Atropine

Newborn use only

2026

Alert	
Indication	Premedication for intubation
Action	Competitively inhibits acetylcholine at acetylcholine receptors, decreases the effects of the parasympathetic nervous system and increases the effects of the sympathetic nervous system. Increases heart rate with a peak effect in 2–4 minutes after IV administration. Salivary secretion and intestinal and gastric motor activity are decreased for up to 6 hours. Bronchial smooth muscle relaxes, decreasing airways resistance.
Drug Type	Anticholinergic
Trade Name	Atropine sulphate
Presentation	600 microgram/1mL ampoule.
Dosage	IV, IM: 10 microgram/kg/dose (range 10–20 microgram/kg/dose)
Route	IV, IM
Preparation	**IV, IM:** **<u>Bodyweight <1 Kg</u>** Draw up 0.2 mL (120 microgram of atropine) and add 9.8 mL sodium chloride 0.9% to make a final volume of 10 mL with a concentration of 12 microgram/mL. **<u>Bodyweight ≥1 Kg</u>** Draw up 0.5 mL (300 microgram of atropine) and add 5.5 mL sodium chloride 0.9% to make a final volume of 6 mL with a concentration of 50 microgram/mL.
Administration	IV slow bolus over 1 minute. Can be repeated after 5 minutes if required.
Monitoring	Continuous cardiorespiratory monitoring. Monitor temperature and abdominal distension.
Contraindications	Hypersensitivity to atropine. Arrhythmias, tachycardia, congenital glaucoma, intestinal obstruction, obstructive uropathy, asthma.
Precautions	Fever — in febrile patients, there is risk of provoking hyperpyrexia. Gastro-oesophageal reflux
Drug Interactions	May increase serum concentrations of thiazide diuretics e.g. hydrochlorothiazide. May increase the risk of opioid-induced constipation and urinary retention.
Adverse Reactions	Tachycardia, arrhythmia, hyperthermia, flushing, irritability, abdominal distension, oesophageal reflux, decreased gut motility, urinary retention, dry mouth.
Overdose	Atropine toxicity with anticholinergic symptoms can be treated by physostigmine (0.01–0.04 mg/kg/dose) by slow IV infusion. AUSTRALIA: Contact the Poisons Information Centre on 13 11 26 for information on the management of overdose. NEW ZEALAND: Contact the National Poisons Centre on 0800 764 766 for information on the management of overdose.
Compatibility	Fluids: sodium chloride 0.9%. No data for other solutions. PN at Y site: No data Lipid emulsion at Y site: No data Y-site: Adrenaline (epinephrine), amikacin, aminophylline, amiodarone, calcium chloride, calcium gluconate, cefazolin, cefotaxime, ceftazidime, cefuroxime, ceftriaxone, chlorothiazide, clindamycin, dexamethasone, digoxin, dopamine, dobutamine, erythromycin, famotidine, fentanyl, fluconazole, folic acid, furosemide (frusemide), gentamicin, glycopyrronium (glycopyrrolate), heparin, hydrocortisone sodium succinate, imipenem, indometacin, insulin, lidocaine (lignocaine), magnesium sulfate heptahydrate, meropenem, methadone, metoclopramide hydrochloride, morphine sulfate pentahydrate, midazolam, nafcillin, naloxone, noradrenaline (norepinephrine), benzylpenicillin, phenobarbital (phenobarbitone), piperacillin, potassium chloride, , propranolol, pyridoxine, sodium bicarbonate, ranitidine, theophylline, tobramycin, vancomycin.
Incompatibility	Y-site: Ampicillin, Diazoxide, diazepam, flucloxacillin, hydralazine, pantoprazole, phenytoin, propofol, sulfamethoxazole-trimethoprim, thiopentone.
Stability	Use once and discard residual.
Storage	IV − unopened vials stable at room temperature (20−25°C). Protect vial from light.

Evidence	**Endotracheal intubation** Intravenous atropine prior to intubation is associated with a higher mean heart rate and less change in heart rate compared with no medication.[1] (LOE II GOR C) **Preanaesthetic medication** Oral atropine given 30–90 minutes prior to induction of anaesthesia attenuates cardiovascular depression and the incidence of airway complications at induction and emergence from anaesthesia.[2-4] (LOE II GOR B) **Pharmacokinetics** Reports describing the pharmacokinetics of atropine in neonates and children are limited. Unless specified, the following information pertains to pharmacokinetics in adults. Atropine is well distributed throughout the body. It crosses the blood-brain barrier and has a large apparent volume of distribution (2 to 4 L/kg). It is metabolised in the liver to several metabolites and excreted mainly in the urine. Atropine has a plasma half-life of 2–3 hours. Following intramuscular administration, elimination appears to be biphasic with an initial phase of about 2 hours and a half-life in the terminal phase of at least 12.5 hours. In children, the plasma half-life is approximately 6.5 hours.[5] With IV administration, increased heart rate effect peaks within 2–4 minutes. Serum concentrations drop rapidly within the first 10 minutes then decrease more gradually. Atropine is well absorbed following IM administration (peak plasma concentration within 30 minutes; maximum heart rate reached at 15–50 minutes). The duration of effect on heart rate is up to five hours. Low doses of the drug can cause a paradoxical decrease in heart rate. One hour after either intramuscular or intravenous injection, atropine concentrations are very similar.[5]
References	1. Kelly MA, Finer NN. Nasotracheal intubation in the neonate: physiologic responses and effects of atropine and pancuronium. Journal of Pediatrics 1984:105;303-9. 2. Shaw CA, Kelleher AA, Gill CP, Murdoch LJ, Stables RH, Black AE. Comparison of the incidence of complications at induction and emergence in infants receiving oral atropine vs no premedication. British Journal of Anaesthesia 2000:84;174-8. 3. Cartabuke RS, Davidson PJ, Warner LO. Is premedication with oral glycopyrrolate as effective as oral atropine in attenuating cardiovascular depression in infants receiving halothane for induction of anesthesia?. Anesthesia & Analgesia 1991:73;271-4. 4. Miller BR, Friesen RH. Oral atropine premedication in infants attenuates cardiovascular depression during halothane anesthesia. Anesthesia & Analgesia 1988:67;180. 5. MerativeTM Micromedex® Complete IV Compatibility (electronic version). Merative, Ann Arbor, Michigan, USA. Available at: https://www.micromedexsolutions.com/ (cited: Aug/06/2026).

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Authors Contribution (SB to update)

Current author/s	Srinivas Bolisetty
Evidence Review	Srinivas Bolisetty
Nursing Review	Louise Murphy, Bryony Malloy, Celia Cunha da Silva
Pharmacy Review	Simarjit Kaur
ANMF Group contributors	Nilkant Phad, Bhavesh Mehta, Amber Seigel, Rebecca Barzegar, Jutta van den Boom, Mohammed Irfan Azeem, Michelle Jenkins, Kerrie Knox, Cindy Chen, Thao Tran, Benjamin Emerson-Parker, Renae Gengaroli, Bryony Malloy, Dianne Lee, Gloria Yoo, Catherine Walsh
Final editing	Srinivas Bolisetty
Facilitator	Srinivas Bolisetty