

## Commonly Used Non-Opioid Analgesics

Drug	Average Dose	Dosing Interval	Maximum Dose in 24h	Side Effects	Comments
Acetaminophen (Tylenol)	325-500 mg 500-1000 mg	4h 6h	4 g (<3 g in patients with liver dysfunction and in the elderly)	Minimal, if any, side effects	Reduce maximum dose 50-75% with hepatic insufficiency or history of alcohol abuse.
<b>Non Steroidal Anti-Inflammatory Drugs (NSAIDs) (use with extreme caution in the elderly)</b>					
Choline Magnesium Trisalicylate (Trilisate)	500-1000 mg	8-12h	3000 mg	Lower incidence of GI bleeding, minimal anti-platelet activity	Caution with renal disease.
Ibuprofen (Motrin & others)	200-400 mg	4-6h	2400 mg	*see below	Caution with renal disease.
Naproxen (Naprosyn)	500 mg initial, 250 mg subsequent	6-8h	1500 mg	*see below	Caution with renal disease.
Nabumetone (Relafen)	500-750 mg	8-12h	2000 mg	*see below	Caution with renal disease.
Ketorolac (Toradol)	30 mg IV initial, 15-30 mg subsequent	6h	150 mg first day, 120 mg thereafter	*see below	In elderly, 30 mg starting dose, 15 mg thereafter. Use restricted to 5 days. Caution with renal disease
Celecoxib (Celebrex)	100-200 mg	12h	200-400 mg	Lower incidence of adverse GI effects. Renal toxicity	Contraindicated in sulfonamide allergy. No platelet effects. Risk of cardiovascular events. Use lowest dose possible.
<b>Dual Mechanism Analgesics</b>					
Tramadol (Ultram, Ultram ER)	25-50 mg ER: 100, 200, 300 mg	4-6h ER: q24h	400 mg ( <b>300 mg in the elderly</b> )	Headache, confusion, sedation.	Opioid and inhibitor of serotonin and norepinephrine reuptake. Lowers seizure threshold.
Tapentadol (Nucynta)	50-100 mg after titration	4-6h	600 mg/day	Nausea, dizziness, sedation.	Opioid and inhibitor of norepinephrine reuptake.

\* Monitor for common adverse effects: GI ulceration and bleeding, decreased platelet aggregation, and renal toxicity.

## Management of Opioid Side Effects

Adverse Effect	Management Considerations
Constipation	<b>Begin bowel regimen when opioid therapy is initiated.</b> Include a mild stimulant laxative (e.g., Senna, Cascara) + stool softener (e.g., Colace) at hs, or in divided doses as routine prophylaxis
Sedation	Tolerance typically develops. Hold sedatives/anti-anxiety, dose reduction; consider CNS stimulants (e.g., increase caffeine intake, methylphenidate, dextroamphetamine or modafinil)
Nausea/Vomiting	Dose reduction, opioid rotation; consider metoclopramide, prochlorperazine, scopolamine patch
Pruritus	Dose reduction, opioid rotation; consider an antihistamine such as diphenhydramine
Hallucinations	Dose reduction, opioid rotation, consider neuroleptics (haloperidol or risperidone)
Confusion/Delirium	Dose reduction, opioid rotation, neuroleptic therapy (haloperidol, risperidone)
Myoclonus	Dose reduction, opioid rotation, increase fluid intake; consider clonazepam, baclofen
Respiratory Depression	<b>Sedation precedes respiratory depression.</b> Hold opioid. Give low dose naloxone - dilute 0.4 mg (1 ml of a 0.4 mg/ml amp of naloxone) in 9 ml normal saline for final concentration of 0.04 mg/ml

## References

- American Geriatric Society Clinical Practice Guidelines (2002, 2009).
- American Pain Society (2008), Principles of Analgesic Use in the Treatment of Acute Pain and Cancer Pain, 6th edition.
- American Pain Society (2005), Guideline for the Management of Cancer Pain in Adults and Children.
- American Pain Society (2002), Guideline for the management of pain in osteoarthritis, rheumatoid arthritis, and juvenile chronic arthritis, 2nd ed., Glenview, IL: APS.

