Opioid Analgesic Table

&

Pain Management Guidance

2022

PREVIEW VERSION

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LeadingAge® Ohio

Opioid Comparison Table

Medication	Equianalgesic Doses (mg)			Formulations	Comments
	IV/SQ/IM	PO	PR		
Morphine C-II	10	30	30	IR: tabs, soln, supps, injectable ER: tabs, caps	No ADF available
Hydrocodone C-II	NA	30	30	IR: tabs, soln ER: tabs, caps	ADF: 24H ER tabs IR: only available in combination with acetaminophen or ibuprofen
Hydromorphone C-II	1.5	7.5	7.5	IR: tabs, soln, supps, injectable ER: tabs	No ADF available
Oxycodone C-II	NA	20	20	IR: tabs, soln ER: tabs, caps	IR: also available with acetaminophen, aspirin, or ibuprofen ADF: ER tabs, caps
Oxymorphone C-II	NA	10	No data	IR: tabs ER: tabs	No ADF available Administer on empty stomach (1 hour before or 2 hours after a meal)
Tapentadol C-II	NA	100	No data	IR: tabs ER: tabs	No ADF available Inhibits norepinephrine reuptake Max daily dose: 600mg
Tramadol C-IV	NA	300	No data	IR: tabs ER: tabs, caps	No ADF available IR: also available with acetaminophen or celecoxib Inhibits norepinephrine & serotonin reuptake Max daily dose: 400mg
Buprenorphine C-III	0.3	Transdermal to PO 5mcg/H ≈ OME 10mg/24H 7.5mcg/H ≈ OME 15mg/24H 10mcg/H ≈ OME 20mg/24H 15mcg/H ≈ OME 30mg/24H 20mcg/H ≈ OME 40mg/24H		IR: SL tabs, film, injectable ER: transdermal, buccal film, implant, SQ depot	*Approved for pain:* IR: injection ER: transdermal, buccal film *Approved for opioid-use disorder:* IR: SL tabs, film +/- naloxone ER: implant, SQ depot Additional buprenorphine information
Fentanyl C-II	0.1	Transdermal to PO 12mcg/H ≈ OME 25mg/24H 25mcg/H ≈ OME 50mg/24H 37.5mcg/H ≈ OME 75mg/24H 50mcg/H ≈ OME 100mg/24H 75mcg/H ≈ OME 150mg/24H 100mcg/H ≈ OME 200mg/24H		IR: injectable, transmucosal – spray, lozenge, tabs ER: transdermal	IV/SQ ratio is for fentanyl bolus; for continuous infusion: 4 mg/hour parenteral morphine as approximately equivalent to 100 mcg/hour parenteral fentanyl. TDF also available: 62.5mcg/H, 87.5mcg/H Additional fentanyl information

Table Notes

1	Always individualize therapy based on patient-specific characteristics. See also Opioid Selection & Dosing in Liver or Renal Impairment table. Opioid dose comparisons are based on available clinical literature, often based on single-dose studies. Opioid conversions may differ with continuous, chronic dosing.
2	Decrease initial dose and monitor closely for adverse effects in patients with renal insufficiency. See additional information on Opioid Selection & Dosing in Liver or Renal Impairment.
3	ER includes sustained, controlled, extended, or otherwise modified release preparations designed to release the opioid over a prolonged time period (8-24 hours). Never crush or chew ER opioids.
4	ER opioids are for scheduled use only. Do not order ER opioids for "as needed" (PRN) use.
5	Abuse-deterrent formulations (ADF) - See FDA for more information.
6	All opioids are included in the Opioid Analgesics Risk Evaluation & Mitigation Strategy (REMS) program. Review FDA requirements, access REMS-compliant CE, medication guides, and information for healthcare professionals and patients.

Oral Morphine Equivalent (OME) to Methadone Conversion Method

For experienced prescribers only. Consult a palliative care or pain specialist for assistance.

