/therapeutic
  - Complex decision making

Chronic Pain Management

PAIN MANAGEMENT BEST PRACTICES
INTER-AGENCY TASK FORCE REPORT

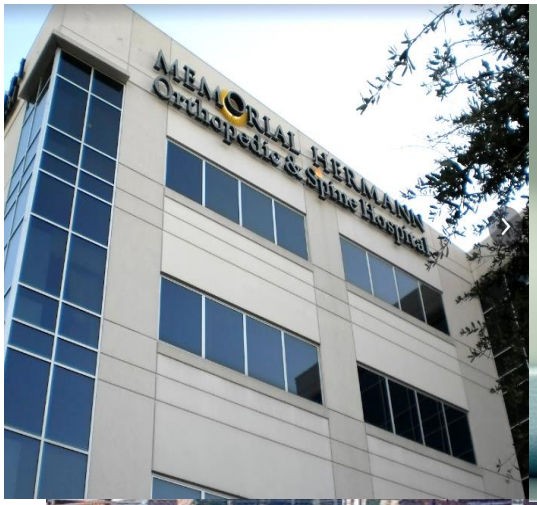
Updates, Gaps, Inconsistencies, and Recommendations



Adapted from (2019) Pain Management Best Practices Inter-Agency Task Force.

https://www.hhs.gov/sites/default/files/pain-mgmt-best-practices-draft-final-report-05062019.pdf

Thank you for your attention!



UTHealth
The University of Texas
Health Science Center at Houston

McGovern
Medical School

Physical Medicine and Rehabilitation
RESTORATION RECOVERY RE-INTEGRATION
med.uth.edu/pmr

TIRR MEMORIAL HERMANN
Rehabilitation & Research

Kemly Philip MD PhD MBE, FAAPMR

Assistant Professor

Division Chief Musculoskeletal Medicine & Interventional Pain

Dept. of Physical Medicine & Rehabilitation

Kemly.Philip@uth.tmc.edu