

Managing pain in adults



Pain remains a major problem, and opioids are being used less and less

Over 60 million U.S. adults report pain daily or on most days.¹

FIGURE 1. The toll of pain on patients and society remains high.^{2,3}

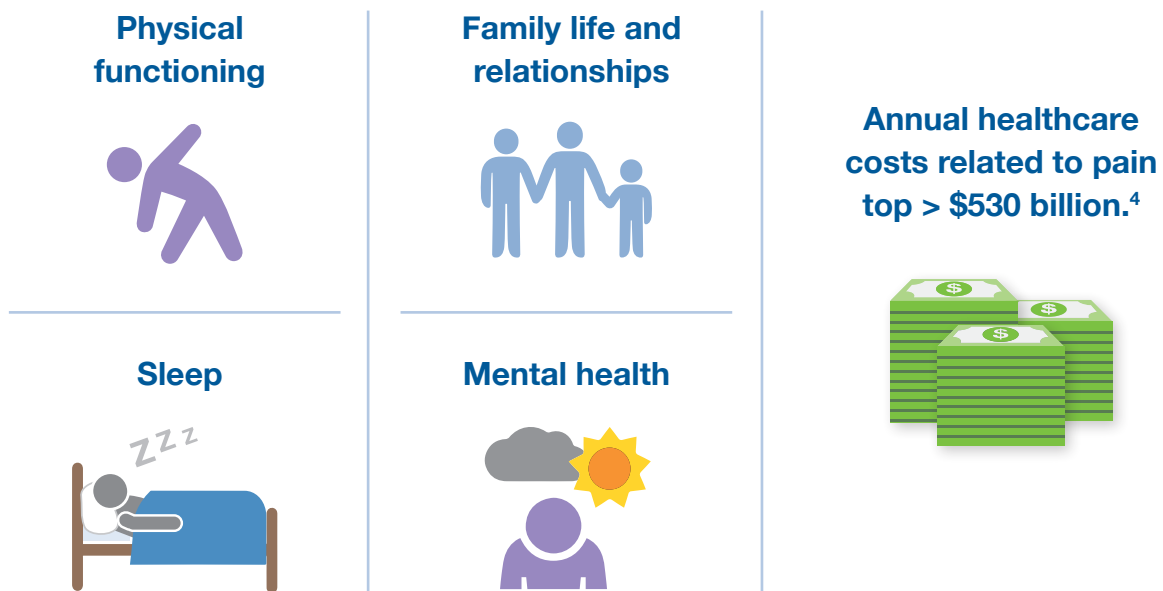
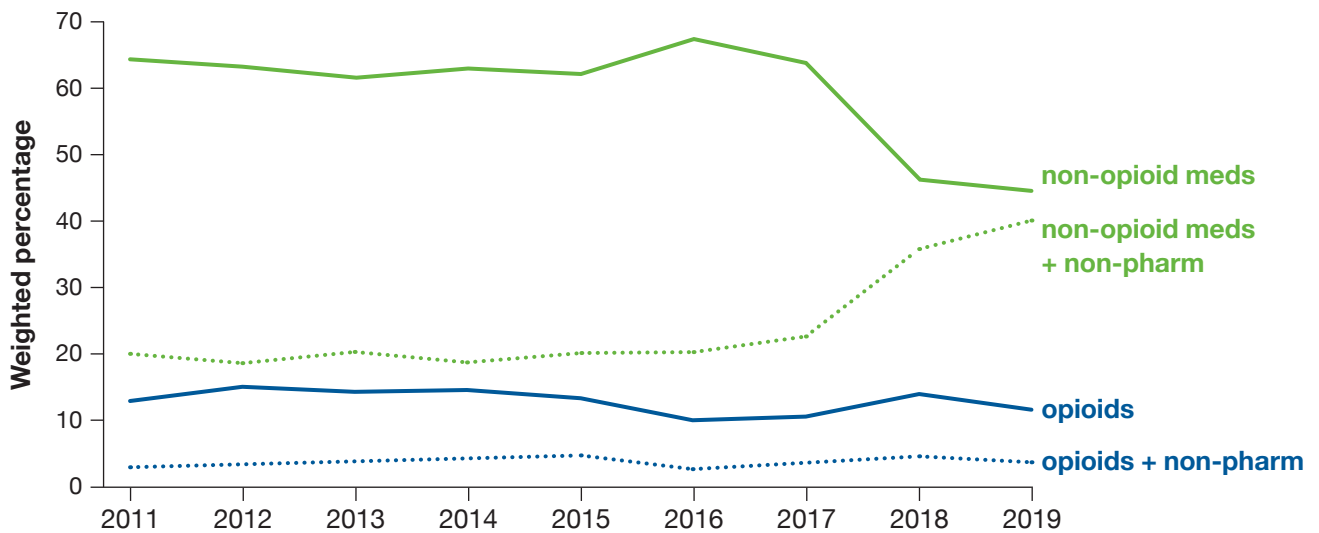


FIGURE 2. Increasingly, pain management strategies combine non-opioid pharmacologic and non-pharmacologic options for both chronic and acute pain.⁵