OME	Ratio
< 100	4:1
100-300	6:1
300-600	10:1
600-1000	12:1
>1000	20:1

Methadone

IV/SQ	PO/PR
1 mg	2 mg

- Conversion ratio provided is based on methadone package insert for pain management in opioid-tolerant patients only. Refer to methadone monograph for additional information on drug interactions
- Ratio estimates total daily dose of methadone based on patient's 24 hour OME use
  - Closely monitored patients in hospice, palliative care, or IP setting - do not initiate methadone above 60mg total daily dose, even if ratio indicates otherwise. Optimize adjuvant non-opioid pain medications and evaluate methadone benefit and tolerability before titrating > 60mg/day.
  - When converting from non-methadone opioid to methadone, consider a methadone 30mg total daily dose for ambulatory care pain management. May titrate > 30mg/day when methadone tolerability determined.
  - Divide methadone total daily dose by 2 for every 12H dosing or 3 for every 8H dosing
  - Always round methadone dose *down* to appropriate tablet strength
- Inter-patient variability complicates dosing calculations
  - Multiple clinically significant drug interactions; review patient's drug profile
  - Use more conservative dosing for elderly or debilitated patients
- Maintain daily contact with patient for at least 5 days after methadone initiation
- Methadone may not reach steady state for 3-14 days
- Risk of QT prolongation especially w/concomitant use of other QT prolonging drugs
- Risk of overdose: never use the ratio to convert from methadone to another opioid
- Refer to Reference List for additional information on methadone conversion methods

Buprenorphine Products for Pain Management

Initial Dosing for Pain	
OME: BUP ER Buccal Film	
< 30 mg	75mcg BID
30 – 89 mg	150mcg BID
90-160 mg	300mcg BID
OME > 160 mg – do not use	
MAX BUP dose: 900 mcg BID	
OME: BUP Transdermal	
< 30 mg	5 mcg/HR
30 – 80 mg	10 mcg/HR
MAX BUP dose: 20 mcg/HR	

For experienced prescribers only. Consult a palliative care or pain specialist for assistance.

- BUP is a partial opioid agonist. BUP may have a ceiling effect for both analgesia and respiratory depression. Patients on BUP may not be tolerant to the respiratory depressant effect of full-agonist opioids.
- For opioid-naïve patients with chronic pain severe enough to require around-the-clock, long-term opioid treatment, may initiate BUP transdermal 5mcg/HR x 7days, or BUP buccal 75mcg BID
- If converting from BUP ER buccal film or BUP transdermal patch, start conservatively. Consider using IR opioid only. Examples: BUP-TD 5mcg/HR remove patch in evening and initiate hydromorphone 2mg Q4H PRN on following morning. If BUP-TD 10mcg/HD, remove patch in evening and initiate MSER 15mg PO Q12H on following morning with morphine 5mg Q4H PRN. Evaluate pain control at day 3 and day 5; titrate if needed.
- For patients on BUP ER products for pain, if a short-acting opioid is needed for breakthrough pain, consider starting at 10% of the daily OME and titrate short-acting opioid PRN cautiously. Higher than anticipated PRN dose may be needed due to the BUP antagonizing effect on other opioids.
- BUP products with FDA-approval for pain management include transdermal system (Butrans), buccal ER film (Belbuca), and IR injection. X-waiver IS NOT required to prescribe BUP for pain management.
- Risk of QT prolongation especially w/concomitant use of other QT prolonging drugs
- X-waiver IS required to prescribe BUP for opioid use disorder (OUD). Additional training and information on medication-assisted treatment (MAT) available at SAMHSA.
- BUP for pain management is included Opioid Analgesics REMS along with other opioid analgesics.
- Link to prescribing information: BELBUCA (ER buccal film) or BUTRANS (transdermal patch)

Transmucosal Immediate Release Fentanyl (TIRF) Products

For experienced prescribers only. Consult a palliative care or pain specialist for assistance.

