

DOBUTAMINE

Indication	<ul style="list-style-type: none"> • Treatment of hypoperfusion and hypotension¹ • Increase cardiac output in neonates with myocardial dysfunction and unchanged or increased systemic vascular resistance¹ 	
INTRAVENOUS	Presentation	<ul style="list-style-type: none"> • Vial: 250 mg in 20 mL (12.5 mg in 1 mL)
	Dosage	<ul style="list-style-type: none"> • 5–20 microgram/kg/minute^{1,2} <ul style="list-style-type: none"> ○ Usually start at 5–10 micrograms/kg/minute³ ○ Titrate according to response²
	Preparation	<ul style="list-style-type: none"> • Single strength infusion <ul style="list-style-type: none"> ○ Draw up 30 mg/kg of dobutamine and make up to 50 mL total volume with compatible fluid² ○ <i>Concentration now equal 600 microgram/kg/mL</i>
	Administration	<ul style="list-style-type: none"> • IV infusion via medication safety infusion pump⁴ <ul style="list-style-type: none"> ○ <i>Single strength infusion (600 microgram/kg/mL) infused at 1 mL/hour delivers 10 microgram/kg/minute</i>
Special considerations	<ul style="list-style-type: none"> • Correct hypovolaemia prior to commencement¹ • Infusions may be prescribed as single, double, quadruple or greater strength <ul style="list-style-type: none"> ○ Maximum concentration 5 mg/mL⁴ ○ Low-stiction syringe recommended, but do not withhold treatment if unavailable • Infusion via CVL, UVC or large peripheral vein preferred⁴ <ul style="list-style-type: none"> ○ Use a dedicated IV line or Y site to avoid accidental bolus ○ Do not flush the IV line • Do not cease abruptly (reduce dose gradually⁴) 	
Monitoring	<ul style="list-style-type: none"> • Consider baseline echocardiogram (may assist in determining most appropriate inotrope or vasopressor) • Continuous ECG and arterial BP² • Extravasation risk: can cause necrosis⁴ 	
Compatibility	<ul style="list-style-type: none"> • Fluids⁴ <ul style="list-style-type: none"> ○ 5% glucose⁴, 10% glucose⁴, 0.9% sodium chloride⁴ • Y-site <ul style="list-style-type: none"> ○ Ciprofloxacin⁴, dopamine⁴, adrenaline (epinephrine)⁴, fluconazole⁴, glyceryl trinitrate⁴, milrinone⁴, morphine⁶, noradrenaline (norepinephrine)⁴, ranitidine⁴, vecuronium⁴ 	
Incompatibility	<ul style="list-style-type: none"> • Fluids <ul style="list-style-type: none"> ○ Sodium bicarbonate or other alkaline solutions, diluents containing both sodium bisulphite and ethanol⁴ • Drugs <ul style="list-style-type: none"> ○ Aciclovir⁴, amphotericin B (amphotericin)⁶, ampicillin⁴, benzylpenicillin⁴, cefazolin⁴, cefotaxime⁴, ceftriaxone⁴, dexamethasone⁴, flucloxacillin⁴, heparin⁴, hydrocortisone⁴, indometacin⁴, phenobarbital (phenobarbitone)⁴, piperacillin-tazobactam⁴, sodium bicarbonate⁴, ticarcillin-clavulanate⁴ 	
Interactions	<ul style="list-style-type: none"> • Nil known 	
Stability	<ul style="list-style-type: none"> • Vial <ul style="list-style-type: none"> ○ Store below 25 °C. Protect from light⁴ • Reconstituted solution <ul style="list-style-type: none"> ○ Stable for 6 hours at 25 °C or 24 hours at 2–8 °C⁴ • Infusion solution <ul style="list-style-type: none"> ○ Stable for 24 hours below 25 °C⁴ ○ Solution may be pink and the colour increase over time. No significant loss of potency while stable⁴ ○ Discard if hazy or contains particles⁴ 	

Side effects	<ul style="list-style-type: none"> Blood pathology: eosinophilia² Circulatory: tachycardia at high dose², hypertension or hypotension², ventricular ectopic activity⁵ Immune: rash, fever and bronchospasm.⁴ Brands that contain sodium metabisulfite may cause allergic reactions⁴ Respiratory: bronchospasm²
Actions	<ul style="list-style-type: none"> Inotropic agent that stimulates the beta receptors of the heart while producing hypertensive, arrhythmogenic, and vasodilative effects⁵
Abbreviations	BP: blood pressure, ECG: electrocardiogram, IV: intravenous
Keywords	dobutamine, hypotension, hypoperfusion, blood pressure, BP, myocardial dysfunction, cardiac output, inotrope

Quick Guide: dobutamine infusion concentrations

Draw up dobutamine dose (mg/kg)	Make up to total volume (mL)	Infusion rate (mL/hour)	Delivers (microgram/kg/minute)
30 mg/kg	50 mL	@ 1 mL/hour	10 microgram/kg/minute
60 mg/kg	50 mL	@ 1 mL/hour	20 microgram/kg/minute
120 mg/kg	50 mL	@ 1 mL/hour	40 microgram/kg/minute

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

1. IBM Micromedex®/Neofax®. Dobutamine hydrochloride. In: IBM Micromedex® NeoFax®/Pediatrics (electronic version). IBM Watson Health, Greenwood Village, Colorado, USA. January 2019 [cited 2019 February 22]. Available from: <http://neofax.micromedexsolutions.com/neofax>.
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Document history

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