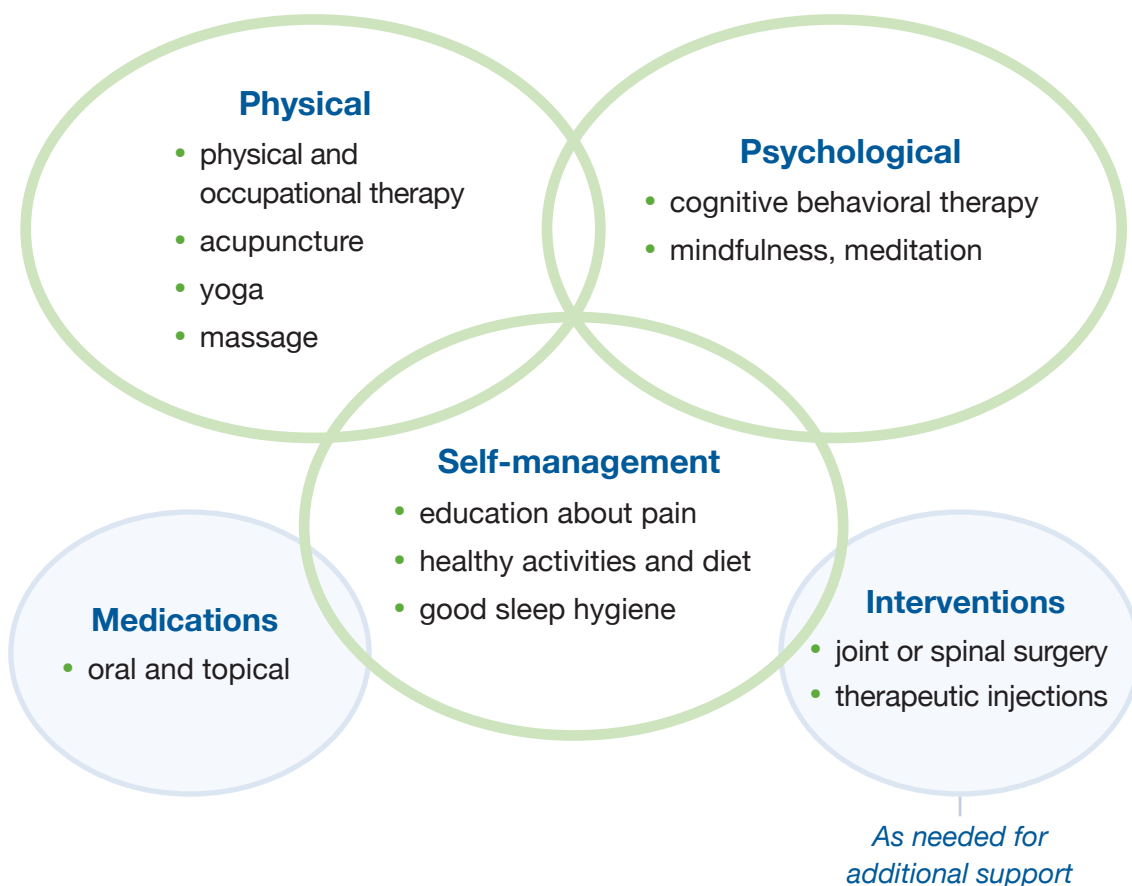


Data from the Medical Expenditure Panel Survey

Principles for managing pain

- ➔ Establish clear goals of treatment: focus on functional goals.
- ➔ Set reasonable expectations: treatment may alleviate but not eliminate all pain. It should help get patients back to activities they enjoy.
- ➔ Use a variety of modalities to achieve treatment goals.

FIGURE 3. Engage patients by combining different ways to improve function and alleviate pain.⁶



What the evidence shows about managing four common chronic pain syndromes

TABLE 1. Strength of the clinical evidence for medication and non-medication options

INTERVENTION	Osteoarthritis	Low back pain	Diabetic neuropathy	Fibromyalgia	
Non-drug options	exercise	●	●	—	●
	physical therapy	●	●	—	—
	tai chi	●	●	—	●
	weight loss	●	—	—	●
	yoga	●	●	—	○
	acupuncture	○	●	●	○
	massage	●	●	—	○
	TENS*	○	○	●	●
	cognitive behavioral therapy	○	●	—	●
	mindfulness	●	●	—	○
	self-management	●	●	—	○
Non-opioid drug options	acetaminophen	●	○	—	—
	NSAIDs—oral	●	●	—	—
	NSAIDs—topical	●	○	—	—
	duloxetine (Cymbalta, generics)	●	●	●	●
	tricyclic antidepressants (TCAs)	—	●	●	●
	pregabalin (Lyrica, Lyrica CR)	—	○	●	●
	gabapentin (Neurontin, generics)	—	○	●	●
	topical lidocaine (Lidoderm, generics)	○	—	○	—
cannabis/cannabinoids	—	—	●	○	
Opioids	tramadol (Ultram)	○	●	●	○
	buprenorphine (Belbuca, Butrans)	○	●	○	—
	other opioids	●	●	●	●