TIRF	Dosages (mcg)	BA
Buccal (Fentora)	100, 200, 400, 600, 800	65%
Lozenge (Actiq)	200, 400, 600, 800, 1200, 1600	50%
Nasal (Lazanda)	100, 300, 400	75%
SL spray (Subsys)	100, 200, 400, 600, 800, 1200, 1600	75%

- **TIRF products are NOT equivalent on a mcg per mcg basis due to significant differences in TIRF bioavailability (BA)**. For example, buccal tablets 100mcg are approximately equivalent to lozenges 200mcg. Nasal and SL sprays have highest BA and fastest onset of action.
- *Opioid-tolerant patients only.* Transition from TIRF products to other IR opioids conservatively; titrate cautiously to adequate pain relief. Evaluate daily OME requirements for pain control and use about 10% of total daily dose as-needed for breakthrough pain.
- If converting to TIRF products from other IR opioids, always use the initial dose recommendations in the TIRF product chart or individual TIRF product prescribing information. Generally, initiate all patients at the lowest available dosage of selected TIRF (e.g., 100mcg or 200mcg), regardless of prior opioid use.
- TIRF access is restricted and enrollment in the TIRF REMS program is required for outpatients, inpatient & outpatient pharmacies, prescribers for outpatient use. TIRF REMS site includes links to patient Med Guides and complete prescribing information for each TIRF product.

Practical Opioid Pharmacokinetics by Route of Administration*

Route	Notes
Oral	• Preferred route of administration; generally, most cost effective. • Expect onset of analgesia in about 60 minutes with peak effect within 2 hours. • Duration of analgesia: IR 4 hours; ER 8 - 24 hours, depending on opioid formulation. • Titrate scheduled opioids no more frequently than 3 times the expected duration of analgesia (e.g., titrate a 12H formulation no more frequently than every 36 hours).
Intravenous	• All opioids except fentanyl or buprenorphine, expect onset of analgesia within 5 minutes, peak effect within 15 minutes; duration of analgesia about 4 hours. Titrate no more frequently than every 15 minutes for bolus dosing and 8 hours for continuous infusion. • Fentanyl: expect onset of analgesia within 2 minutes; peak effect within 6 minutes; duration of analgesia about 1 hour. Titrate no more frequently than every 6 minutes for bolus dosing and 4 hours for continuous infusion. • Buprenorphine: deep IM injection preferred; if given IV, push slowly over at least 2-3 minutes; onset of analgesia about 15 minutes; peak effect about 60 minutes; duration of analgesia about 6 hours
Rectal	• Similar to oral for opioid bioavailability, onset and duration of analgesia • Not all opioids have published literature to support rectal administration. Initiate rectal administration with dosing as calculated for oral administration. Monitor patient for both pain control and opioid side effects. • Avoid abuse-deterrent formulations (ADF). No data to support rectal route and ADF may prevent rectal absorption. • For immediate-release opioids or methadone only, consider use of rectal medication administration device (RMAD; Macy Catheter®) for increased patient comfort and easier caregiver rectal administration. Access information on RMAD device.
Subcutaneous	• Expect onset of analgesia within 20 minutes; duration of analgesia about 4 hours. • Titrate no more frequently than every 20 minutes for bolus dosing and 8 hours for continuous infusion. • Off-label route of administration; acceptable for fentanyl, hydromorphone, methadone, morphine
Sublingual / Buccal / Transmucosal	• All opioids except fentanyl or buprenorphine, onset of analgesia within 30 minutes; duration of analgesia about 4 hours • Fentanyl: expect onset of analgesia for transmucosal products in 15 minutes; patient must wait at least 4 hours before treating another pain episode. • Buprenorphine: sublingual products peak effect about 30-60 minutes; buccal product (extended-release) with peak effect at about 3 hours and duration of analgesia about 12 hours
Transdermal	• Fentanyl: expect onset of analgesia within 12 hours; peak effect within 72 hours; duration of analgesia 72 hours. Titrate transdermal fentanyl (TDF) no more frequently than every 2 patch cycles (6 days); expect about 18-24 hours after patch removal for fentanyl levels to decrease by 50%. • Buprenorphine: expect onset of analgesia within 12 hours; peak effect in about 3 days; duration of analgesia 7 days. Titrate buprenorphine (TDB) no more frequently than every 7 days.

