

## Dopamine Infusion PROTOCOL

Patient Addressograph
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Consultant \_\_\_\_\_

Date \_\_\_\_\_

Ward \_\_\_\_\_

### Nurse checklist:

IV Access in situ		Heart Rate	
12 Lead ECG		Respiratory Rate	
IV infusion pump		Blood Pressure	
Continuous monitoring		Oxygen Sats	
Fluid chart			

### Prescription:

Please indicate in the medicine chart and administration record a Dopamine Infusion Chart is being used. When prescribing dosage please write 'See Dopamine Chart'.

### Calculate ideal body weight (IBW)

Use weight in kg, height in cm

- Males =  $0.91 \times (\text{Height} - 152.4) + 50$
- Females =  $0.91 \times (\text{Height} - 152.4) + 45.5$

If patient is obese (>20% over ideal body weight or BMI > 30), calculate **Adjusted Body Weight (ABW)**

$$\text{Adjusted Body Weight} = \text{IBW} + 0.4 \times (\text{Actual Body Weight} - \text{IBW})$$

### Dopamine Dose

Dose: 1 – 5 micrograms/kg/min – induces vasodilation and increases renal perfusion

Dose: > 5 micrograms/kg/min – increases peripheral vascular resistance and reduces renal blood flow – **requires central line to be administered**

Calculated body weight (IBW or ABW) _____ kg		Dopamine dose _____ micrograms/kg/min		Infusion rate _____ ml/hour	
Doctor's Name (Print)		Doctor's Signature		Date DD / MM / YYYY	
				Time	

**Contra-indications:**

The use of Dopamine infusion is contra-indicated in the following criteria:

1. Hypersensitivity to the active substance
2. Phaeochromocytoma or hyperthyroidism
3. In presence of uncorrected atrial or ventricular tachyarrhythmias or ventricular fibrillation
4. Use with cyclopropane and halogenated hydrocarbon anaesthetics

(Reference from: <https://www.medicines.org.uk/emc> accessed 14/09/2022)

**Adverse effects:**

Adverse reactions to dopamine are related to its pharmacological action.

Frequencies are defined as: very common (>1/10), common (>1/100 to <1/10), uncommon (>1/1,000 to <1/100), rare (>1/10,000 to <1/1,000), very rare (<1/10,000), not known (cannot be estimated from the available data).

System Organ Class	Frequency	Adverse reaction
Infections and infestations	Uncommon	Gangrene <sup>1</sup>
Nervous system disorders	Common	Headache
Eye disorders	Uncommon	Mydriasis
Cardiac disorders	Common	Ectopic heart beats, tachycardia, anginal pain, palpitation
	Uncommon	Aberrant conduction, bradycardia, widened QRS complex, fatal ventricular arrhythmias have been reported on rare occasions
	Not known	Atrial fibrillation
Vascular disorders	Common	Hypotension, vasoconstriction
	Uncommon	Hypertension
Respiratory, thoracic and mediastinal disorders	Common	Dyspnoea
Gastrointestinal disorders	Common	Nausea, vomiting
Skin and subcutaneous tissue disorders	Uncommon	Piloerection
Renal and urinary disorders	Uncommon	Azotaemia

<sup>1</sup> Serious or Life-threatening Reactions: Gangrene of the feet has occurred following doses of 10-14 microgram/kg/min and higher in a few patients with pre-existing vascular disease.

(Reference from: <https://www.medicines.org.uk/emc> accessed 14/09/2022)

**Preparation of Infusion:**

1. Prepare the infusion solution by drawing up 400mg of Dopamine (200mg in 5ml) and dilute in 250ml 5% Dextrose. This concentration (1600 micrograms/ml) may be administered into a large peripheral vein (ACF, cephalic or basilic) with access 20G or larger. **The infusion should be discarded after 24h of preparation.**
2. The infusion rate is **dependant on body weight.**

**Infusion rates (ml/hour)**

micrograms /kg/min \ kg	1	2	2.5	3	4	5	7.5	10
40	1.5	3	3.75	4.5	6	7.5	11.25	15
45	1.7	3.4	4.2	5.0	6.75	8.4	12.6	16.9
50	1.9	3.75	4.7	5.6	7.5	9.4	14	18.75
55	2.1	4.1	5.2	6.2	8.25	10.3	15.5	20.6
60	2.25	4.5	5.6	6.75	9	11.25	16.9	22.5
65	2.4	4.9	6.1	7.3	9.75	12.2	18.3	24.4
70	2.6	5.25	6.5	7.9	10.5	13.1	19.7	26.25
75	2.8	5.6	7.0	8.4	11.25	14.1	21.1	28.1
80	3	6	7.5	9	12	15	22.5	30
85	3.2	6.4	8	9.6	12.75	15.9	23.9	31.9
90	3.4	6.75	8.4	10.1	13.5	16.9	25.3	33.75
95	3.6	7.1	8.9	10.7	14.25	17.8	26.7	35.6
100	3.75	7.5	9.4	11.25	15	18.75	28.1	37.5
105	3.9	7.9	9.8	11.8	15.75	19.7	29.5	39.4
110	4.1	8.25	10.3	12.4	16.5	20.6	30.9	41.25

*If required do calculate the rate:*  $\frac{\text{micrograms} \times \text{kg} \times \text{min}}{1600} = \text{ml/hour}$

Calculated body weight (IBW or ABW) _____ kg	Dopamine dose _____ micrograms /kg/min	Infusion rate _____ ml/hour	
Given by:	Signature:	Date DD / MM / YYYY	Time
Checked by:	Signature:	Date DD / MM / YYYY	Time

**Infusion Continuation Prescription:**

Please use the following chart when requiring continuing infusion **with same prescription** and new infusion needs preparing.

Date	Infusion rate	Doctor Name	Doctor Signature	Given by	Checked by	Time