### Comparison Table: Some Oral/Topical Opioid Analgesics

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<th>Drug</th>
<th>Some Oral/Topical Formulations</th>
<th>Usual Adult Oral Starting Dosage</th>
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</table>
| Codeine – generic | 15, 30, 60 mg tabs | 15-60 mg q4h                    | ▶ The most common are sedation, dizziness, nausea, vomiting, pruritus, sweating, and constipation  | ▶ Schedule II–V<sup>4</sup> controlled substance  
▶ MME conversion factor<sup>7</sup>: 0.15  
▶ Also available parenterally  
▶ 60 mg equivalent to 650 mg of aspirin or acetaminophen  
▶ Converted to morphine by CYP2D6: may cause toxicity in CYP2D6 ultra-rapid metabolizers and may not be effective in CYP2D6 poor metabolizers  
▶ Contraindicated in children <12 years old and in those <18 years old following tonsillectomy or adenoidectomy | $66.40 |
| Fentanyl – Transdermal generic | 12, 25, 37.5, 50, 62.5, 75, 87.5, 100 mcg/hr patches  
Duragesic (Janssen) | See footnote 5, 6 | ▶ Can increase prolactin levels and reduce levels of sex hormones, resulting in reduced sexual function, decreased libido, infertility, mood disturbances, and bone loss  
▶ Cases of adrenal insufficiency have been reported, particularly after >1 month of use  
▶ Hyperalgesia, worsening pain that cannot be overcome by increasing the dose, has been reported in patients treated with high doses  
▶ Physical dependence can develop after several days to weeks of continued treatment; withdrawal symptoms may occur if the drug is stopped suddenly | ▶ Schedule II controlled substance  
▶ MME conversion factor<sup>7</sup>: patch<sup>8</sup>: 2.4  
tabs/lozenges<sup>9</sup>: 0.13  
sublingual spray<sup>9</sup>: 0.18  
nasal spray<sup>9</sup>: 0.16  
▶ Also available parenterally  
▶ Not recommended for opioid-naïve patients  
▶ Abstral, Actiq, Fentora, Lazanda, and Subsys are indicated only for breakthrough pain in opioid-tolerant patients with cancer  
▶ Actiq may cause dental caries  
▶ Exposing a fentanyl patch to heat from an external source, increased exertion, or high fever could increase drug release and risk of respiratory depression  
▶ Deaths have occurred in children following accidental exposure to the patch  
▶ The FDA recommends disposing of the patch by folding the sticky sides together and flushing it down the toilet | $162.40 |
| Transmucosal Abstral (Sentynl) | 100, 200, 300, 400, 600, 800 mcg sublingual tabs  
Actiq (Teva) generic | 100 mcg |  |  |  |  |
<p>| Fentora (Cephalon) | 100, 200, 400, 600, 800 mcg transmucosal lozenges | 200 mcg |  |  |  |  |
| Lazanda (Depomed) | 100, 300, 400 mcg/100 mL nasal spray | 100 mcg |  |  |  |  |
| Subsys (Insys) | 100, 200, 400, 600, 800, 1200, 1600 mcg sublingual spray | 100 mcg |  |  |  |  |</p>
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| Hydrocodone – extended-release | Hysingla ER (Purdue)  
Zohydro ER (Pernix) | 20, 30, 40, 60, 80, 100, 120 mg ER tabs  
10, 15, 20, 30, 40, 50 mg ER caps | 20 mg q24h  
10 mg q12h | ▶ Schedule II controlled substance  
▶ MME conversion factor: 1  
▶ Immediate-release formulations only available in fixed-dose combinations with acetaminophen (Vicodin, Norco, others) or ibuprofen (generics) | $258.80  
$514.20 |
| Benzhydrocodone/acetaminophen | Apadaz (Kempharm) | 6.12 mg/325 mg tabs | 6.12 mg/325 mg q4-6h | ▶ Schedule II controlled substance  
▶ Prodrug of hydrocodone  
▶ Only available in a fixed-dose combination with acetaminophen  
▶ FDA-approved only for short-term use (<14 days) | N.A. |
| Hydromorphone – generic | Exalgo (Mallinckrodt) | 2, 4, 8 mg tabs; 5 mg/mL PO soln  
8, 12, 16, 32 mg ER tabs | 2 mg q6-8h  
See footnote 5 | ▶ Schedule II controlled substance  
▶ MME conversion factor: 4  
▶ Also available in parenteral formulations, including a high-potency injectable (Dilaudid HP, generics), and as a suppository | 13.70  
179.60  
292.50  
418.40 |
| Levorphanol – generic | | 2 mg tabs | 2 mg q6-8h | ▶ Schedule II controlled substance  
▶ MME conversion factor: 11  
▶ Accumulation may occur with chronic use | 3690.00 |
| Meperidine – generic | Demerol (Sanofi) | 50, 100 mg tabs; 50 mg/5 mL PO soln  
100 mg tabs | 50 mg q3-4h | ▶ Schedule II controlled substance  
▶ MME conversion factor: 0.1  