**does not apply to methadone; see Methadone dosing information*

Opioid Selection & Dosing in Liver or Renal Impairment

Organ	Preferred	Consider	Avoid	Comments
Liver Impairment	Hydromorphone Morphine Methadone Oxymorphone	Oxycodone Fentanyl (IV/SQ)	Codeine Hydrocodone Meperidine Tapentadol Tramadol Fentanyl (TDF)	• *For all opioids:* consider reducing initial dose by 25-50% and extended dosing interval for patients with liver or renal impairment • *Codeine:* requires **liver metabolism** to morphine to provide pain relief • *Hydrocodone:* requires **liver metabolism** to hydromorphone, norhydrocodone to provide pain relief • *Meperidine:* may cause excess sedation and respiratory depression in patients with **cirrhosis;** increased seizure risk in **renal** impairment • *Oxycodone:* preferred IR for opioid-naïve patients with **ESRD.** Dose conservatively (e.g. oxycodone 2.5mg PO Q8H PRN), due to risk of active oxycodone metabolites accumulation. Titrate gradually based on patient response with close monitoring for sedation/CNS effects. • *Morphine:* cautious use of lower doses may be acceptable depending on patient need even in presence of **renal** impairment
Organ	**Preferred**	**Consider**	**Avoid**	
Renal Impairment	Fentanyl Methadone Oxycodone Oxymorphone	Hydromorphone Hydrocodone	Codeine Meperidine Morphine Tapentadol Tramadol	

Opioid-Induced Neurotoxicity

Risk Factors	Signs & Symptoms
Neurotoxicity can occur with ALL opioids but is most common with morphine and hydromorphone • morphine > hydromorphone > oxycodone > fentanyl ≈ methadone • renal insufficiency > normal renal function • higher dose opioids > lower dose opioids • dose and duration of opioid use Precipitating factors: dehydration, renal insufficiency, advanced age, underlying delirium, other psychoactive medications (benzodiazepines)	• Hyperalgesia – increased sensitivity to painful stimuli • Allodynia – pain from stimuli that are not normally painful • New onset myoclonus, seizures, delirium, hallucinations • Unrelieved or worsening pain and discomfort despite reasonable increases in opioid doses • Rapidly escalating opioid dose required to control pain with pain relief short-lived or no pain relief • Pain "doesn't make sense" – not consistent with recent pattern or known disease

Managing Opioid-Induced Neurotoxicity

Rotate opioid to a structurally dissimilar opioid with differing receptor affinity profiles and a lower risk for neurotoxicity. Methadone is frequently selected for opioid rotation. Cautious use advised for patients with cardiac arrhythmias due to risk of QTc interval prolongation with methadone.

- Manage symptoms of neurotoxicity - treat delirium (e.g., haloperidol or an alternate antipsychotic). Behavioral excitation will resolve over hours to days depending on the patient's ability to clear the causative opioid metabolites.
- Treat neuromuscular excitation and myoclonus with a benzodiazepine, baclofen, or barbiturate.
- If possible, hydrate patient to facilitate elimination of opioid metabolites.
- Consider opioid-sparing adjuvants to reduce reliance on opioids for pain control

Management of Opioid Adverse Effects

Adverse Effect	Recommendation	Comments
Constipation	**Stimulant** Bisacodyl, Senna **Osmotic** PEG3350 (Miralax) **PAMORA** Methylnaltrexone (Relistor) Naloxegol (Movantik) Naldemedine (Symproic)	• Opioid-induced constipation (OIC) usually requires scheduled stimulant laxative use • If senna is insufficient, add PEG3350 daily and bisacodyl supps PRN • Reserve methylnaltrexone for OIC refractory to standard OTC laxatives • Docusate (Colace) and fiber products are not effective for OIC • If using peripherally acting mu-opioid receptor antagonists (PAMORA) for OIC, counsel and monitor the patient/caregiver on signs/symptoms of opioid withdrawal
Nausea	**Prokinetic** Metoclopramide (Reglan) **5-HT3 Antagonist** Ondansetron (Zofran) **Antipsychotic** Haloperidol (Haldol) Olanzapine (Zyprexa) **Antihistamine** Promethazine (Phenergan)	• Metoclopramide may improve nausea with gastroparesis or slow gastric emptying rate • Metoclopramide and haloperidol provide anti-emetic activity with minimal sedation • If routine use of antipsychotic is needed to control nausea, monitor for dystonia and other abnormal movements especially in elderly • Prochlorperazine (Compazine) and promethazine (Phenergan) are commercially available as suppositories. Haloperidol, ondansetron, and olanzapine tablets may be given rectally. • Avoid haloperidol, prochlorperazine, and metoclopramide in patients with Parkinson or Lewy Body disease; consider promethazine as an alternative
Pruritus	**Topical** Camphor-menthol (Sarna) **Antihistamine** Diphenhydramine (Benadryl) Doxepin	• Pruritus is more commonly associated with morphine, codeine, meperidine. Consider opioid rotation to a higher potency opioid (fentanyl, hydromorphone, methadone) • Caused by histamine release; not immune-related or indicative of an opioid allergy unless rash, hives are also present • Consider loratadine (Claritin) if less-sedating antihistamine is preferred
Respiratory depression	Hold opioid Administer naloxone Reduce opioid dose if restarting Increased monitoring	• Naloxone may be administered by IM, SQ, IV, or intranasal • In persons with progressive illness, dilute naloxone and titrate to safe respiratory rate (RR > 10 bpm) to avoid reversal of analgesia • Continuous infusion or repeated naloxone dose may be necessary with ER opioids • Reinforce patient monitoring and adherence to prescribed opioid regimen with caregiver
Sedation	Reduce opioid dose Increased monitoring	• Determine if sedation from progressive illness approaching end of life (EOL) vs opioid use • If not hospice/EOL, hold opioid and reduce any subsequent opioid dose by 25-50% • If not hospice/EOL, hold other CNS depressants (eg, benzodiazepines, gabapentinoids, hypnotics) until patient is arousable/alert • Reinforce patient monitoring and adherence to prescribed opioid regimen with caregiver

