

# Paediatrics: Dobutamine

Presentation:	Solution for injection 5mg/ml, 50ml ampoules
Indication:	Inotropic support
Dose:	Neonate and Child: Initially 5 micrograms/kg/minute, then adjusted according to response to 2–20 micrograms/kg/minute, doses as low as 0.5–1 microgram/kg/minute have been used
Route of administration:	Continuous intravenous infusion via SMART pump preferably via <b>central venous access device</b> (if central venous access unavailable, give via large peripheral vein and do frequent VIP scoring)
Instructions for preparation:	<p><b>Preparation of syringe for CENTRAL LINE use:</b>  <b>NB. Rate will vary with weight as using fixed concentrations. Do not use double or quadruple strength syringes.</b></p> <p><b>Patients &lt;6.5kg:</b></p> <ul style="list-style-type: none"> <li>Measure 125mg dobutamine (25ml)</li> <li>Dilute to a final volume of 50ml with glucose 5% or sodium chloride 0.9%</li> <li>A dose of 5 microgram/kg/minute will be provided by a rate of <math>\frac{6 \times \text{weight}}{50}</math> ml/hour</li> </ul> <p><b>Patients ≥6.5kg:</b></p> <ul style="list-style-type: none"> <li>Measure 250mg dobutamine (50ml)</li> <li>Does not require dilution</li> <li>A dose of 5 micrograms/kg/minute will be provided by a flow rate of <math>\frac{3 \times \text{weight}}{50}</math> ml/hr</li> </ul> <p><b>Preparation of syringe for PERIPHERAL use in exceptional circumstances:</b>  Prepare a dobutamine 2mg/ml syringe:</p> <ul style="list-style-type: none"> <li>Measure 100mg dobutamine (20ml)</li> <li>Dilute to a final volume of 50ml with sodium chloride 0.9% or 5% glucose</li> <li>A dose of 5 microgram/kg/minute will be provided by a rate of <math>\frac{3 \times \text{weight}}{20}</math> ml/hour</li> <li>Extravasation can lead to necrosis and may necessitate amputation of the affected limb so the vein should be monitored regularly and VIP scored to facilitate early identification of extravasation</li> </ul> <p>Dobutamine injection may turn pink due to a slight oxidation of the drug. Such solutions are safe to use as there is no significant loss of potency. Discard diluted dobutamine solution after 24 hours.</p>

## Prescribing

To calculate concentration of infusion for SMART pumps, divide the amount of drug in the syringe by 50 to get mg/ml.

e.g.  $\frac{125\text{mg}}{50\text{ml}} = 2.5\text{mg/ml}$

Example prescription for 5 kg infant:

Drug	Drug amount in syringe	Diluent	Total volume (ml)	Route
<i>Dobutamine</i>	<i>125mg</i>	<i>Glucose 5%</i>	<i>50ml</i>	<i>LL</i>
Start date	Drug concentration per ml	Infusion range	Min	Max
<i>6/3/18</i>	<i>2.5mg/ml</i>	Dose/kg/time	<i>2micrograms/kg/min</i>	<i>20micrograms/kg/min</i>
Pharm		ml/hr	<i>0.24ml/hr</i>	<i>2.4ml/hr</i>
				Name, Sig, Bleep
				<i>A.Doctor</i>
				<i>#1234</i>

<p>Directions for administration via SMART pump</p>	<ul style="list-style-type: none"> <li>• Load Syringe, prime line using the pump for accurate dosing.</li> <li>• Open 'Children' folder then open 'doBUTamine' programme.</li> <li>• Using DATA chevrons enter concentration in <b>mg/ml</b> and confirm</li> <li>• Enter Childs weight in kg and confirm</li> <li>• Enter the dose in <b>micrograms/kg/min</b></li> <li>• Visually confirm the rate (ml/h) against the prescribed dose (micrograms/kg/min)</li> <li>• Perform STOP moment with medical team (Pump against prescription)</li> <li>• Connect to Child</li> <li>• Press start button</li> </ul>
<p>Known compatibility issues</p>	<p><b>Compatible:</b> Adrenaline, Atracurium, Caffeine, Ceftazidime, Ciprofloxacin, Dopamine, Fluconazole, Furosemide (if in NS), Insulin, Midazolam, Morphine, Noradrenaline, Pancuronium, Potassium chloride, Ranitidine</p> <p><b>Incompatible:</b> Aciclovir, Calcium salts, Heparin, Magnesium sulphate, Piperacillin/tazobactam, Sodium bicarbonate</p>
<p>Additional Comments:</p>	<p>Tolerance may develop with continuous infusions longer than 72 hours requiring an increase in dose. Avoid abrupt withdrawal. Reduce dose gradually to avoid unnecessary hypotension.</p> <p>Ampoules of dobutamine contain sodium metabisulphite which can cause allergic type reactions, including anaphylactic symptoms</p>

Note: The contents of this monograph should be read in conjunction with information available in the BNFC and Medusa

**References:**

CoMET dosing chart v 2017 09 22

British National Formulary for Children, accessed via [www.medicinescomplete.com](http://www.medicinescomplete.com)

SPC for accessed via [www.medicines.org.uk](http://www.medicines.org.uk)

Medusa Injectable Medicines Guide, accessed via <http://medusa.wales.nhs.uk>

Trissel LA (Ed), Handbook on Injectable Drugs, accessed via [www.medicinescomplete.com](http://www.medicinescomplete.com)

## Document control sheet

<b>GUIDELINE NUMBER</b>	CH PH D 07
<b>AREA IN WHICH THIS MONOGRAPH APPLIES</b>	Paediatrics, Children's hospital, RDH

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Checked by: Harriet Hughes	Specialist Pharmacist Women's & Children's	October 2018

Change history:

Changes Reference	Change details	Date
	Updated concentration of dobutamine ampoules from 12.5mg/mL to 5mg/mL	25/7/18
	Changed to fixed concentration infusion based on CoMET guideline	22/10/18