Printed through a grant from Tufts University School of Medicine, Master of Science in Pain Research, Education and Policy. [www.tufts.edu/med/prep](http://www.tufts.edu/med/prep)

# Pain Management Pocket Tool



[www.masspaininitiative.org](http://www.masspaininitiative.org)

## Principles of Pain Management

- Ask the patient about the presence of pain
- Accept the patient's report of pain
- Perform a comprehensive pain assessment, including:
  - Onset, duration, and location
  - Intensity (use appropriate scale)
  - Effect on function and quality of life
  - What makes the pain better or worse
  - Quality
  - Patient's goal
  - Response to prior treatment
  - History/physical exam
- Do not use I.M. route. Oral, I.V. or S.C. preferred.**
- Treat persistent pain with scheduled medications
- Ordinarily two drugs of the same class (e.g., NSAIDs) should not be given concurrently; however, one long-acting and one short-acting opioid may be prescribed concomitantly
- Assess, anticipate and manage opioid side effects aggressively
- Most opioid agonists have no ceiling dose for analgesia; titrate to relief and assess for side effects
- With older adults, start low, go slow, but go!
- Discuss goals and plans with patient and family
- Assess and reassess pain frequently
- Avoid meperidine.**
- Addiction occurs rarely unless there is a history of substance abuse; the hallmarks include:
  - a) compulsive use, b) loss of control, c) use despite harm

## Management of Breakthrough Pain

When using long-acting opioids around-the-clock for persistent pain, obtain order for a short-acting opioid (rescue) for breakthrough pain.

- The rescue dose is 10-15% of the 24h total daily dose.
- Oral rescue doses should be available every 1-2h; parenteral doses every 15-30 minutes.
- If patient is consistently using 3 or more rescue doses daily, consider increasing the around-the-clock dose.
- Whenever the around-the-clock dose is increased, the rescue dose will need to be recalculated.
- Consider using the same drug for both scheduled and breakthrough doses when possible (e.g., long-acting morphine + short-acting morphine).

## Examples:

**Oral rescue dosing:** Pt. is on MS Contin 200 mg q 12h.

- Total daily dose (200 mg x 2 = 400 mg morphine/24h)
- Calculate 10 to 15% of 24h dose for rescue dose.  
(10% = 40 mg, 15% = 60 mg short-acting morphine)
- Rescue dose = 40-60 mg of morphine q 1-2h.

**Parenteral Dosing:** (based on continuous infusion)  
Calculate rescue dose based on 25-50% of hourly dose.

### Switching From One Opioid To Another: (Examples)

- Calculate the total 24h dose of pt's opioid regimen.  
(morphine 30 mg q 4h = 180 mg/24h)
- Locate new opioid on equianalgesic chart.  
(hydromorphone 7.5 mg = 30 mg morphine)
- Set-up equation.  
 $180 \text{ mg} = \frac{X}{30 \text{ mg}} \times 7.5 \text{ mg}$   
(X = 45 mg hydromorphone in 24h)
- Divide the total daily dose of the new opioid by the number of doses given per day.  
(45 mg divided by 6 doses = 7.5 mg q 4h)
- Reduce calculated dose of new opioid by 25% -50% for incomplete cross tolerance; titrate up as needed.

Transdermal Fentanyl (Duragesic patch)

**Use caution in opioid-naïve patient.**

Duragesic patch 25 µg q 72h = 50 mg oral morphine q 24h.  
Divided into 6 doses = 8.3 mg oral morphine or 2.8 mg IV morphine q 4h. **These are approximate doses.**

### \*Opioid Equianalgesic Chart (opioids with no ceiling dose)

Opioid	Parenteral Route	Oral Route	Starting Dose for Opioid Naïve
Morphine	10 mg	30 mg	Start at 15 mg po for immediate release (IR). Available in controlled release (CR)
Hydromorphone	1.5 mg	7.5 mg	Start at 4 mg po IR, available as CR
Oxycodone	N/A	20 mg	Start at 5 mg po IR, available as CR.
Fentanyl	0.1 mg (100 µg)	N/A	Start at 12 µg. 25 µg patch is equal to approx. 50 mg of oral morphine q 24h
Methadone	5 mg	10 mg	3-5 mg po for long-term use (can accumulate due to long half-life). Consult pain specialist before prescribing
Oxymorphone	1 mg	10 mg	Start at 10 mg po IR. Available in CR. Must be taken on an empty stomach.