Principles for Using Opioids Safely & Effectively

Patient Pain Assessment

- Perform a comprehensive assessment including patient self-report of pain descriptors, documentation of pain syndrome or cause, and impact of pain on patient's level of function. Include an assessment of non-physical source of pain – psychosocial, spiritual concerns as well as discussing the impact of pain on the patient's quality of life and daily functional ability.
- Select analgesic medication based on pain severity, pain type (inflammatory, neuropathic, acute, chronic, etc) and patient preference/tolerability.
- Reassess patient response to medication, pain control, and functional status after initiation of medication and at regular intervals based on patient condition (daily until stable; weekly with progressive illness; monthly for chronic, stable pain).
- Use pain assessment tools appropriate to each patient's needs. Examples: PQRSTU, PAIN-AD, FACES
- Establish patient and provider treatment goals, expectations, and responsibilities for pain therapy.

Patient Opioid Risk Assessment

- If an opioid will likely be needed for pain management, follow universal precautions approach to opioid use risk assessment
- Assess the 4 As: Analgesia, Activity, Adverse effects, Aberrant behavior
- Use a standardized risk assessment tool for all patients at baseline and periodically thereafter. Do not wait for a concern to arise.
- Opioid Risk Tool (ORT): patient self-report screening tool for adults with chronic pain conditions at initiation of opioid therapy
- Screener and Opioid Assessment for Patients with Pain (SOAPP): self-reported survey for chronic pain patients already on opioid therapy

Starting an Opioid

- For acute pain, use immediate release formulations PRN. Do not use LA opioids or methadone.
- Prescribe only the quantity of opioids sufficient to manage the anticipated duration of pain. Minor procedures may require only a 72-hour supply, while severe chronic or malignant pain may require a long-term routine supply.
- Schedule medications based on expected duration of action. If pain relief is not sufficiently controlled for the entire dosing period, consider an incremental increase in scheduled dose, rather than increasing dosing frequency.
- Provide a short-acting opioid for rescue dosing of breakthrough pain when using a scheduled LA opioid for baseline pain control. Rescue doses of opioids are 10-15% of the 24-hour scheduled dose and may be used "as needed". PRN doses can be provided based on onset of action or duration of action. For oral opioids, consider every 1-2 hours PRN for hospice care, but every 4-6 hours PRN for outpatient or palliative care.
- Reassess medication selection, scheduled opioid dose, and appropriate use of adjuvant medications for all patients who consistently require 3 or more rescue doses of short-acting opioid per day.

Increasing the Opioid Dose

- Reduce reliance on opioids by targeting underlying cause of pain with adjuvant medications and non-pharmacological therapies. See Opioid-Sparing Adjuvants & Non-Pharmacological Interventions for Pain.
- Titrate rescue and/or scheduled opioid doses by approximately 25% of the current OME relative to medication's duration of action, route of administration, cause of pain, and pain severity.