Risk/benefit: ● = favorable; ● = potentially favorable; ● = unfavorable; ○ = no clear benefit; — = insufficient data

*TENS: transcutaneous electrical nerve stimulation

Osteoarthritis

Exercise is one of the most effective options for managing OA.⁷

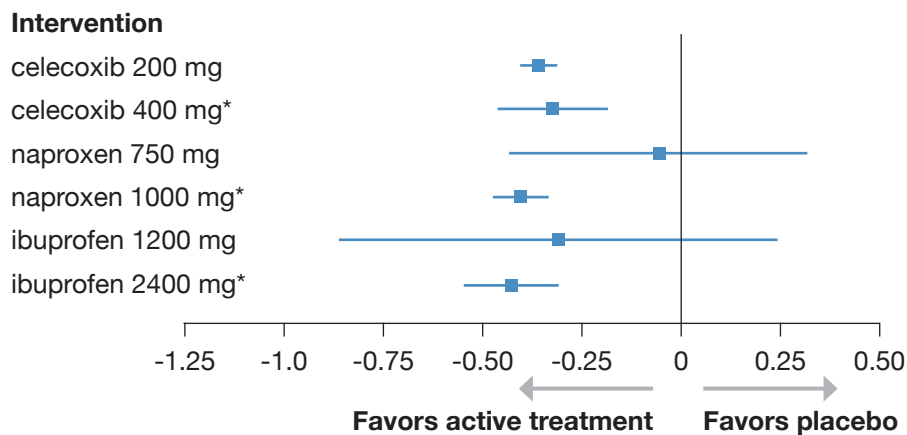
Tailor activity to the patient's interests and functional capabilities. Options include:



Group classes, individual activities, internet, or app-based training have all been effective at improving function and reducing pain in patients with OA.⁷⁻⁹

NSAIDs address the inflammatory component of OA.

FIGURE 4. Selective and non-selective NSAIDs are equally effective.¹⁰

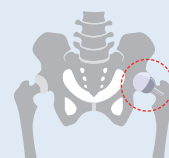


*Maximum approved daily dose

Topical NSAIDs are as effective for osteoarthritis pain and function as oral NSAIDs after 1 year of treatment,¹¹ with lower incidence of systemic effects like renal or gastrointestinal problems.



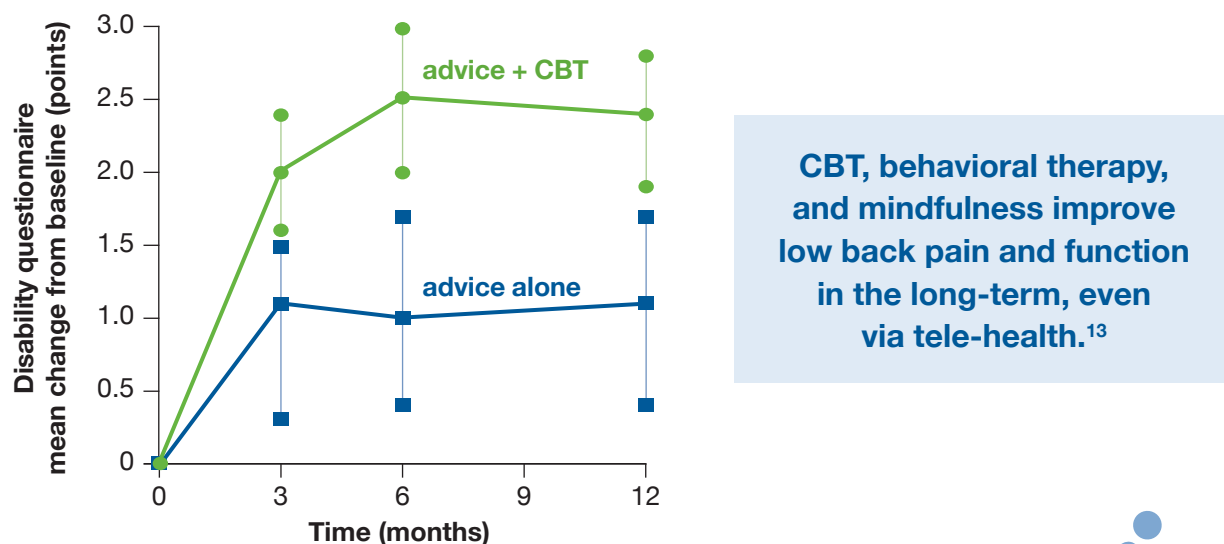
Joint replacement may be the most effective treatment in severe OA and can eliminate or reduce the need for daily drug therapy for pain.



Chronic low back pain

Psychological approaches provide benefit that lasts even after the intervention is completed.

