

FENTANYL

Indication		<ul style="list-style-type: none"> • Induction agent for intubation¹ • Anaesthesia and analgesia¹
INTRAVENOUS	Presentation	<ul style="list-style-type: none"> • Ampoule: 100 microgram in 2 mL 250 microgram in 5 mL 500 microgram in 10 mL
	Dosage (intubation premedication)	<ul style="list-style-type: none"> • IV injection² <ul style="list-style-type: none"> ○ 4 microgram/kg
	Dosage (unventilated baby)	<ul style="list-style-type: none"> • IV injection² <ul style="list-style-type: none"> ○ 0.5–3 microgram/kg stat ○ Repeat every 2–4 hours as needed • IV infusion² <ul style="list-style-type: none"> ○ 0.5–2 microgram/kg/hour
	Dosage (ventilated baby)	<ul style="list-style-type: none"> • IV injection² <ul style="list-style-type: none"> ○ 0.5–4 microgram/kg stat • IV infusion² <ul style="list-style-type: none"> ○ 1–5 microgram/kg/hour
	Preparation	<ul style="list-style-type: none"> • IV injection for intubation premedication <ul style="list-style-type: none"> ○ Draw up 100 microgram and make up to 10 mL total volume with compatible fluid ○ <i>Concentration now equal to 10 microgram/mL</i>
		<ul style="list-style-type: none"> • IV injection (ventilated and unventilated) <ul style="list-style-type: none"> ○ Draw up <u>100 microgram/kg</u> and make up to 10 mL total volume with compatible fluid ○ <i>Concentration now equal to 10 microgram/kg/mL</i>
		<ul style="list-style-type: none"> • IV infusion <ul style="list-style-type: none"> ○ Draw up <u>250 microgram/kg</u> and make up to 50 mL total volume with compatible fluid³ ○ <i>Concentration now equal to 5 microgram/kg/mL</i>
Administration	<ul style="list-style-type: none"> • IV injection for intubation premedication <ul style="list-style-type: none"> ○ Draw up prescribed dose from 10 microgram/mL solution ○ Refer to Quick guide for premedication IV bolus dose ○ Administer over 3–5 minutes³ ○ Wait at least 3 minutes for onset of action after giving dose 	
	<ul style="list-style-type: none"> • IV injection <ul style="list-style-type: none"> ○ Draw up prescribed dose from 10 microgram/kg/mL solution ○ If dose less than 5 microgram/kg then administer over 3–5 minutes³ ○ If dose 5 microgram/kg or more then administer over 10 minutes³ • IV infusion <ul style="list-style-type: none"> ○ Use a medication safety infusion pump ○ <i>A 5 microgram/kg/mL solution infused at 1 mL/hour, delivers 5 micrograms/kg/hour</i> 	
IM	Presentation	<ul style="list-style-type: none"> • Ampoule 100 microgram in 2 mL
	Dosage ² (unventilated)	<ul style="list-style-type: none"> • 0.5–3 microgram/kg
	Preparation	<ul style="list-style-type: none"> • Use undiluted³
	Administration	<ul style="list-style-type: none"> • Draw up prescribed dose • Intramuscular injection into thickest part of the vastus lateralis in the anterolateral thigh (maximum 0.5 mL per site)⁴



Special considerations	<ul style="list-style-type: none"> • S8 medicine. High risk of causing significant patient harm with errors¹ • May cause chest wall rigidity (avoid rapid administration⁵) • If prescribed for rapid sequence intubation <ul style="list-style-type: none"> ○ Access to skilled emergency airway management is required ○ If chest wall rigidity occurs, administer muscle relaxant • If prescribed for palliative care consult with Paediatric Palliative Care Team (1800 249 648) • Infusions may be prescribed as standard double or quadruple or greater strength <ul style="list-style-type: none"> ○ Refer to Quick guide below for IV infusion concentration • IM route only if IV route not available³ • UAC route: Consult with neonatologist/paediatrician prior to use and refer to Queensland Clinical Guideline: <i>Neonatal medicines</i>⁶
Monitoring	<ul style="list-style-type: none"> • Level of sedation³ • Continuous cardiorespiratory monitoring^{2,3} and SpO₂ • Urinary output during infusion (for retention)
Compatibility	<ul style="list-style-type: none"> • Fluids <ul style="list-style-type: none"> ○ 5% glucose³, 0.9% sodium chloride³ • Y-site <ul style="list-style-type: none"> ○ Acyclovir³, amiodarone³, atracurium³, atropine³, caffeine citrate³, calcium gluconate³, caspofungin³, cefazolin³, cefotaxime³, cisatracurium³, dexamethasone³, dobutamine³, dopamine³, esmolol³, furosemide (frusemide)³, glyceryl trinitrate³, heparin sodium³, hyoscine hydrobromide³, linezolid³, metoclopramide³, midazolam³, milrinone³, noradrenaline (norepinephrine)³, paracetamol³, potassium chloride³, vecuronium³
Incompatibility	<ul style="list-style-type: none"> • PN and fat emulsion: co-infusion with fentanyl not recommended (evidence limited). If unavoidable, seek pharmacist advice first, filter infusion and flush before and after • Fluids <ul style="list-style-type: none"> ○ No information³ • Drugs <ul style="list-style-type: none"> ○ Dantrolene⁷, diazoxide⁷, hydroxocobalamine³, pantoprazole⁷, phenytoin⁷
Interactions	<ul style="list-style-type: none"> • Concurrent use with CYP3A4 INHIBITORS may result in increased risk of fentanyl toxicity • Concurrent use of Fentanyl and CYP3A4 INDUCERS may result in decreased plasma concentrations of fentanyl (e.g. amiodarone)
Stability	<ul style="list-style-type: none"> • Undiluted solution <ul style="list-style-type: none"> ○ Is clear and colourless¹ ○ Store below 25 °C¹. Protect from light³
Side effects	<ul style="list-style-type: none"> • Circulatory: bradycardia, hypotension⁸ • Musculoskeletal: muscle rigidity⁸ • Respiratory: respiratory depression, apnoea⁸ • Urinary: retention with continuous infusion²
Actions	<ul style="list-style-type: none"> • Synthetic opioid narcotic analgesic that is 50 to 100 times more potent than morphine on a weight basis² • Rapid onset; average duration 30–60 minutes⁹
Abbreviations	IM: intramuscular, IV: intravenous, UAC: umbilical artery catheter
Keywords	fentanyl, sublimaze, opioid, analgesic

Quick guide: fentanyl premedication IV BOLUS dose

Fentanyl premedication dose of 4 microgram/kg	Round weight to nearest 0.5 kg							
	0.5 kg	1 kg	1.5 kg	2 kg	2.5 kg	3 kg	3.5 kg	4 kg
Use the IV injection reconstituted concentration of 10 microgram/mL								
Dose (microgram) for approximate weight	2 microgram	4 microgram	6 microgram	8 microgram	10 microgram	12 microgram	14 microgram	16 microgram
Administration volume (mL)	0.2 mL	0.4 mL	0.6 mL	0.8 mL	1 mL	1.2 mL	1.4 mL	1.6 mL

The Queensland Clinical Guideline *Neonatal Medicines* is integral to and should be read in conjunction with this monograph. Refer to the disclaimer. Destroy all printed copies of this monograph after use.

References

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Document history

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