Switching between Opioids

- Calculate the OME of initial opioid as the first step, and then convert from OME to the desired opioid.
- Account for incomplete cross-tolerance and inter-patient variability in opioid response by reducing the calculated equianalgesic dose of the new opioid by 50% when switching opioids.
- Evaluate patient's response to new opioid; titrate opioid to maintain or improve pain control based on patient's functional goals.
- If using an opioid converter, use consistently to familiarize yourself with how doses and conversions are calculated. Read supportive documentation prior to use to ensure understanding of how calculations are derived. Epocrates Opioid Converter

Monitoring Opioid Therapy

- Evaluate expected benefits for pain control and patient functional improvements against potential risk of adverse events with opioid use.
- For patients expected to use opioids for 12 weeks or longer, institute urine drug screening and pain management agreements as a routine component of practice. Universal precautions in pain management follows a 10-step process aimed at improving patient care, reducing stigma, and containing opioid risk. For more information, access the linked article by DL Gourlay, et al made freely available from the publisher.
- Actively pursue professional continuing education related to pain management, state and federal laws on controlled substances, and opioid risk evaluation and mitigation strategies (REMS). Access Opioid Analgesic REMS educational programs and materials.
- Follow your licensing board's rules for requirements for the Ohio Automated Rx Reporting System (OARRS) reports access and review.
- Review State Medical Board of Ohio's Prescribing for Pain information – provides an overview of applicable regulations for chronic and subacute opioid prescribing. Access website

Opioid-Sparing Adjuvants

For all types of pain consider non-pharmacological therapies

Pain Source	Characteristic	Treatment Options	Comments
Bone or soft tissue	Tenderness over bone or joint; pain on movement; inflammatory pain	**NSAID** Ibuprofen (Motrin) Naproxen (Aleve) Celecoxib (Celebrex) Meloxicam (Mobic) Diclofenac (Voltaren gel)	• Even short term use can increase risk of cardiovascular, GI, and renal adverse effects • Use lowest effective dose • Consider addition of PPI or H2RA for GI protection if chronic NSAID use is required
		Non-opioid Acetaminophen (Tylenol)	• Recommend maximum 3g/day for most adults • Monitor acetaminophen intake from all sources, Rx and OTC
		Corticosteroid Prednisone Dexamethasone Methylprednisolone	• Assess need for burst vs chronic glucocorticoid therapy • Avoid abrupt withdrawal from chronic use. Taper recommended if use is prednisone equivalent of ≥ 30mg for ≥ 2 weeks or any dose of systemic corticosteroid for ≥ 30 days • Monitor effects on blood glucose, edema, bone and skin health • Consult corticosteroid converter tool if changing corticosteroids
Anxiety	Generalized restlessness and discomfort	**Antidepressant** Sertraline (Zoloft) Citalopram (Celexa) Buspirone (Buspar)	• All SSRI may help comorbid anxiety and depression • SSRI: avoid abrupt withdrawal; taper over ≥ 2 weeks to lessen discontinuation syndrome. • Worst risk of discontinuation syndrome with paroxetine (Paxil); extended taper over ≥ 4 weeks may be necessary
		Benzodiazepine Lorazepam (Ativan) Diazepam (Valium) Alprazolam (Xanax) Clonazepam (Klonopin)	• All benzodiazepines: schedule IV controlled substance • Boxed warning: Avoid concurrent opioid use if possible; increased risk of CNS/respiratory depression • May also provide muscle relaxant benefit • Risk of dependency • Avoid abrupt withdrawal; taper over ≥ 2-4 weeks. Longer taper may be required after extended or high-dose therapy. Taper total daily dose by about 25% every week; slow taper based on patient response. Consult a benzodiazepine taper protocol. • Consult benzodiazepine converter tool if changing benzodiazepines
Neuropathy	Burning, shooting, or tingling pain; pain radiating from plexus or spinal root	**Antidepressant** TCA: desipramine, nortriptyline, amitriptyline SNRI: duloxetine (Cymbalta), venlafaxine (Effexor)	• TCA: may cause anticholinergic side effects • TCA: may prolong QT interval • SNRI: may also improve depression • SNRI or TCA: avoid use in liver or renal failure • Avoid abrupt withdrawal; taper over ≥ 2 weeks. Worst risk of discontinuation syndrome with venlafaxine (Effexor); extended taper over ≥ 4 weeks may be necessary
		Antiepileptic Gabapentin (Neurontin) Pregabalin (Lyrica)	• Pregabalin: schedule IV controlled substance • Gabapentin is not scheduled in Ohio but is OARRS-reported • Titrate based on response and tolerability • Decrease doses in renal impairment • Avoid abrupt withdrawal; taper over ≥ 2 weeks
		Topical Lidocaine Capsaicin	• Capsaicin (Qutenza): office-based use only • Capsaicin: OTC formulations (0.025% - 0.1%); gels/creams/lotions must be applied 3-4 times/day for 2-4 weeks of continuous therapy to determine benefit • Lidocaine: OTC (4%) or Rx (5%) seem to have similar effectiveness; patches can be cut to desired size
		Cannabinoids Variety of dosage formulations; consider 1:1 ratio of THC:CBD	• Limited evidence for benefit in chronic neuropathic pain, especially with comorbid anxiety, depression • Requires physician with certificate to recommend (CTR) and patient/caregiver program registration. More information available from Ohio's Medical Marijuana Control Program (MMCP).
Muscle spasm	Cramping, smooth muscle	**Anticholinergic** Dicyclomine (Bentyl) Hyoscyamine (Levsin)	• Significant anticholinergic side effects • Avoid long-term use, especially in elderly • Avoid in patients with obstructive GI disease
	Skeletal muscle (legs, back); spasticity	**Muscle relaxant** Cyclobenzaprine (Flexeril) Tizanidine (Zanaflex) Baclofen Diazepam (Valium)	• Avoid concurrent opioid use if possible; increased risk of CNS/respiratory depression • Tizanidine: clonidine-like structure; monitor for hypotension • Cyclobenzaprine: TCA-like structure; anticholinergic side effects; avoid concomitant use with TCA • Baclofen: avoid abrupt withdrawal; taper over 1-2 weeks • Benzodiazepines: avoid duplication of therapy; review medications used for sleep & anxiety before adding diazepam for muscle spasm • All: Elderly at higher risk of CNS adverse effects • All: Decrease doses in renal or liver impairment