### \*Combination Opioid Drugs (have ceiling dose)

Hydrocodone + aspirin, acetaminophen, or ibuprofen (Vicodin, Lortab, Vicoprofen)	N/A	30 mg	Available as 5, 7.5, or 10 mg hydrocodone with acetaminophen, aspirin or ibuprofen (4 g/24h ceiling dose with acetaminophen)
Oxycodone (Percocet, Tylox)	N/A	20 mg	Available as 2.5, 5, 7.5 or 10 mg oxycodone with acetaminophen (4 g/24h ceiling dose with acetaminophen)

\*Equianalgesic doses are approximate. Individual patient response must be observed. Doses are titrated according to patient's response. **Doses may be lower in frail & elderly.**

### Adjuvant Analgesic Drugs

Most commonly used drugs. Consideration should be given to comorbidities, hepatic and renal insufficiency, and age.

Drug	Uses	Starting Dose	Dose Range	Comments
<b>Antidepressants (often use lower doses to treat pain than to treat depression)</b>				
<b>Tricyclic Antidepressants</b>				
Amitriptyline (Elavil)	Neuropathic pain	25 mg po hs <b>(10 mg or less for elderly)</b> Titrate dose every few days to minimize side effects.	75-150 mg po hs	Side effects include dry mouth, drowsiness, dizziness, constipation, urinary retention, confusion. Obtain baseline EKG for history of cardiac disease.
Nortriptyline (Pamelor)	Neuropathic pain	Same as above	75-150 mg po hs	Better side effect profile than amitriptyline. Titrate as above.
Desipramine (Norpramin)	Neuropathic pain	Same as above	75-150 mg po hs	Better side effect profile than amitriptyline. Titrate as above.
<b>Selective Serotonin and Norepinephrine Reuptake Inhibitor (SSNRI) Antidepressant</b>				
Duloxetine (Cymbalta)	Diabetic neuropathy, chronic musculoskeletal pain	30 mg	60 mg once daily sustained release	Should not use with MAOIs. Consider lower starting dose for patients for whom tolerability is a concern.
<b>Antiepileptics</b>				
Gabapentin (Neurontin)	Neuropathic pain	100-300 mg po tid. Increase by 100-300 mg q 3 days	300-3600 mg /day in three divided doses.	Adjust dose for renal dysfunction. Can cause drowsiness. No drug-drug interactions.
Pregabalin (Lyrica)	Diabetic peripheral neuropathy Post herpetic neuralgia Fibromyalgia	150 mg po in 2-3 divided doses (depending on indication)	50-600 mg/day (depending on indication)	Similar to gabapentin, often more rapid response than gabapentin; Schedule V controlled substance.
Lamotrigine (Lamictal)	Neuropathic pain	25-50 mg/day	200-600 mg/day	Titrate slowly to reduce risk of serious cutaneous toxicity.
<b>Corticosteroids</b>				
Dexamethasone (Decadron)	Spinal cord compression, bony mets, joint pain	4-8 mg po q 8-12h 10-20 mg IV q 6h	Minimal effective dose	High dose therapy should not exceed 72h. May improve appetite.
Prednisone	Spinal cord compression, bony metastases	5-10 mg po daily or bid	Minimal effective dose	For cancer pain, continue treatment until side effects outweigh benefit. Also for joint pain and R.A. pain.
<b>Local Anesthetic</b>				
Lidoderm Patch (Topical Lidocaine)	Post Herpetic Neuralgia	1-3 patches over painful area(s)	1-3 patches 12h on and 12h off	Patch may be cut to fit painful area(s). Place only on intact skin.
<b>Other Adjuvant</b>				
Baclofen (Lioresal)	Muscle spasticity	5-10 mg po tid-qid	80-120 mg po in 24h	Caution in renal insufficiency.

**Disclaimer: The intent of this guide is to provide a brief summary of commonly used analgesics. It is not a complete pharmacological review. All medications should be administered only with physician or licensed allied health provider orders. No liability will be assumed for the use of this tool.**