

Patient Name

Address

Rx

Opioids

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Pharmacology and toxicology
department

**4th stage/ 1st trimester
2018**

PHARMACY

JAN 22 2014

Prescription Medication

TAKE TWO TABLETS BY MOUTH
THREE TIMES PER DAY OR AS NEEDED



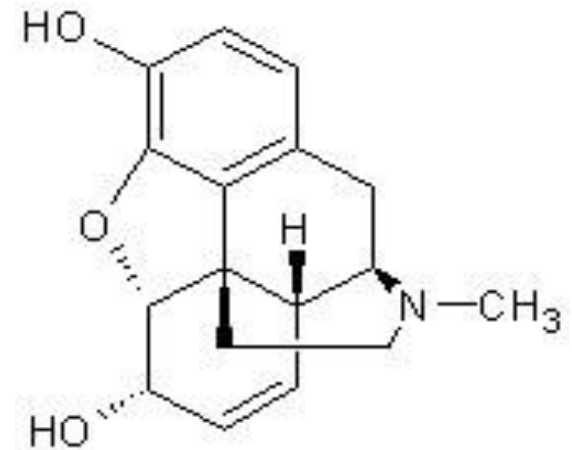
Opioids Analgesics

- **Opioids:** are natural, semisynthetic, or synthetic compounds which produce morphine like effect.
- **Opiate:** is a term restricted to drugs such as morphine and codeine obtained from the opium poppy.

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The main groups of Drugs

- 1. STRONG AGONISTS:** Morphine, Heroin, Meperidine, Methadone, Fentanyl, Sufentanil
- 2. MODERATE AGONISTS:** Codeine, Propoxyphene
- 3. MIXED AGONIST-ANTAGONIST:** Buprenorphine, Pentazocine
- 4. ANTAGONIST:** Naloxone
- 5. Other analgesic:** Tramadol



