

Drugs and Behavior

Opiates

Opiates

- Narcotic (legal term) and analgesic (medical term)
- Analgesia
- Euphoria
- Drowsiness
- Changes in mood
- Reduced heart rate and respiration
- Miosis

Opiates

- Tolerance
- Physical dependence
- Overdose
- HIV/AIDS, hepatitis C

Opiates

- Pharmacokinetics
- Snort, smoke, inject
- Half life = 2 to 4 hours
- Inactivation by conjugation

Opiates

- Pharmacodynamics
- Small to moderate dose: 5-10 mg
 - anxiolysis
 - analgesia
 - drowsiness
- High dose: 10-20 mg
 - euphoria
 - restlessness
 - nausea

Opiates

- Pharmacodynamics
- Extremely high dose: >50mg
- Unconsciousness
- Seizures
- Death

Opiates

- μ opiate receptors
- High affinity for analgesics/narcotics (e.g., morphine, codeine, heroin)
- Found in the cortex, striatum, Nac, amygdala, septum

Opiates

- δ receptors
- Located in the neocortex, striatum, NAc

- κ receptor
- ketocyclozocien (hallucinations, dysphoria)
- Located in the hypothalamus, striatum and amygdala

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Opiates

- Gi-protein-link → AC inhibition
- Endogenous opioid neuropeptides:
 - Endorphins → μ
 - Enkephalins → δ
 - Dynorphins → κ
- Analgesia, pleasure etc.

Opiates

- Opiates inhibit DA, NE, 5-HT release (depression)
- Pain reduces subjective “high”
- Opiates produce more impairments to psychomotor performance compared to cognitive performance
- High vs. low doses of opiates on motor activity and reward seeking:

Opiates

- Tolerance
- Cross tolerance (e.g., alcohol)
- Withdrawal
- Harmful effects of abuse
- Overdose, quinine poisoning, using other depressants, novel environments .

Opiates

- Treatments
 - Methadone
 - LAAM
 - Buprenorphine
 - Naloxone
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- How else might we treat persons addicted to opiates?