SUXAMETHONIUM
NEWBORN USE ONLY

2026

Alert	Intubation, suction and ventilation equipment MUST be ready prior to administration of suxamethonium. A medical officer/nurse practitioner (preferably two personnel) experienced in advanced neonatal airway management must be present when suxamethonium is being administered. There is risk of cardiac arrest from hyperkalemic rhabdomyolysis.
Indication	Premedication for intubation.
Action	Short-acting, depolarising neuromuscular blocker. It mimics acetylcholine and acts at cholinergic receptors, depolarising the motor end plate resulting in neuromuscular blockade.
Drug Type	Neuromuscular blocking agent (depolarising)
Trade Name	Suxamethonium Juno, Suxamethonium Medsurge
Presentation	100 mg/2mL ampoule. *See "Alert" section above to account for brand difference.
Dose	**Note:** Suxamethonium should not be used without additional sedation. **IV (preferred):** 2 mg/kg (up to 3 mg/kg) **IM (only if IV is not accessible):** 3–4 mg/kg[9] (onset of action can be delayed up to 3 minutes and duration of action is up to 15 minutes)
Dose adjustment	Therapeutic hypothermia: No information on the dose adjustment, but has been used. ECMO: Not applicable. Renal impairment: use with caution as use associated with hyperkalaemia. Hepatic impairment: may prolong duration of action. Avoid repeated doses.
Route	IV, IM
Maximum Dose	IV: 3 mg/kg/dose; IM: 4 mg/kg/dose
Preparation	**IV:** **<u>Bodyweight <1 Kg</u>** Draw up 1 mL (50 mg of suxamethonium) and add 9 mL sodium chloride 0.9% to make final volume 10 mL with a concentration of 5 mg/mL. **<u>Bodyweight≥1 Kg</u>** Draw up 2 mL (100 mg of suxamethonium) and add 8 mL sodium chloride 0.9% to make final volume 10 mL with a concentration of 10 mg/mL. **IM**: Administer undiluted.
Administration	IV: Rapid injection at proximal cannula site. IM: Administer in anterior thigh muscle.
Monitoring	Continuous cardiorespiratory monitoring. Monitor temperature, blood pressure, oxygenation and assisted ventilator status.
Contraindications	Hyperkalaemia Family history of malignant hyperthermia Skeletal muscle myopathy Hypersensitivity to suxamethonium
Precautions	Anaphylaxis: Severe anaphylactic reactions (some life-threatening and fatal) have been reported. Cross-sensitivity with other neuromuscular-blocking agents may occur; use extreme caution in patients with previous anaphylactic reactions. Bradycardia: May increase vagal tone. Risk of bradycardia may be increased with second dose and may occur more often in children. Occurrence may be reduced by pre-treating with anticholinergic agents (e.g. atropine). May Increase intraocular pressure. May cause a transient increase in intracranial pressure. May increase intragastric pressure, resulting in regurgitation and aspiration of stomach contents. Malignant hyperthermia: Use may be associated with acute onset of malignant hyperthermia; risk may be increased with concomitant administration of volatile anaesthetics.
Drug Interactions	May enhance the effect of other agents with neuromuscular-blocking properties: acetylcholinesterase inhibitors; magnesium, vancomycin, cyclophosphamide, ciclosporin, esmolol, lincosamide, loop diuretics.