Structure of morphine

Natural

Morphine

Codeine

Semisynthetic

Hydromorphone

Hydrocodone

Oxycodone

Oxymorphone

Synthetic

Fentanyl

Meperidine

Methadone

Tapentadol

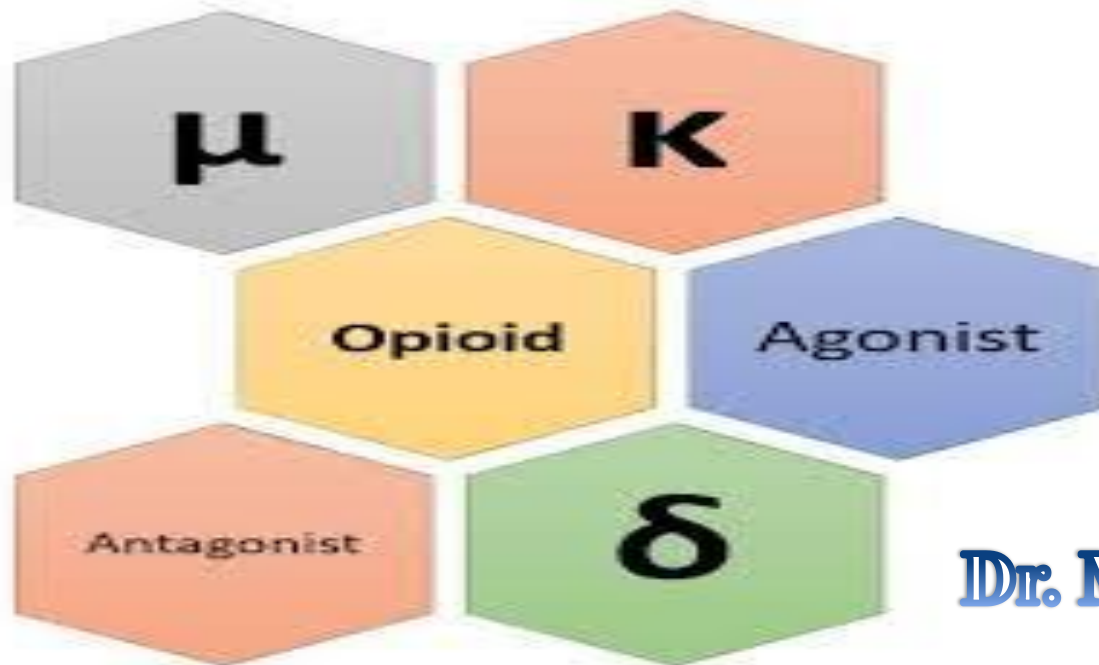
Tramadol

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- **Opioids receptors**

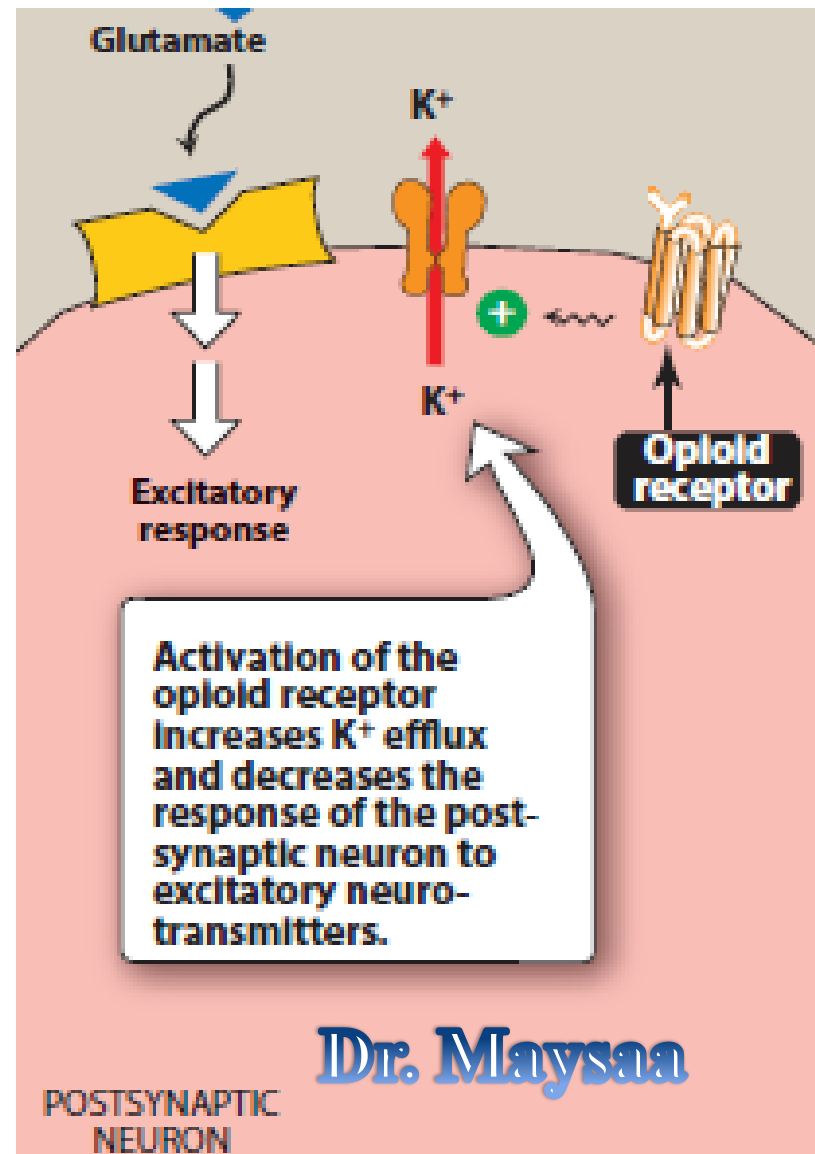
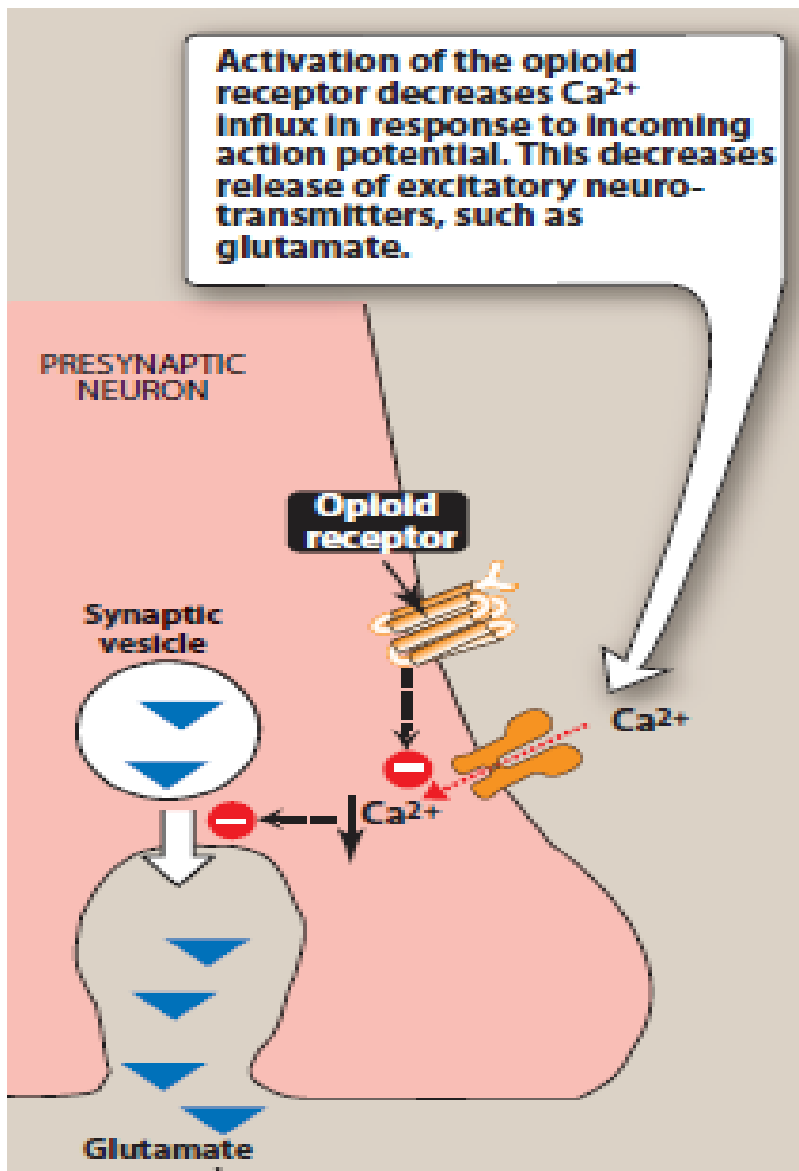
The major effects of the opioids are mediated by three receptor families.