FIGURE 5. Cognitive behavioral therapy (CBT) improved back pain disability scores vs. control groups during the 3-month intervention and through a 12-month follow-up.¹²

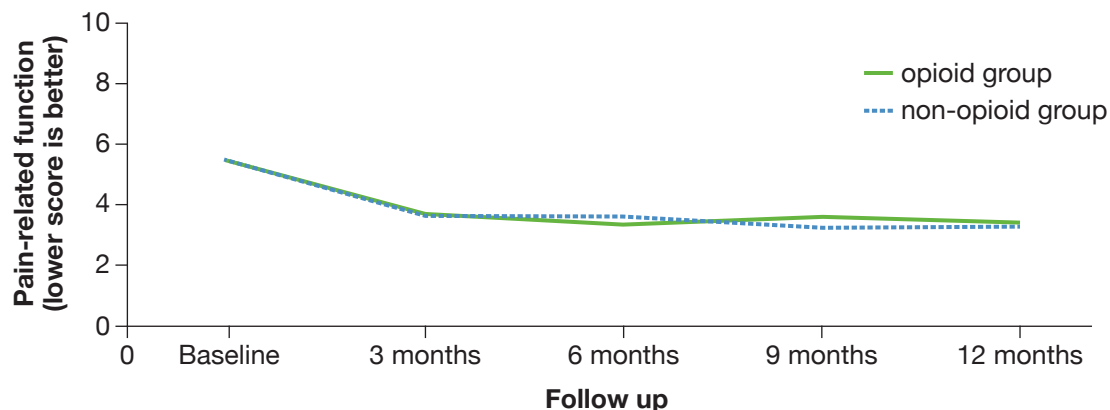


Spinal manipulation may provide pain relief and improve function within the first month.¹⁴



Non-opioid management options are as effective as opioids.

FIGURE 6. In the SPACE randomized controlled trial, function was nearly identical between the opioid and non-opioid medication group.¹⁵



Pain intensity scores were better in the non-opioid group than the opioid group (41% vs. 54%, respectively; $p=0.05$).

Diabetic neuropathy

Pharmacologic management is the mainstay of treatment for painful diabetic neuropathy.



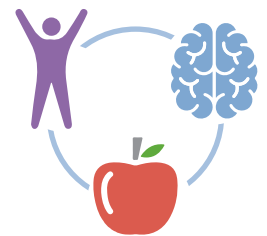
Compared to placebo, all of these classes reduced pain:¹⁶

- SNRIs (duloxetine, venlafaxine)
- gabapentin, pregabalin
- membrane stabilizers/anticonvulsants (e.g., carbamazepine, lamotrigine)
- TCAs (amitriptyline, nortriptyline)
- SNRI-opioids (tramadol)—but can cause physiologic dependence like other opioids

Fibromyalgia

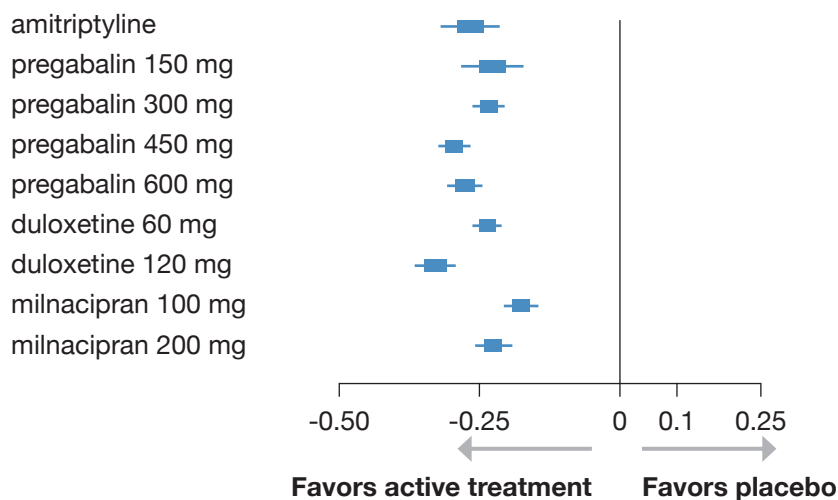
Mind and body approaches can help in fibromyalgia.

Engaging in exercise, maintaining a healthy weight, and utilizing psychological approaches like CBT were shown to positively impact function and pain.¹⁷



Many medication options work.