For complete dosing and adverse effects information consult a professional drug information reference.

Non-Pharmacological Interventions for Pain

Use to complement and enhance opioid and adjuvant pharmacological interventions

Acceptance & Commitment Therapy (ACT)	Focus is on commitment to participate in valued activities despite pain including reduced attempts to control and avoid pain; incorporates mindfulness
Acupuncture	Most evidence for low back pain, rheumatoid or osteoarthritis, fibromyalgia
Chiropractic	Focused on normalizing spinal alignment to influence the body's physiologic functioning; limited evidence for back and spine conditions
Cognitive-Behavioral Therapy (CBT)	Incorporates cognitive (reducing catastrophizing thoughts) and behavioral (relaxation, activity pacing) skills to improve coping, increase functioning, and reduce pain
Distraction Therapy	Most studied for procedural pain in pediatrics, virtual reality or digital entertainment tools may reduce anxiety and provide distraction for patients undergoing wound care, venipuncture, burn care or other medical procedures
Heat Therapy / Thermotherapy	Used with caution, heating pads or warm compresses may help muscle ache, low back pain, and muscle and joint stiffness. Avoid heat application if redness, inflammation, skin ulceration is present. Avoid in patients with decreased sensory function and closely monitor use in patients with cognitive impairment.
Massage	Most evidence for low back pain, fibromyalgia to improve mobility
Osteopathic Manipulative Treatment (OMT)	Provided by osteopathic physicians in complement with other therapies to improve physical function and homeostasis; evidence for myofascial or low back pain
Physical Therapy (PT)	Services to restore function, improve mobility, and relieve pain from injury or physical disability; may include TENS or RICE therapy along with an exercise plan
Rest-Ice-Compression-Elevation (RICE)	For acute, painful joint injuries within 72 hours of injury. May help to reduce pain and inflammation at site of injury and protect joint during initial healing. Limited evidence to support RICE for adult ankle sprains.
Transcutaneous Electrical Nerve Stimulation (TENS)	Delivers alternative current via cutaneous electrodes placed near the painful area; most evidence for chronic musculoskeletal pain; limited for diabetic neuropathy

Naloxone Information

About Naloxone

- Opioid antagonist administered in emergent situations for complete or partial reversal of an opioid overdose.
- Reverses opioid-induced respiratory depression and analgesia. No effect on other CNS depressants (e.g., alcohol, benzodiazepines, cannabis)
- Routes of administration: IV, IM, SQ and intranasal; injectable formulation can be given intranasally with atomizer device.

