

# LRI Emergency Department

## Standard Operating Procedure for Intranasal Analgesia (Fentanyl and Diamorphine) for Children in the Emergency Department

Staff relevant to:	Medical and Nursing Staff in PED
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## Key Points:

- If severe pain is anticipated, early adequate pre-emptive treatment is better than attempting to control pain after it has started.
- The intranasal route is a proven highly effective option for emergency management of pain in children.
- Wherever practical, remember to include non-opioid drugs as per the WHO analgesic ladder.

# Intranasal Fentanyl

## Indications

- Pain relief in moderate to severe pain requiring opiate analgesia
- No IV cannula in place as yet

## Contraindications

- Known Fentanyl Hypersensitivity
- Altered conscious state: GCS < 15
- Bilateral occluded nasal passages
- Epistaxis
- MAOI anti-depressant within 14 days

## Adverse Effects

Adverse effects are uncommon, but may include:

- Respiratory depression
- Hypotension
- Nausea and vomiting
- Itch
- Chest wall rigidity (only reported in rapid large IV doses)

## Dosage

Age: 1 – 18 years

Dose: 1.5 micrograms/kg per dose, intra-nasally (Table 1)

Repeat after 5 – 10 minutes, if required

If further analgesia required after the second dose, obtain medical review and consider alternative analgesia. (It is acceptable to prescribe multiple dosages if efficacy is good, however, consider whether IV analgesia is required longer term)

## Intranasal Fentanyl Administration

Weight	dose (mcg)	Dose Volume (to 1dp)
10	15	0.3ml
15	22.5	0.5ml
20	30	0.6ml
25	37.5	0.8ml
30	45	0.9ml
35	52.5	1.1ml
40	60	1.2ml
45	67.5	1.4ml
50	75	1.5ml
55	82.5	1.7ml
60	90	1.8ml

**Table 1: Intranasal Fentanyl Dosing Chart – based on 50mcg/ml ampoule**

1. Draw up calculated dose of Fentanyl according to weight
2. Attach atomiser (MAD device WolfeTory ®) to the 1ml syringe
3. Position patient either sitting up at 45° or with head to one side
4. Administer dose by inserting into nostril loosely and aim for centre of nasal cavity prior to squirting
5. If the dose is > 1mL, split between both nostrils to prevent loss of solution by sneezing or swallowing
6. Depress the plunger quickly
7. Hold atomiser in place for further 5 seconds to prevent medication from dribbling out of nostril

### Observations

Time of administration

Baseline pre-narcotic observations: HR, RR, BP, oxygen saturations

Observe closely for adverse effects and over sedation (See Treatment of Overdose below)

## Intranasal Diamorphine

(May be used as an alternative during periods of low Fentanyl availability)

**Diamorphine is given as a standard volume (0.2ml)**

### Indications

- Pain relief in moderate to severe pain requiring opiate analgesia
- No IV cannula in place as yet

### Contraindications

- As for intranasal Fentanyl

### Adverse Effects

- As for intranasal Fentanyl

### Dosage

Age: 1 – 18 years (10kg or over)

Dose: 100 micrograms/kg

If further analgesia required after the second dose, obtain medical review and consider alternative analgesia. (It is acceptable to prescribe multiple dosages if efficacy is good, however, consider whether IV analgesia is required longer term)

Patient Weight	Dose (mg)	Volume of water to add
10kg	1	1.9ml
15kg	1.5	1.3ml
20kg	2	1ml
25kg	2.5	0.8ml
30kg	3	0.7ml
35kg	3.5	0.6ml
40kg	4	0.5ml
50kg	5	0.4ml
60kg	6	0.3ml

**Table 2: Intranasal Diamorphine Dosing Chart – based on 10mg ampoule**

## Intranasal Diamorphine Administration

1. Based on patient weight, dilute 10mg of Diamorphine powder with the specific volume of water in Table 2 (gives 100mcg/kg in 0.2ml)
2. Draw up 0.2 ml into a 1ml syringe.
3. Attach atomiser (MAD device WolfeTory ®) to the 1ml syringe
4. Position patient either sitting up at 45° or with head to one side
5. Administer dose by inserting into nostril loosely and aim for centre of nasal cavity prior to squirting
6. Depress the plunger quickly
7. Hold atomiser in place for further 5 secs to prevent medication from dribbling out of nostril

**Note: Intranasal Diamorphine has traditionally been administered in PED without the use of an atomiser device which is therefore an option if none are available, as the dose volume is low.**

### Observations

- Time of administration
- Baseline pre-narcotic observations: HR, RR, BP, oxygen saturations
- Observe closely for adverse effects and over sedation

## Treatment of Overdose

- **CALL FOR HELP**
- Support airway
- Oxygen
- Assist ventilation
- Consider Naloxone as reversal agent:
  1. Should be administered for excess sedation or respiratory depression
  2. Dose – 1-5 micrograms/kg IM or IV, maximum dose of 100 micrograms, may be repeated every 2-3 minutes if required
  3. Has short duration of action – approximately 30 minutes, may necessitate repeat doses or infusion

## References

1. Intranasal Fentanyl, Emergency Department Clinical Guidelines, Princess Margaret Hospital Perth, Western Australia
2. Analgesia for children – drug doses, Sheffield Children’s Hospital (NHS) Foundation Trust, August 2013.

# Intranasal Fentanyl for Acute Severe Pain

**1**

Draw up calculated dose of Fentanyl according to weight



Weight	Dose (mcg)	Dose Volume (to 1dp)
10	15	0.3ml
15	22.5	0.5ml
20	30	0.6ml
25	37.5	0.8ml
30	45	0.9ml
35	52.5	1.1ml
40	60	1.2ml
45	67.5	1.4ml
50	75	1.5ml
55	82.5	1.7ml
60	90	1.8ml

Dose = 1.5 mcg/kg

Preparation = 50mcg/ml ampoules

**2** Attach atomiser to syringe

**3** Position patient (Either sitting up at 45° or with head to one side)

**4** Insert Atomiser into nostril loosely and aim for centre of nasal cavity

**5** If dose is > 1mL, split between both nostrils

**6** Depress plunger quickly

**7** Hold atomiser in place for further 5 seconds to prevent loss of medication