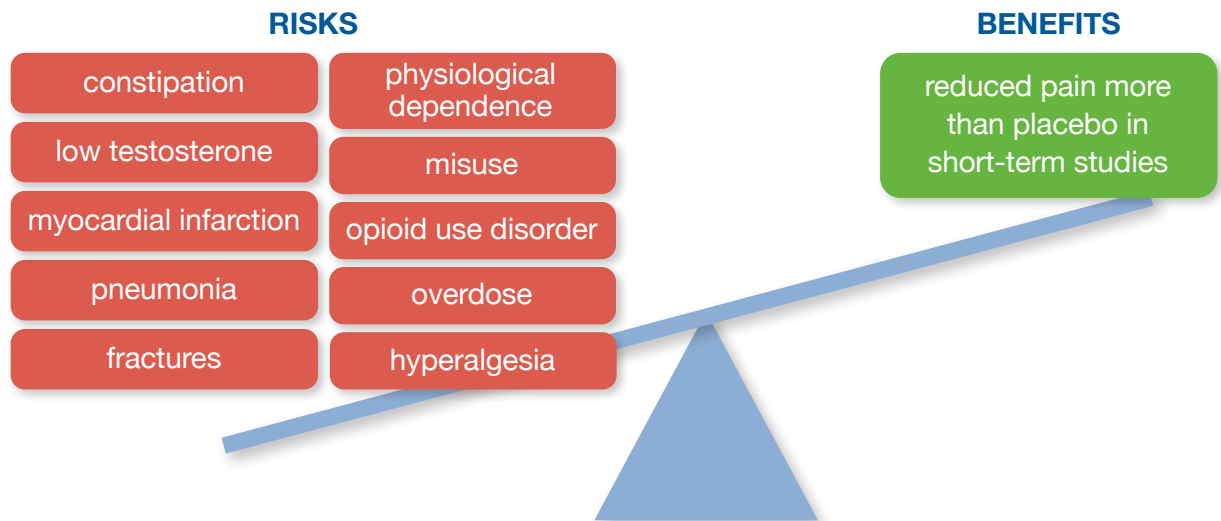
FIGURE 7. Compared to placebo, duloxetine, pregabalin, milnacipran, and amitriptyline are all effective for pain in fibromyalgia.¹⁸



Combining pregabalin and duloxetine provided modest additional pain relief compared to either alone, although the combination increased drowsiness.¹⁹

In rare circumstances, opioids may be needed for chronic pain

When deciding to initiate an opioid, assess the risks and benefits.



Before starting any opioid medication:²⁰

1. Set clear *functional* goals with the patient.

Explain that the goal is not eliminating all discomfort.

2. Establish an anticipated duration of opioid use.

For acute pain or severe pain episodes, use immediate-release medication formulations at the lowest possible opioid dose for a specific duration of time. Avoid initiating treatment with extended-release.

3. Document the treatment plan, including any plans for monitoring.

4. Review the risks of opioid use, especially if dose escalates.

5. If goals are not met, be prepared to taper off opioids and pursue other modes of analgesia.

6. Continue to optimize non-opioid treatment options, both medication and non-medication.

Managing patients on chronic opioids

➔ Check your state's Prescription Drug Monitoring Program.

- Clarify whether the patient is taking opioids prescribed by other clinicians.
- Verify if patients are using benzodiazepines, which place them at increased risk of adverse events.

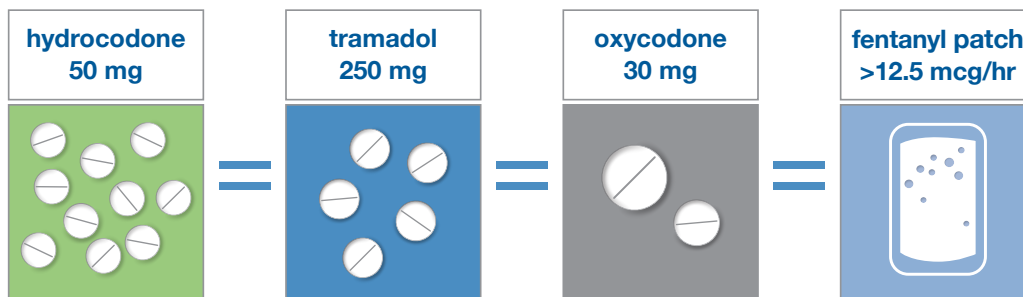
➔ Regularly re-evaluate opioid use.

- Ask patients about the four A's: analgesia, activity, adverse events, and aberrant behaviors.
- Weigh the benefits and risks of toxicology testing to assess for prescribed medications as well as other prescribed and non-prescribed controlled substances.

➔ Use caution when escalating doses above 50 morphine milligram equivalents (MME) per day.

Doses above 50 MME/day are met with limited benefit but increasing harm.

50 morphine milligram equivalents translates to:



Opioid dose calculator available at: https://qrco.de/MME_calc

➔ Recommend or prescribe naloxone to reduce overdose risk.

Prevent overdose death with naloxone (Narcan and generics). Recommend or co-prescribe it for patients taking opioids, especially those with risk factors. See more on page 13.

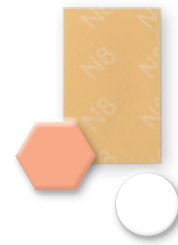
➔ Taper opioids when risks outweigh the benefit.

- Discuss the risks and benefits of opioid therapy at every visit.
- Enlist the patient in goal-setting and develop a collaborative plan to lower the opioid dose, if needed.
- Reduce the dose until benefit outweighs the risks of opioids, discontinuing if feasible.

If opioids are necessary, use one with a better safety profile

Buprenorphine

- Partial agonist with the favorable property of a ceiling effect for respiratory depression, but no ceiling effect for pain
 - pain relief similar to other opioids^{21,22}
 - can be used to treat pain in patients with and without opioid use disorder (OUD)
- Products FDA-approved for pain:
 - available as buccal (Belbuca) and transdermal product (Butrans)
 - dosed in micrograms
 - sublingual formulations can be used, but are not FDA-approved for chronic pain
- Cost may be a barrier



Tramadol

- Fewer opioid side effects (like respiratory depression) at maximum daily dose, but still has overdose and misuse potential^{23,24}
- May be combined with SSRI and SNRI medications at recommended doses, but be aware of drug interactions that increase the risk of serotonin syndrome²⁵⁻²⁷

Avoid combining **any** opioid with a respiratory depressant, such as a benzodiazepine.

