

# CLINICAL GUIDE TO THE USE OF INTRANASAL ANALGESIA (FENTANYL) FOR CHILDREN IN THE EMERGENCY DEPARTMENT

### 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
- Remember to include non-opioid drugs as part of WHO analgesic ladder.

### Indications:

- Acute moderate to severe pain in children more than 1 year old, who do not have intravenous access.
- Children who are assessed to have pain scores of 7-10 on Visual Analogue Scale
- Children about to undergo a procedure (application of cast / burns dressing)

### Dose:

- Age 1-15 years
- 1.5mcg / kg per dose, intra-nasally
- Repeat after 5-10 minutes if required.

### **Contra-indications**:

- Less than 1 year
- Hypersensitivity to fentanyl or other opioid
- Head injury, Altered Conscious state with GCS < 15
- Major trauma / Hypovolemia
- Epistaxis
- Blocked nostrils / URTI

### Adverse effects:

- Respiratory depression
- Hypotension
- Nausea / Vomiting
- Itching

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# Dosing Chart for Intranasal fentanyl:

# Table 1

Use Fentanyl 50 microgram / mL (100 microgram/2mL ampoules for intravenous use)		
Weight	Dose	Final Volume of Fentanyl
(Round down to nearest weight indicated below)	(1.5 microgram/kg)	(Volumes have been rounded to nearest 0.05mL and syringe/MAD already primed to account for dead space)
Use a 1ml IV syringe for measuring doses up to 1ml		
6kg	9 microgram	0.2 ml
8kg	12 microgram	0.25 ml
10kg	15 microgram	0.3 ml
12kg	18 microgram	0.35 ml
16kg	24 microgram	0.5 ml
20kg	30 microgram	0.6 ml
24kg	36 microgram	0.7 ml
28kg	42 microgram	0.85 ml
32kg	48 microgram	0.95 ml
The doses below are greater than 1 ml therefore split dose between both nostrils using a 2 ml IV syringe		
36kg	54 microgram	1.1 ml
40kg	60 microgram	1.2 ml
45kg	67.5 microgram	1.35 ml
50kg	75 microgram	1.5 ml
55kg	82.5 microgram	1.65 ml
60kg	90 microgram	1.8 ml
Over 65 kg	97.5 microgram	1.95 ml

Written by: Dr Babu Benjamin, ED Consultant & Paediatric Lead for ED Approved by Drug & Therapeutics Committee: April 2023 Review Date: April 2026 Administration of intranasal fentanyl:

Weigh the child in kg. If not possible, estimate the child's weight

Determine intranasal fentanyl dose and volume using the dosing chart (table one)

Use a 1ml IV syringe to withdraw dose. If dose is greater than 1ml, use a 2ml syringe and split between both nostrils. Only IV syringes will fit the mucosal atomiser device

Ensure syringe is primed to account for the dead space in the syringe and the final volume reads as per the dosing chart (table one)

Attach atomiser to syringe

Position child in supine postition or tilt head back

Occlude one nostril and insert atomiser into the other nostril loosely

Depress syringe plunger and at the same time ask the child to sniff

Hold atomiser in place for a further 5 seconds

Record observations pre-administration and at 15 and 30 minutes post administration using the intranasal fentanyl observation chart

Observe for a minimum of one hour post dose

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# **Observations**:

- Time of administration
- Pain score
- Baseline observations Heart rate, Respiratory rate, Saturations, Glasgow Coma Scale (GCS), Blood Pressure (BP).
- Observations should be done at 15 minutes and 30 minutes after administration of analgesia.

# Estimation of weight:

- Every attempt should be made to weigh the child. Where it's not practical, APLS weight estimation formula can be used.
- 1 5 years = 2 x (age in years ) + 8
- 6 12 years = 3 x (age in years ) + 7

# Co-analgesia:

- All children receiving intranasal fentanyl should receive paracetamol & Ibuprofen where appropriate.
- Consider using Nitrous oxide (Entonox) where appropriate.
- Do not given intravenous opiates for at least 20minutes following administration of intranasal fentanyl.