

CLINICAL CORRELATE

Contraindications for Opioids

- Head injury (possible increased intracranial pressure)
- Pulmonary dysfunction (except pulmonary edema)
- Hepatic/renal dysfunction (possible accumulation)
- Adrenal or thyroid deficiencies (exaggerated responses)
- Pregnancy (possible neonatal depression or dependence), except meperidine which does not inhibit uterine contractions in delivery and causes less respiratory depression in newborn

MORPHINE

High-Yield

- Analgesia: ↑ pain tolerance and ↓ perception and reaction to pain
- Sedation
- Respiratory depression: ↓ response to ↑ pCO₂ (do not give O₂; give naloxone)

- Cardiovascular: minimal effects on heart but vasodilation (avoid in head trauma)
- Smooth muscle: longitudinal relaxes; circular constricts
 - GI: ↓ peristalsis, constipation, cramping
 - GU: urinary retention, urgency to void
 - Biliary: ↑ pressure
 - Pupils: miosis
- Cough suppression: antitussive action, independent of analgesia and respiratory depression
- Nausea and vomiting: stimulation of the chemoreceptor trigger zone (CTZ) in the area postrema
- Increased histamine release
- Pharmacokinetics: glucuronidation; morphine-6-glucuronide is highly active; caution in renal dysfunction

	Codeine	<ul style="list-style-type: none"> No miosis Tachycardia No spasm GI/GU/gallbladder Metabolized by cytochrome P450 to normeperidine, a serotonin reuptake inhibitor; normeperidine may cause serotonin syndrome and seizures Used in maintenance of opiate addict Cough suppressant Analgesia Used in combination with NSAIDs
Partial Agonist	Buprenorphine	Precipitation of Withdrawal
Mixed agonist-antagonists	Nalbuphine, pentazocine	<ul style="list-style-type: none"> κ agonist spinal analgesia dysphoria μ antagonist precipitation of withdrawal
Antagonists	Naloxone Naltrexone Methylnaltrexone	<ul style="list-style-type: none"> IV, reversal for respiratory depression PO, ↓ craving for alcohol and used in opiate addiction Treatment of opioid-induced constipation (does not cross BBB and won't precipitate withdrawal)

OTHER FEATURES OF OPIOID ANALGESICS

- Side effects of opioid analgesics:

Acute toxicity: classic triad

- Pinpoint pupils
- Respiratory depression
- Coma

Management of acute toxicity: supportive, IV naloxone

- Abuse liability of opioid analgesics:

Tolerance: pharmacodynamic; occurs to all effects, except miosis and constipation

Dependence: physical and psychologic

Withdrawal: y

- Yawning
- Lacrimation, rhinorrhea, salivation
- Anxiety, sweating, goose bumps
- Muscle cramps, spasms, CNS-originating pain

Management of withdrawal: supportive, methadone, clonidine