Weighing cannabinoids vs. opioids for chronic pain

Talking about the pros and cons of cannabinoids with patients:

- Evidence suggests benefit in some chronic pain conditions, especially neuropathies.²⁸
- The most effective dose, frequency, route, and optimum THC/CBD ratio for benefit are not well known.²⁹
- Side effects are not well understood—can include neuropsychiatric and cognitive changes.
- Non-inhaled cannabinoid administration is best to minimize harm.
- A trusted or regulated source is preferred. Products at gas stations, vape shops, or convenience stores are not subject to regulation or quality control.³⁰
- If traveling, be aware of restrictions or prohibitions on use.

Taper opioids when risks outweigh benefits

These decisions should be individualized and patient-centered.^{20,31}



Go slow.

- Patients who have been taking opioids for a long time may require slower reduction. A 5-10% taper every month may be reasonable.
- Remind patients that returning to a higher dose increases their risk of overdose.



Personalize the plan and reassure patients you're still committed to addressing their pain.

- Add non-opioid, evidence-based treatment alternatives.
- Adjust the taper based on the patient's response.



Consult with experts as needed.

- Discuss concerns with specialists when required.



Address mental health needs.

- Engage psychosocial supports when possible to assist with tapering.
- Monitor for and manage emerging signs of anxiety and depression.



Encourage patients throughout the process.

- While pain may increase in the short term, patients who can reduce doses of opioids will have better function in the long term.
- Tell patients, "I'll stick by you through this."
 - Alleviate concern that reducing or stopping opioids is denying treatment.
 - Add in new modes to manage pain if needed as opioid dose decreases.
 - Provide support and manage pain along with other chronic conditions.
 - Treat any opioid withdrawal symptoms that emerge.



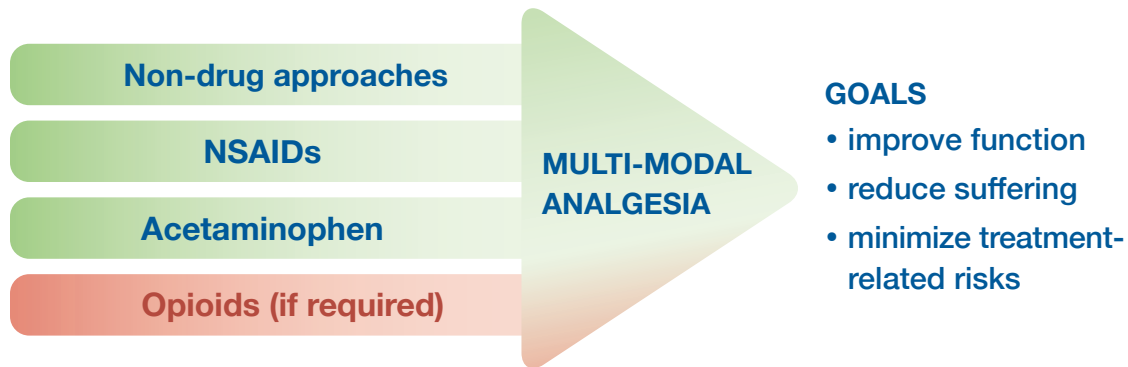
Abrupt discontinuation of long-term opioids can cause withdrawal symptoms and result in patient harm.

Manage acute pain with non-opioids first

1 Reassure patients about their prognosis.

When appropriate, remind them pain may improve on its own, with or without intervention.³²

2 Use a multi-modal approach.



3 Optimize treatment options with the best safety profile.

- In acute low back pain, an NSAID alone is as effective as adding an opioid or cyclobenzaprine to an NSAID regimen at one week.³³
- Combine non-opioid options before thinking about opioids. A combination of ibuprofen and acetaminophen is as effective at reducing many kinds of pain as opioids.³⁴

4 Reduce risk if an opioid is prescribed.

- **Prescribe a short course:** Use lowest dose and smallest quantities (e.g., 3 days).³⁵
- **Avoid co-prescribing with benzodiazepines.**
- **Use immediate-release opioids.**
- **Continue to optimize non-opioid treatments.**

5 Tips for prescribing for older adults.

- Start low, titrate slowly.
- Monitor for common side effects.
- Adjust treatment if renal dysfunction or hepatic impairment.
- Reduce polypharmacy by incorporating non-medication approaches.

30
days

CAUTION: opioid use > 30 days is likely to become long-term.²⁰

Reduce opioid overdose risk for patients and household members



Prescribe naloxone.

Prevent overdose death with naloxone. It is available as a nasal spray without a prescription. Higher dose nasal sprays and an auto-injector require a prescription.