	Aminoglycosides: May enhance the respiratory depressant effect of aminoglycosides. Opioid analgesics: Suxamethonium may enhance the bradycardic effect of opioid analgesics. Cardiac glycosides: May enhance the arrhythmogenic effect of cardiac glycosides
Adverse Reactions	Bradycardia - especially after a second dose of suxamethonium. May be prevented by administration of atropine prior to administration of suxamethonium. Hyperkalaemia Prolonged paralysis in infants with deficiency of pseudocholinesterase. Hypersensitivity reactions Malignant hyperthermia
Overdose	Supportive therapy. 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:** Glucose 5%, glucose 10%, sodium chloride 0.9%, glucose 5% in sodium chloride 0.9%, glucose 5% in sodium chloride 0.45%, sodium chloride 0.45%. **Amino acid and fat emulsions at Y site:** No information. **Y-site:** Aciclovir, adrenaline (epinephrine), amikacin, amphotericin B lipid complex, atropine, aziTHROMYCIN, calcium chloride, calcium gluconate, cefaZOLin, cefiderocol, cefOTAXIME, cefTAZIDIME, cefTRIAXONE, clindamycin, dexAMETHASOne, dexMEDETOMIDine, digoxin, dobutamine, dopamine, epoetin alfa, ertapenem sodium, erythromycin, esmolol, fentanyl, flucONAZOLe, folic acid, furosemide, gentamicin, heparin, hydrocortisone, lincomycin, linEZOLID, magnesium sulfate, methylprednisolone, metronidazole, midazolam, morphine sulfate, moxifloxacin, naloxone, noradrenaline (norepinephrine bitartrate), octreotide, pantoprazole, piperacillin/tazobactam, potassium chloride, pyridoxine, sodium acetate, sodium nitroprusside, vancomycin, vasopressin, vecuronium. vitamin B complex with C.
Incompatibility	**Amino acid and fat emulsions at Y site:** No information. **Y-site:** Amphotericin B, ganciclovir, indomethacin, phenytoin, sodium bicarbonate, alkaline solutions with pH > 8.5; sulfamethoxazole/trimethoprim **Variable compatibility Y-site:** Ampicillin, benzylpenicillin (penicillin G sodium), hydrALAZINe, insulin regular, phenobarbital.
Stability	Discard any unused portion.
Storage	Store in the refrigerator at 2°C to 8°C. DO NOT FREEZE.
Evidence	**Efficacy** Suxamethonium in combination with other drugs (analgesics and vagolytic agents) resulted in superior intubation conditions and a shorter procedure duration[1-6]. (Level II, Grade A) For laparoscopic pyloromyotomy in term infants using propofol, sevoflurane and no intraoperative opioid, succinylcholine may be the neuromuscular blocking drug of choice, provided no contraindication is present[4]. (Level III-3, Grade B) **Safety** Suxamethonium has been very widely used, but has several rare side effects and causes an increase in blood pressure, simultaneously with depolarisation.[1,2] (Level II Grade B) Hyperkalaemia may occur, but major elevations are uncommon. It may trigger malignant hyperkalaemia, a rare autosomal dominant disorder of skeletal muscles that remain asymptomatic unless triggering substances are given. It should not be used in infants with hyperkalaemia or family history of malignant hyperthermia.[1] (Level IV Grade D) It can cause prolonged neuromuscular blockade requiring ventilation until spontaneous resolution occurs in infants with pseudocholinesterase deficiency.[7] (Level IV Grade D) **Pharmacokinetics** Suxamethonium has a rapid onset of action (30-60 seconds) and a short duration of action (3 to 6 minutes) with IV administration. The increased dose (2–3 mg/kg vs. 1 mg/kg in adults) requirement of succinylcholine in younger patients is thought to be due to its rapid distribution into an enlarged volume of extracellular fluid rather than an altered response to the action of the drug at neuromuscular junction nicotinic acetylcholine receptors.[8] (Level III Grade C)

References	1. Barrington K. Premedication for endotracheal intubation in the newborn infant. Paediatrics & child health 2011;16(3):159-171. 2. Barrington KJ, Finer NN, Etches PC. Succinylcholine and atropine for premedication of the newborn infant before nasotracheal intubation: a randomized, controlled trial. Critical care medicine 1989;17(12):1293-1296. 3. Ghanta S, Abdel-Latif ME, Lui K, Ravindranathan H, Awad J, Oei J. Propofol compared with the morphine, atropine, and suxamethonium regimen as induction agents for neonatal endotracheal intubation: a randomized, controlled trial. Pediatrics 2007;119(6):e1248-1255. 4. Ghazal E, Amin A, Wu A, Felema B, Applegate RL, 2nd. Impact of rocuronium vs succinylcholine neuromuscular blocking drug choice for laparoscopic pyloromyotomy: is there a difference in time to transport to recovery? Paediatr Anaesth 2013;23(4):316-321. 5. Norman E, Wikstrom S, Hellstrom-Westas L, Turpeinen U, Hamalainen E, Fellman V. Rapid sequence induction is superior to morphine for intubation of preterm infants: a randomized controlled trial. The Journal of pediatrics 2011;159(6):893-899 e891. 6. Oei J, Hari R, Butha T, Lui K. Facilitation of neonatal nasotracheal intubation with premedication: a randomized controlled trial. Journal of paediatrics and child health 2002;38(2):146-150. 7. Ho VW, Osiovich H. A case of pseudocholinesterase deficiency in the neonate. American journal of perinatology. 1999;16(7):351-353. 8. Meakin G, McKiernan EP, Morris P, Baker RD. Dose-response curves for suxamethonium in neonates, infants and children. British journal of anaesthesia 1989;62(6):655-658. 9. MerativeTM Micromedex® Complete IV Compatibility (electronic version). Merative, Ann Arbor, Michigan, USA. Available at: https://www.micromedexsolutions.com/ (cited: Aug/06/2026).

VERSION/NUMBER	DATE
Original	12/12/2016
Revised 2.0	15/06/2020
Version 3.0	26/08/2021
Version 3.0 (Minor errata)	7/09/2023
Current 4.0	6/08/2026
REVIEW	6/08/2031

Authors Contribution of the current version

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