Opioid Rotation & Conversion

Convert, then **reduce for incomplete cross-tolerance** · the step that prevents the overdose

Reduce 25-50%
every rotation

⚠ READ THIS BEFORE USING THE TABLE

Equianalgesic tables are approximations, and published tables disagree with each other. They were derived largely from single-dose studies in opioid-naive people, so they perform worst in exactly the chronic, tolerant patient you are usually converting. **Use your institution's table**, treat any conversion as a starting estimate rather than an equivalent dose, and **reassess within 24 hours**. When the arithmetic and your clinical judgment disagree, go with the lower dose.

THE FIVE STEPS *do them in order, and never skip step 3*

Step	What to do
1. Add up 24 hours	Total **everything** the patient actually received in the last 24 hours: the long-acting, every breakthrough dose, and any parenteral. **Use what was given, not what was prescribed**
2. Convert to oral morphine equivalents	Bring the whole daily total into one currency using the table below
⚠ 3. Reduce by 25% to 50%	**For incomplete cross-tolerance.** Tolerance to one opioid does not transfer fully to another, so the calculated dose usually **overstates** what the patient needs. **Reduce more (nearer 50%) in the frail, elderly, those with renal or hepatic impairment, or when pain is currently well controlled. Reduce less (nearer 25%) when pain is severe and uncontrolled.** Omitting this step is the classic cause of iatrogenic overdose
4. Convert to the new drug and divide	Split the reduced total across the dosing interval of the new agent
5. Write breakthrough	**10% to 20% of the new total daily dose**, as an immediate-release form, every 1 to 4 hours as needed. **An opioid regimen without breakthrough is an incomplete prescription**, and persistent breakthrough use is how you titrate the background dose upward

EQUIANALGESIC REFERENCE *approximate, for chronic dosing*

Drug	Parenteral	Oral	Notes
Morphine *the reference*	**10 mg**	**30 mg**	**The oral to IV ratio is about 3 to 1** for chronic dosing. **Avoid in renal impairment**: active metabolites accumulate and cause sedation and myoclonus
Hydromorphone	**1.5 mg**	**7.5 mg**	Roughly **5 times** as potent as oral morphine. Often preferred in renal impairment, though not free of metabolite accumulation
Oxycodone	Not available IV in the US	**20 mg**	Roughly **1.5 times** oral morphine
Hydrocodone	Not available	**30 mg**	Approximately equal to oral morphine. Usually combined with acetaminophen, so **watch the acetaminophen ceiling** when escalating
Fentanyl patch	**25 microgram/hour patch is roughly 50 to 60 mg of oral morphine per day**		**Never for opioid-naive patients or acute pain.** Takes 12 to 24 hours to work and has a long tail after removal, so cover the gap when starting and stopping. **Absorption rises with fever and heat**
⚠ Methadone	**Do not use a simple ratio**		**Conversion is non-linear and rises with the previous opioid dose**, the half-life is long and variable, and it prolongs the **QTc**. **Specialist or palliative care involvement only**

WHEN TO ROTATE, AND WHAT TO WATCH *rotation is a clinical decision, not a formality*

Reason to rotate	Detail
Intolerable side effects	Persistent sedation, nausea, confusion, pruritus or **myoclonus** despite adequate management. Rotation frequently improves tolerability because side-effect profiles differ between agents
Inadequate analgesia despite escalation	Pain not controlled at doses that are causing toxicity. Before rotating, **ask whether the pain is opioid-responsive at all**: neuropathic, bone and total pain often need an adjuvant rather than more opioid
Renal or hepatic failure	**Avoid morphine and codeine in renal failure**, where active metabolites accumulate. Hydromorphone or fentanyl are usually preferred, and fentanyl has no significant active metabolites
Route change	Loss of the oral route, or a need for rapid titration. Remember the **oral to parenteral ratio changes the number substantially**, which is where errors cluster
Always co-prescribe	**A bowel regimen with every opioid**, since tolerance to constipation never develops: a stimulant laxative such as senna, with or without a softener. Also an antiemetic for the first days, and counseling about sedation and driving

SAFETY & PEARLS

- **Naloxone should be considered part of the prescription** at higher daily doses, with any benzodiazepine co-prescription, or with sleep apnea or significant respiratory disease. Prescribe it and teach the household how to use it, in the same way you would an epinephrine autoinjector.
- **Benzodiazepines plus opioids is the combination that kills.** Respiratory depression risk is multiplied. If both are genuinely needed, use the lowest doses, document the reasoning, and monitor.
- **Escalating breakthrough use is data, not failure.** If the patient needs several rescue doses a day consistently, **add roughly the total rescue used into the background dose** and recalculate, rather than simply repeating the rescue.
- **Check the arithmetic with a second person for any large conversion**, particularly to or from fentanyl patches and any methadone involvement. **Write the calculation in the notes**, so the next clinician can see how the dose was derived rather than inheriting an unexplained number.

References: Expert panel consensus on best practices for opioid rotation · published equianalgesic tables and reviews on opioid rotation and equianalgesia · institutional opioid conversion references. **Ratios vary between published sources; use your local table.**