Naloxone should be recommended for all at-risk patients taking opioids, including the following:²⁰

- opioid dose > 50 MME per day
- renal or hepatic dysfunction
- co-prescribed benzodiazepines or other sedatives
- tobacco use, COPD, asthma, or sleep apnea
- history of substance use disorder or overdose
- loss of tolerance from recent abstinence (as from recent dose reduction or during incarceration)



Discuss safe storage.

- Remind patients to keep opioids out of reach of others.
- Use secure storage locations when possible, such as a lockbox.



Encourage disposal of unused opioids.

Reducing opioids in the community reduces the risk of misuse and overdose. Options for disposing of left-over medications include:

- safe medication disposal boxes
- take back events
- activated charcoal bag

While the FDA recommends flushing opioids, the Environmental Protection Agency does not encourage this due to concerns about the water supply.

Key points

- **Work with the patient to formulate a pain management plan** that includes clear functional goals and realistic expectations.
- **Select evidence-based treatments (non-drug and/or non-opioid)** based upon the underlying diagnosis.
 - Begin with evidence-based, non-drug options, such as cognitive behavioral therapy, exercise, massage, acupuncture, or tai chi, as appropriate.
 - Maximize non-opioid drug options, such as acetaminophen, NSAIDs, SNRIs, or gabapentinoids.
 - Use opioids only when expected benefits outweigh the risks.
- **For patients taking opioids chronically, discuss the risks at each visit.** Carefully monitor opioid use, related adverse events (mental status changes, constipation, sexual dysfunction), and evidence of dependence or misuse.
- **Use caution when escalating the dose above 50 mg MME per day,** which increases the risk of overdose or death.
- **Taper opioids** whenever risks outweigh the benefits.
- **Recommend naloxone** for all patients or household members with risk factors for overdose.

Visit AlosaHealth.org/Opioids

for links to a comprehensive evidence document and other resources.



For CME credit, visit qrco.de/Pain_CME
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References:

- (1) Zajacova A, Grol-Prokopczyk H, Nahin RL. Pain among US adults before, during, and after the COVID-19 pandemic: a study using the 2019 to 2023 National Health Interview Survey. *Pain*. 2026;167(1):142-149. (2) Cohen SP, Vase L, Hooten WM. Chronic pain: an update on burden, best practices, and new advances. *Lancet*. 2021;397(10289):2082-2097. (3) De La Rosa JS, Brady BR, Ibrahim MM, Herder KE, Wallace JS, Padilla AR, Vanderah TW. Co-occurrence of chronic pain and anxiety/depression symptoms in U.S. adults: prevalence, functional impacts, and opportunities. *Pain*. 2024;165(3):666-673. (4) Guy GP Jr, Miller GF, Legha JK, Rikard SM, Strahan AE, Mikosz C, Florence CS. Economic Costs of Chronic Pain—United States, 2021. *Med Care*. 2025;63(9):679-685. (5) Pritchard KT, Baillargeon J, Lee W, et al. Trends in the Use of Opioids vs Nonpharmacologic Treatments in Adults With Pain, 2011-2019. *JAMA Netw Open*. 2022;5(11):e2240612. (6) Flynn DM. Chronic Musculoskeletal Pain: Nonpharmacologic, Noninvasive Treatments. *Am Fam Physician*. 2020;102(8):465-477. (7) Kolasinski SL, Neogi T, Hochberg MC, et al. 2019 American College of Rheumatology/Arthritis Foundation Guideline for the Management of Osteoarthritis of the Hand, Hip, and Knee. *Arthritis Rheumatol*. 2020;72(2):220-233. (8) Gohir SA, Eek F, Kelly A, et al. Effectiveness of Internet-Based Exercises Aimed at Treating Knee Osteoarthritis: The iBEAT-OA Randomized Clinical Trial. *JAMA Netw Open*. 2021;4(2):e210012. (9) Nelligan RK, Hinman RS, Kasza J, et al. Effects of a Self-directed Web-Based Strengthening Exercise and Physical Activity Program Supported by Automated Text Messages for People With Knee Osteoarthritis: A Randomized Clinical Trial. *JAMA Intern Med*. 2021;181(6):776-785. (10) da Costa BR, Reichenbach S, Keller N, et al. Effectiveness of non-steroidal anti-inflammatory drugs for the treatment of pain in knee and hip osteoarthritis: a network meta-analysis. *Lancet*. 2017;390(10090):e21-e33. (11) Underwood M, Ashby D, Cross P, et al. Advice to use topical or oral ibuprofen for chronic knee pain in older people: randomised controlled trial and patient preference study. *Bmj*. 2008;336(7636):138-42. (12) Lamb SE, Hansen Z, Lall R, et al. Group cognitive behavioural treatment for low-back pain in primary care: a randomised controlled trial and cost-effectiveness analysis. *Lancet*. 2010;375(9718):916-23. (13) Day MA, Ciol MA, Mendoza ME, et al. The effects of telehealth-delivered mindfulness meditation, cognitive therapy, and behavioral activation for chronic low back pain: a randomized clinical trial. *BMC Med*. 2024;22(1):156. (14) de Zoete A, Innocenti T, Petrozzi MJ, et al. Spinal manipulative therapy for adults with chronic low back pain. *Cochrane Database Syst Rev*. 2026;1(1):CD008112. (15) Krebs EE, Gravely A, Nugent S, et al. Effect of Opioid vs Nonopioid Medications on Pain-Related Function in Patients With Chronic Back Pain or Hip or Knee Osteoarthritis Pain: The SPACE Randomized Clinical Trial. *JAMA*. 2018;319(9):872-882. (16) Price R, Smith D, Franklin G, et al. Oral and Topical Treatment of Painful Diabetic Polyneuropathy: Practice Guideline Update Summary: Report of the AAN Guideline Subcommittee. *Neurology*. 2022;98(1):31-43. (17) Bair MJ, Krebs EE. Fibromyalgia. *Ann Intern Med*. 2020;172(5):ltc33-itc48. (18) Farag HM, Yunusa I, Goswami H, et al. Comparison of Amitriptyline and US Food and Drug Administration-Approved Treatments for Fibromyalgia: A Systematic Review and Network Meta-analysis. *JAMA Netw Open*. 2022;5(5):e2212939. (19) Gilron I, Chaparro LE, Tu D, et al. Combination of pregabalin with duloxetine for fibromyalgia: a randomized controlled trial. *Pain*. 2016;157(7):1532-40. (20) Dowell D, Ragan KR, Jones CM, et al. CDC Clinical Practice Guideline for Prescribing Opioids for Pain—United States, 2022. *MMWR Recomm Rep*. 2022;71(3):1-95. (21) Boya C, Bansal D, Kanakagiri S, Ghai B. Efficacy and Safety of Opioid Analgesics for the Management of Chronic Low Back Pain: An Evidence from Bayesian Network Meta-Analysis. *Pain Physician*. 2021;24(1):73-82. (22) Pergolizzi JV, Jr., Raffa RB. Safety And Efficacy Of The Unique Opioid Buprenorphine For The Treatment Of Chronic Pain. *J Pain Res*. 2019;12:3299-3317. (23) Substance Abuse and Mental Health Services Administration. 2024 NSDUH detailed tables. Accessed Feb 26, 2026, samhsa.gov/data/report/2024-nsduh-detailed-tables (24) Ryan NM, Isbister GK. Tramadol overdose causes seizures and respiratory depression but serotonin toxicity appears unlikely. *Clin Toxicol (Phila)*. 2015;53(6):545-50. (25) Hassamal S, Miotto K, Dale W, Danovitch I. Tramadol: Understanding the Risk of Serotonin Syndrome and Seizures. *Am J Med*. 2018;131(11):1382.e1-1382.e6. (26) Nelson EM, Philbrick AM. Avoiding serotonin syndrome: the nature of the interaction between tramadol and selective serotonin reuptake inhibitors. *Ann Pharmacother*. 2012;46(12):1712-6. (27) Park SH, Wackernah RC, Stimmel GL. Serotonin syndrome: is it a reason to avoid the use of tramadol with antidepressants? *J Pharm Pract*. 2014;27(1):71-8. (28) Whiting PF, Wolff RF, Deshpande S, et al. Cannabinoids for Medical Use: A Systematic Review and Meta-analysis. *JAMA*. 2015;313(24):2456-2473. (29) National Academies of Sciences, Engineering, and Medicine, et al. *The Health Effects of Cannabis and Cannabinoids: The Current State of Evidence and Recommendations for Research*. Washington (DC): National Academies Press (US); 2017. (30) Harlow AF, Leventhal AM, Barrington-Trimis JL. Closing the Loophole on Hemp-Derived Cannabis Products: A Public Health Priority. *JAMA*. 2022;328(20):2007-2008. (31) Dowell D, Ragan KR, Jones CM, et al. Prescribing Opioids for Pain—The New CDC Clinical Practice Guideline. *N Engl J Med*. 2022;387(22):2011-2013. (32) Pengel LH, Herbert RD, Maher CG, Refshauge KM. Acute low back pain: systematic review of its prognosis. *Bmj*. 2003;327(7410):323. (33) Friedman BW, Dym AA, Davitt M, et al. Naproxen With Cyclobenzaprine, Oxycodone/Acetaminophen, or Placebo for Treating Acute Low Back Pain: A Randomized Clinical Trial. *JAMA*. 2015;314(15):1572-80. (34) Chang AK, Bijur PE, Esses D, et al. Effect of a Single Dose of Oral Opioid and Nonopioid Analgesics on Acute Extremity Pain in the Emergency Department: A Randomized Clinical Trial. *JAMA*. 2017;318(17):1661-1667. (35) Mundkur ML, Franklin JM, Abdia Y, et al. Days' Supply of Initial Opioid Analgesic Prescriptions and Additional Fills for Acute Pain Conditions Treated in the Primary Care Setting—United States, 2014. *MMWR Morb Mortal Wkly Rep*. 2019;68(6):140-143.

About this publication

These are general recommendations only; specific medical decisions should be made by the treating clinician based on an individual patient's clinical condition. More detailed information on this topic is provided in a longer evidence document at AlosaHealth.org.



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