▶ Also available parenterally  
▶ More rapid onset of action than morphine, but shorter acting  
▶ Tissue irritation occurs with parenteral use  
▶ Repeated doses can lead to accumulation of toxic metabolite that can cause dysphoria, irritability, tremors, myoclonus, and seizures  
▶ Use should be limited to  ≤ 48 hours | 8.90  
26.10 |
| Methadone – generic | Dolophine (Roxane) | 5, 10 mg tabs; 5, 10 mg/5 mL PO soln; 10 mg/mL PO conc; 40 mg tabs for PO susp  
5, 10 mg tabs | 2.5-10 mg q8-12h | ▶ Schedule II controlled substance  
▶ MME conversion factor: 1-20 mg/d: 4  
21-40 mg/d: 8  
41-60 mg/d: 10  
61-80 mg/d: 12  
▶ Also available parenterally  
▶ Accumulation may occur with chronic use  
▶ Not fully cross-tolerant with other opioids  
▶ Dose-related QT interval prolongation and torsades de pointes have been reported | 8.90  
10.90 |
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| Morphine – generic extended-release – Arymo ER (Egalet)* | 15, 30 mg tabs; 10, 20, 100 mg/5 mL PO soln                                                  | 10-30 mg q4h                     | ▶ Concurrent use of other CNS depressants, such as benzodiazepines, increases the risk of respiratory depression  
▶ Urinary retention and severe constipation could occur with concurrent use of an anticholinergic drug  
▶ Use with serotonergic drugs has resulted in serotonin syndrome  
▶ Use with or within 14 days of an MAO inhibitor may result in serotonin syndrome or opioid toxicity  
▶ Buprenorphine, fentanyl, hydrocodone, meperidine, methadone, oxycodone, and tramadol are metabolized by CYP3A4; concurrent administration of a CYP3A4 inhibitor (or discontinuation of a CYP3A4 inducer) could increase their serum concentrations and concurrent use of a CYP3A4 inducer (or discontinuation of a CYP3A4 inhibitor) could decrease them  | ▶ Schedule II controlled substance  
▶ Also available for parenteral use and as a suppository  
▶ Taking Kadian or the multiphase generic with alcohol can result in rapid release of morphine  
▶ Maximum dose of the multiphase generic is 1600 mg due to renal toxicity of fumaric acid in the beads (chewing or crushing the beads can be fatal)  | ▶ Schedule II controlled substance  
▶ Naltrexone is only absorbed if the capsules are crushed, chewed, or dissolved  
▶ Taking Embeda with alcohol can result in increased serum concentrations of morphine  | 39.90 |
| MS Contin (Purdue) generic                        | 15, 30, 60 mg ER tabs; 10, 20, 30, 40, 50, 60, 70, 80, 100, 200 mg ER caps                   | 15 mg q8-12h                      | ▶ Most common are nausea, dizziness, vomiting, headache, and somnolence  
▶ Seizures could occur  | ▶ Should not be used with or within 14 days of an MAO inhibitor  
▶ Use with a serotonergic drug could result in serotonin syndrome  | ▶ Schedule II controlled substance  
▶ MME conversion factor: 1.5  
▶ Also available in a fixed-dose combination with acetaminophen (Percocet, others), aspirin (generics) or ibuprofen (generics)  | 284.90 |
| Kadian (Actavis) generic                          | 15, 30, 60, 100 mg ER caps                                                                  | 15 mg q24h                       | ▶ Most common are nausea, dizziness, vomiting, headache, and somnolence  
▶ Seizures could occur  | ▶ Should not be used with or within 14 days of an MAO inhibitor  
▶ Use with a serotonergic drug could result in serotonin syndrome  | ▶ Schedule II controlled substance  
▶ MME conversion factor: 0.4  
▶ ER formulation similar in efficacy to ER oxycodone  
▶ Fewer GI adverse effects, but similar CNS effects compared to some other opioid agonists  | 694.60 |
| Morphine/naltrexone – extended-release – Embeda (Pfizer)* | 20/0.8, 30/1.2, 50/2.4, 80/3, 100/4 mg ER caps                                              | 20 mg/0.8 mg q24h                 | ▶ Most common are nausea, dizziness, vomiting, headache, and somnolence  
▶ Seizures could occur  | ▶ Should not be used with or within 14 days of an MAO inhibitor  
▶ Use with a serotonergic drug could result in serotonin syndrome  | ▶ Schedule II controlled substance  
▶ MME conversion factor: 3  
▶ Also available parenterally  | 200.50 |