Naloxone Dosing

- *Partial reversal*: dilute naloxone 0.4mg (1mL) with 9mL normal saline. Administer 1-2 mL (0.04-0.08mg) IV/SQ every 2 minutes until RR > 8 bpm
- *Full reversal*: 0.4-2mg IV/SQ/IM or intranasal every 2-3 minutes until RR > 8 bpm
- Onset of action: IV/SQ/IM ≈ 2-5 minutes; intranasal ≈ 8-12 minutes; duration of action ≈ 30-120 minutes, repeated doses may be required
- Overdose resulting from opioids with long half-life, partial opioid agonists, or mixed agonist/antagonists may require repeated naloxone dosing.

Obtaining Naloxone in the Community

- Nasal spray device (Narcan®) widely distributed at overdose prevention events; preferred for lay person use
- Consider for any person at risk or who may assist an individual experiencing an overdose or at risk of experiencing an overdose.
- Ohio Revised Code (ORC 4729.44) and Ohio Administrative Code (OAC 4729:1-3-04 & 4729:2-3-04) authorizes pharmacists and pharmacy interns under direct supervision of a pharmacist to dispense naloxone without a prescription pursuant to a physician-approved protocol. See Ohio Board of Pharmacy for list of authorized pharmacies, multilingual patient counseling brochures, and additional guidance documents.
- Ohio Department of Health's Project DAWN (Deaths Avoided with Naloxone) offers educational resources and training on naloxone.

Safe Opioid Disposal

Opioid Disposal Resources

- Avoid storing or saving controlled substances in the home for extended periods for any reason, including waiting for future Drug Take Back Day. As long as the unused or expired medication is in the home, the risk of diversion, misuse, or accidental ingestion and poisoning is present. Advise patients to disposal of medications as soon as they are no longer needed.
- Ask your pharmacist about medication disposal. Most pharmacies now supply drug disposal kits that allow the patient to mail-back unused medications for commercial incineration or inactivate the medications for safe disposal in household trash.
- When other disposal options are not available (e.g. Take Back Days, pharmacy drug disposal boxes, commercial drug disposal kits) follow instructions on the FDA's Flush List. Due to significant environmental impact, if the drug is not listed, avoid flushing of any medications.
- If none of these options are available, follow FDA instructions for disposal in cat litter or used coffee grounds and seal in a plastic container.
- DEA sanctioned National Drug Take Back Days occur twice each year, in April and October. Any unwanted or unused medications can be dropped off during these events at no cost and with no questions asked.

Hospice

- Hospices licensed in Ohio are required by ORC 3712.062 to have a written policy in place establishing procedures to prevent diversion of controlled substances in a hospice patient's home, including procedures for disposal of opioids at the time of patient death or when no longer needed by the patient. Refer to the ORC section for complete information.

Reduce Opioid Quantity Dispensed

- Ohio law allows partial fills for all schedule II controlled substances under 21 CFR 1306.13 and OAC 4729:5-5-12
- For patients who are terminally ill or residents of long-term care facilities, follow 21 CFR 1306.13. Prescription must indicate "terminally ill" or "LTCF patient"; total quantity dispensed cannot exceed total quantity prescribed; remaining portions of a partially dispensed schedule II controlled substance must be filled within **60 days** of the prescription date.
- For patients who are NOT terminally ill or residents of long-term care facilities, follow OAC 4729:5-5-12. Partial dispensing can be requested by the patient or the prescriber issuing the prescription; total quantity dispensed cannot exceed total quantity prescribed; remaining portions of a partially dispensed schedule II controlled substance must be filled within **30 days** of the prescription date.

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