Opioid Dose Conversions (with examples)

Reference: Arnold R, Weissman DE. Calculating Opioid Dose Conversions, 2nd Edition. Fast Facts and Concepts. July 2005; 36. Available at: <http://www.eperc.mcw.edu/EPERC/FastFactsIndex/ff_036.htm>.

**The following were considered equivalents to 10 mg parenteral (iv, sc, im) Morphine**

**Same conversion for short or long acting**

|  |  |
| --- | --- |
| Morphine parenteral | 10 mg |
| Morphine oral (po) | 30 mg |
| Codeine | 200 mg |
| Hydromorphone parenteral | 1.5 mg |
| Hydromorphone oral | 7.5 mg |
| Oxycodone po | 20 mg |
| Hydrocodone po | 30 mg |
| Oxymorphone parenteral | 1 mg |
| Oxymorphone rectal | 10 mg |
| Oxymorphone oral | 15 mg |
| Levorphanol parenteral | 2 mg |
| Levorphanol oral | 4 mg |
| Methadone parenteral | 10 mg |
| Methadone oral | 20 mg |
| Fentanyl parenteral  | 0.1 mg |
| Fentanyl transdermal | Approximate equivalent doses for oral morphine, IV/SQ morphine, and TD fentanyl60 mg/day oral ≈ 20 mg/day IV/SQ ≈ 25 micrograms/hour TD120 mg/day oral ≈ 40 mg/day IV/SQ ≈ 50 micrograms/hour TD180 mg/day oral ≈ 60 mg/day IV/SQ ≈ 75 micrograms/hour TD240 mg/day oral ≈ 80 mg/day IV/SQ ≈ 100 micrograms/hour TD |
| Fentanyl oral  | 0.1 mg |
| Buphrenorphine parenteral  | 0.3 mg |
| Buphrenorphine transdermal | 0.01 mg /hour |
| Tapentadol  | 75 mg |
| Tramadol  | 100 mg |
| Meperidine | 300 mg |
| Pentazocine | 180 mg |
| Propoxyphene | 65 mg |
| Nalbuphine | 2.5 mg |
| Alfentanil iv  | 0.5 mg  |
| Remifentanil iv | 0.1 mg  |
| Sufentanil iv | 0.01 mg  |

Morphine 10 mg parenteral = Morphine 30 mg oral = Hydromorphone 1.5 mg parenteral = Hydromorphone 7.5 mg oral.

**Steps in Dose Conversion**

1. **Change route, keeping drug the same (e.g. oral to IV morphine)**
	* Example: Change 90 mg q12 Extended Release Morphine to Morphine by IV continuous infusion
		1. Calculate the 24 hour current dose: 90mg q 12 = 180 mg Morphine/24 hours
		2. Use the oral to parenteral equianalgesic ratio: 30 mg PO Morphine = 10 mg IV Morphine
		3. Calculate new dose using ratios: 180/30 x 10 = 60 mg IV Morphine/24
2. **Change drug, keep the same route (e.g. po morphine to po hydromorphone)**
	* 1. Example: Change 90 mg q 12 Extended Release Morphine to oral Hydromorphone.
		2. Calculate the 24 hour current dose: 90 Q12 x 2 = 180 mg PO Morphine/24 hrs
		3. Use the equianalgesic ratio: 30 mg PO Morphine = 7.5 mg PO Hydromorphone
		4. Calculate new dose using ratios: 180/30 X 7.5 = 45 mg oral Hydromorphone/24 hours.
3. **Changing drug and route (e.g. oral morphine to IV hydromorphone)**
	* Example: Change from 90 mg q12 Extended Release Morphine to IV Hydromorphone as a continuous infusion.
		1. Calculate the 24 hour current dose: 90 Q12 x 2 = 180 mg PO Morphine/24 hrs
		2. Use the equianalgesic ratio of PO to IV morphine: 30 mg po Morphine = 10 mg IV Morphine
		3. Calculate new dose using ratios: 180/30 x 10 = 60 mg IV Morphine/24 hours
		4. Use the equianalgesic ratio of IV Morphine to IV Hydromorphone: 10 mg Morphine = 1.5 mg Hydromorphone
		5. Calculate new dose using ratios: 60/10 x 1.5 = 9 mg IV Hydromorphone/24 hours