

Fentanyl Pharmacology, Indications, Dosage, Side effects and precautions

Fentanyl is a potent narcotic analgesic with a rapid onset and short duration of action. The principle actions of therapeutic value are [analgesia](#) and sedation.

The action of fentanyl is qualitatively similar to those of morphine and pethidine ie **analgesia, miosis, euphoria, bradycardia, respiratory depression, bronchoconstriction, muscle rigidity and suppression of cough reflexes.**

Indications and usage

Fentanyl is indicated for :

1. Analgesic action of short duration during anaesthetic periods, premedication, [induction](#) and maintenance in the immediate post operative period as need arises.
2. As a narcotic analgesic supplement in general and [regional anesthesia](#).
3. Administration with a neuroleptic injection as and anesthetic premedication, for the induction of anesthesia and or as an adjunct in the maintenance of general or [regional anesthesia](#).

Dosage and administration

Adult dose

Premedication

50-100mcg IM 30-60 minutes prior to surgery

Adjunct to regional anesthesia

Induction : 50-100 mcg initially intramuscularly and may be repeated at 2-3 minute intervals until the desired effect is achieved.

Maintenance: 25-50 mcg IV or IM

Post operatively : 50-100 mcg IM for the control of pain, thachypnea and emergence delirium. The dose may be repeated in one or two hours as needed.

Children Use

For induction and maintenance in children (2-12 years old), a reduced dose as low as **20-30mcg/10kg** is recommended.

Side effects

As with other narcotic analgesics, the most common serious side effect reported to occur with fentanyl are"

- Respiratory depression,
- Apnoea,
- Muscular rigidity and
- Bradycardia.

Contraindications

Fentanyl is contraindicated in patients known to be intolerant to Fentanyl or any other components of Fentanyl injection. Fentanyl should not be administered to children under 2 years of age or younger.

The use of fentanyl in patients who have received [MAO inhibitors](#) within 14 days is not recommended.

Precautions

Opioid analgesics impair the mental and physical ability for potentially dangerous tasks (eg driving a car or operating machinery).

Patients taking Fentanyl should be warned of these dangers.

The use of concomitant CNS active drugs requires special patient care and observation.

Use of fentanyl in pregnancy

Pregnancy: There is no adequate and well-controlled study in pregnant women. Fentanyl should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

Lactation: Fentanyl is excreted in breast milk. Therefore, Fentanyl should not be used in nursing women because of the possibility of sedation and respiratory depression in their infants.

Drug Interactions

Co-administration of the following drugs may enhance or prolong the effects of Fentanyl

- [Azole antifungals](#),
 - [macloride](#) antibiotics etc
- CNS depressant drugs may have addictive or potentiating effects with fentanyl

Overdose

In sufficient over-dosage, Fentanyl would produce narcosis, marked skeletal muscle rigidity, cardio-respiratory depression and cyanosis may also occur.

In the presence of hypoventilation or apnoea, oxygen should be administered and respiration should be assisted.

A specific narcotic antagonist such as [naloxone](#) should also be available for use as indicated to manage respiratory depression