| Oxycodone – generic Oxaydo (Egalet) extended-release – OxyContin (Purdue)* generic Xtampza ER* | 5 mg caps; 5, 10, 15, 20, 30 mg tabs; 5, 100 mg/5 mL PO soln                                  | 5-15 mg q4-6h                    | ▶ Schedule II controlled substance  | ▶ MME conversion factor: 1.5  | 14.90 |
| Oxycodone/naltrexone – extended-release – Embeda (Pfizer)* | 5 mg caps; 5, 7.5 mg tabs; 9, 13.5, 18, 27, 36 mg ER caps                                     | 10 mg q12h                       | ▶ Most common are nausea, dizziness, vomiting, headache, and somnolence  
▶ Seizures could occur  | ▶ Should not be used with or within 14 days of an MAO inhibitor  
▶ Use with a serotonergic drug could result in serotonin syndrome  | ▶ Schedule II controlled substance  
▶ MME conversion factor: 3  
▶ Also available parenterally  | 220.50 |
| Oxymorphone – generic Opana (Endo) extended-release – generic | 5, 10 mg tabs                                                                             | 5-15 mg q4-6h                    | ▶ Most common are nausea, dizziness, vomiting, headache, and somnolence  
▶ Seizures could occur  | ▶ Should not be used with or within 14 days of an MAO inhibitor  
▶ Use with a serotonergic drug could result in serotonin syndrome  | ▶ Schedule II controlled substance  
▶ MME conversion factor: 3  
▶ Also available parenterally  | 121.20 |
| Tapentadol – Nucynta (Janssen) extended-release – Nucynta ER | 50, 75, 100 mg tabs                                                                         | 50-100 mg q4-6h                   | ▶ Schedule II controlled substance  | ▶ MME conversion factor: 0.4  | 694.60 |
|                                                   | 50, 100, 150, 200, 250 mg ER tabs                                                            | 50 mg bid                        | ▶ Schedule II controlled substance  | ▶ MME conversion factor: 0.4  
▶ ER formulation similar in efficacy to ER oxycodone  
▶ Fewer GI adverse effects, but similar CNS effects compared to some other opioid agonists  | 374.00 |

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<td><strong>Tramadol</strong>&lt;br&gt; generic&lt;br&gt; <em>Ultram</em> (Janssen)&lt;br&gt; extended-release&lt;br&gt; generic&lt;sup&gt;16&lt;/sup&gt;&lt;br&gt; <em>ConZip</em> (Cipher)&lt;br&gt; biphasic generic&lt;sup&gt;17&lt;/sup&gt;</td>
<td>50 mg tabs&lt;br&gt; 100, 200, 300 mg ER tabs&lt;br&gt; 100, 200, 300 mg ER caps&lt;sup&gt;14&lt;/sup&gt;</td>
<td>50-100 mg q4-6h&lt;br&gt; 100 mg once/d&lt;sup&gt;6&lt;/sup&gt;</td>
<td>▶ Most common are nausea, vomiting, constipation, dizziness, and somnolence&lt;br&gt; ▶ Respiratory depression and death have been reported, particularly in children&lt;br&gt; ▶ Seizures can occur, particularly with higher doses and concomitant use of other drugs that lower the seizure threshold&lt;br&gt; <strong>Pregnancy and lactation</strong>&lt;br&gt; Should not be used by breastfeeding women; increased risk of respiratory depression and sedation in breastfed infants whose mothers are CYP2D6 ultra-rapid metabolizers&lt;br&gt; <strong>Drug Interactions</strong>&lt;br&gt; partly metabolized by CYP3A4; use with CYP3A4 inhibitors could increase the risk of adverse effects and use with CYP3A4 inducers could reduce its analgesic effect&lt;br&gt; Use with CYP2D6 inhibitors could decrease its analgesic effect&lt;br&gt; Use with a serotonergic drug could result in serotonin syndrome</td>
<td>▶ Schedule IV controlled substance&lt;br&gt; ▶ MME conversion factor&lt;sup&gt;7&lt;/sup&gt;: 0.1&lt;br&gt; ▶ Also available in a fixed-dose combination with acetaminophen (Ultracet, others)&lt;br&gt; ▶ Converted to active metabolite by CYP2D6; inhibition of CYP2D6 may decrease its efficacy&lt;br&gt; ▶ Contraindicated in children &lt;12 years old and in those &lt;18 years old following tonsillectomy or adenoidectomy&lt;br&gt; ▶ Starting with 25 mg/day and slowly titrating to usual dose over a few weeks may improve tolerability&lt;br&gt; ▶ 50 mg equivalent to codeine 60 mg&lt;br&gt; ▶ 100 mg comparable to aspirin 650 mg plus codeine 60 mg&lt;br&gt; ▶ Maximum dose is 400 mg/d for immediate-release formulations and 300 mg/d for ER formulations&lt;br&gt;</td>
<td>$5.60&lt;br&gt; $385.70&lt;br&gt; $20.00&lt;br&gt; $287.70&lt;br&gt; $229.60</td>
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