All three opioid receptors are members of the G-protein–coupled receptor family.



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Mechanism of action of opioids



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Pharmacological actions of opioids

- a. Analgesic**
- b. Euphoria**
- c. Respiratory depression**
- d. depression of cough reflexes**
- e. nausea and vomiting**
- f. pupillary constriction**
- gastrointestinal tract**
- Other actions of opioid**

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Therapeutic use of opioids

1. Analgesia
2. Treatment of diarrhea: diphenoxylate and loperamide
3. Relief of cough
4. Treatment of acute pulmonary edema
5. Anesthesia: High-dose I.V morphine, fentanyl

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- **Pharmacokinetics**
- **Side effects of opioids**
 1. Nausea and vomiting
 2. Constipation, Urinary retention
 3. Drowsiness, Potential for addiction
 4. Respiratory depression and hypotension

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Choice of drugs

1. Morphine
2. Codeine
3. Diphenoxylate
4. Dexterpropoxyphen
5. Pethidine (meperidine)
6. Diamorphine (heroin)
7. Fentanyl and Alfentanil
8. Methadone
9. Pentazocine
10. Tramadol
11. Naloxone, naltrexone

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Chronic effects of opioids

A. Tolerance B. Dependence

Stage I: Up to 8 hours



Anxiety



Drug craving

Stage II: 8–24 hours



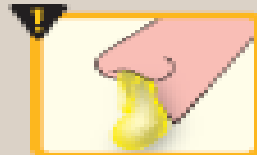
Anxiety



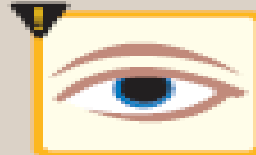
Insomnia



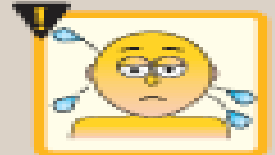
GI disturbance



Rhinorrhea

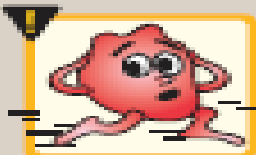


Mydriasis

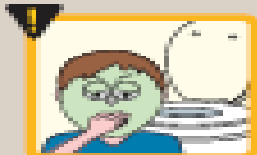


Diaphoresis

Stage III: Up to 3 days



Tachycardia



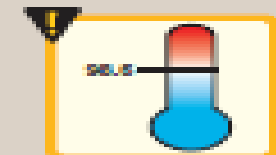
Nausea, vomiting



Hypertension



Diarrhea



Fever



Chills



Tremors



Seizure



Muscle spasms

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Figure 14.12
Opiate withdrawal syndrome. GI – gastrointestinal.