

World Health Organization Analgesic Ladder
Step 2 Opioid Analgesics for Mild to Moderate Pain: Pharmacokinetics and Costs

Generic Drug (Trade Drug)	Typical Dose	Approximately Equivalent to	Onset Effect (min)	Peak Effect (min)	Duration Effect (hr)	Plasma Half-Life (hr)	Cost in \$ for Typical Dose
Step 2 Opioid Agonist Drugs							
Codeine	30-60 mg PO 200 mg PO 120 IM	Aspirin 650 mg Morphine 10 mg IM Morphine 10 mg IM	30-45 10-30	20-120 30-60	4 4	2.5-4	0.27-0.55 1.51 0.90
Oxycodone <i>Immediate release</i> (Roxicodone, w/aspirin-Percodan w/acetaminophen-Percocet)	5 mg PO 30 mg PO	Codeine 60 mg PO Morphine 10 mg IM Morphine 30 mg PO	0-15	60	3-4	2-3	0.25 1.47
Hydrocodone (in Vicodin, Lortab, Lorcet, others)	30 mg PO	Morphine 10 mg IM	10-30	60	4-6	3.8	2.20
Meperidine (Demerol, Pethadol); Causes central nervous system excitation ranging from irritability to seizures	50 mg PO 300 mg PO 75 mg IM 50 mg IV	Aspirin 650 mg Morphine 10 mg IM Demerol 75 mg IM Morphine 10 mg IM Morphine 10 mg IM	15 10-15 1	60-90 30-60 5-7	2-4 2-4 2-3	2.4-4	0.69 3.94 0.39 0.26
Tramadol (Ultram)	50-100 mg	Codeine 60 mg PO	60	2 hr	4-6 hr	6-11 hr	0.60-1.20
Propoxyphene HCL (Darvon, Dolene) Propoxyphene napsylate (w/aspirin-Darvon N w/acetaminophen-Darvocet N)	65 mg PO 100 mg PO	Aspirin 600 mg Aspirin 600 mg	15-60	120	4-6	6-12	0.31 0.45
Step 2 Agonist-Antagonist Drugs							
Pentazocine HCL (Talwin); may cause abstinence reactions in patients physically dependent on opioids	60 mg IM 30 mg PO 180 mg PO	Morphine 10 mg IM Aspirin 600 mg Morphine 10 mg IM or Talwin 60 mg IM	15-20 15-30	30-60 60-90	2-3 3	2-3	2.53 0.48 2.88

Key: PO=oral; PR=rectal; IM=intramuscular; IV=intravenous. *PO cost is based on least expensive, 100 tablet quantity, generic preparation if available, and IV or IM is based on least expensive.*

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