DOBUTAMINE

Indication	• Treatment of hypoperfusion and hypotension[1] • Increase cardiac output in neonates with myocardial dysfunction and unchanged or increased systemic vascular resistance[1]

INTRAVENOUS

Presentation	• Vial: 250 mg in 20 mL (12.5 mg in 1 mL)
Dosage[1,2]	• 5–20 microgram/kg/minute o Usually start at 5–10 micrograms/kg/minute o Titrate according to response
Dilution[2]	• Single strength infusion (refer to Quick guide for preparation of other strengths) o Draw up 30 mg/kg of dobutamine and make up to 50 mL total volume with compatible fluid o *Concentration now equal 600 microgram/kg/mL*
Administration	• IV infusion via medication safety infusion pump[3] o *Single strength infusion (600 microgram/kg/mL) infused at 1 mL/hour, delivers 10 microgram/kg/minute*

Contraindication Caution	• Contraindication o Previous hypersensitivity reaction[4] • Caution o Nil known
Special considerations	• Correct hypovolaemia prior to commencement[1] • Infusions may be prescribed as single, double, or greater strength (refer to Quick Guide) o Maximum concentration 5 mg/mL[3] o Low-stiction syringe recommended, but do not withhold treatment if unavailable • Infusion via CVL, UVC or large peripheral vein preferred[3] o Use a dedicated IV line or Y site to avoid accidental bolus o Do not flush the IV line o Do not cease abruptly (reduce dose gradually[3])
Monitoring	• Consider baseline echocardiogram (may assist in determining most appropriate inotrope or vasopressor) • Continuous ECG and arterial BP[1,2] • Extravasation risk: can cause necrosis[3]
Compatibility	• Fluids o 5% glucose[3], 10% glucose[3], 0.9% sodium chloride[3] • Y-site (at 6 mg/mL or more) o Amikacin[3], amiodarone[3], atracurium[3], calcium chloride[3], dopamine[3], fentanyl[3], fluconazole[3], gentamicin[3], glyceryl trinitrate[3], lidocaine[3], magnesium sulfate[3], milrinone[3], morphine[5], noradrenaline[3], posaconazole[3], suxamethonium[3], tobramycin[3], vancomycin[3]
Incompatibility	• Fluids o Sodium bicarbonate or other alkaline solutions, diluents containing sodium bisulphite[3] • Drugs o Aciclovir[3], aminophylline[3], ampicillin[3], azathioprine[3], benzylpenicillin[3], cefazolin[3], cefotaxime[3], cefoxitin[3], ceftriaxone[3], cefuroxime[3], dexamethasone[3], ertapenem[3], esomeprazole[3], flucloxacillin[3], folic acid[3], foscarnet[3], ganciclovir[3], heparin sodium[3], hydrocortisone sodium succinate[3], hydroxocobalamin[3], meropenem[3], micafungin[3], phenobarbital[3] piperacillin-tazobactam[3], sodium bicarbonate[3]
Interactions	• Nil known
Stability	• Vial o Store below 25 °C. Protect from light • Infusion solution o Stable for 24 hours below 25 °C[4] o Solution may be pink and the colour increase over time. No significant loss of potency while stable[3]

Side effects	• Blood pathology: eosinophilia[2] • Circulatory: tachycardia at high dose[2], hypertension or hypotension[2], ventricular ectopic activity[6] • Immune: rash, fever and bronchospasm[3]. Brands that contain sodium metabisulfite may cause allergic reactions[3] • Respiratory: bronchospasm[2]
Actions	• Inotropic agent that stimulates the beta receptors of the heart while producing hypertensive, arrhythmogenic, and vasodilative effects[4]
Abbreviations	BP: blood pressure, ECG: electrocardiogram, IV: intravenous
Keywords	neonatal medicine, neonatal monograph, dobutamine, hypotension, hypoperfusion, blood pressure, BP, myocardial dysfunction, cardiac output, inotrope

The Queensland Clinical Guideline *Neonatal Medicines*[7] 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.

Quick Guide: dobutamine infusion concentrations

Use in conjunction with dilution instructions			
Draw up dobutamine dose (mg/kg)	**Make up to total volume (mL)**	**Infusion rate (mL/hour)**	**Delivers (microgram/kg/minute)**
30 mg/kg (single strength)	50 mL	@ 1 mL/hour	10 microgram/kg/minute
60 mg/kg (double strength)	50 mL	@ 0.5 mL/hour	10 microgram/kg/minute
120 mg/kg (quadruple strength)	50 mL	@ 0.25 mL/hour	10 microgram/kg/minute

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Document history

ID number	Effective	Review	Summary of updates
NMedQ19.026-V1-R24	Oct 2019	Oct 2024	Endorsed by Queensland Neonatal Services Advisory Group (QNSAG)
NMedQ25.026-V2-R30	21/10/2025	21/10/2030	Full review. Endorsed by QNSAG • No change to dose or frequency • Amended: Quick guide presentation • Updated compatibilities, incompatibilities, references and presentation

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