Sodium nitroprusside Intravenous for Adults

Who can administer

Administration RESTRICTED - see Appendix 1

Important information

- **Consider cyanide toxicity** if patients with hepatic or renal impairment, or in rates exceeding 3 micrograms/kg/minute for more than 72 hours [ref 1]
- Unlicensed preparation
- The hypotensive effect of Sodium nitroprusside is seen within a minute or two after the start of the adequate infusion, and it dissipates almost as rapidly after the infusion is discontinued
- For Y-site compatibility see below

Available preparations

Sodium Nitroprusside 50mg per 2ml vial (Armas, SlateRun brands)

Reconstitution

Dilute further prior to administration

Infusion fluids

Glucose 5% **only**

Methods of intravenous administration

Continuous intravenous infusion (administer using an electronically controlled infusion device)

- Add 50mg to 250ml infusion fluid (200 micrograms/ml)
- The infusion device, and the **giving set must be covered to protect the drug from light** - silver wrapping is provided in the pack to allow this
- Administer at a suitable rate as per 'dose' below
- The prepared solution has a very faint brownish tint - if it is highly coloured it should be discarded
- **Fluid restriction:** can prepare a 1mg per 1ml solution (central line only) [ref 3,4]

Dose in adults

Using a 50mg in 250ml strength														
Dose in micrograms/kg/minute	**0.1**	**0.3**	**0.5**	**1**	**1.5**	**2**	**2.5**	**3**	**3.5**	**4**	**5**	**6**	**7**	**8**
Weight in kg (below)	**Rate below is in ml per hour**													
40kg	1.2	3.6	6	12	18	24	30	36	42	48	60	72	84	96
45kg	1.4	4.1	6.8	13.5	20.3	27	33.8	40.5	47.3	54	67.5	81	94.5	108
50kg	1.5	4.5	7.5	15	22.5	30	37.5	45	52.5	60	75	90	105	120
55kg	1.7	5	8.3	16.5	24.8	33	41.3	49.5	57.8	66	82.5	99	115.5	132
60kg	1.8	5.4	9	18	27	36	45	54	63	72	90	108	126	144
65kg	2	5.9	9.8	19.5	29.3	39	48.8	58.5	68.3	78	97.5	117	136.5	156
70kg	2.1	6.3	10.5	21	31.5	42	52.5	63	73.5	84	105	126	147	168
75kg	2.3	6.8	11.3	22.5	33.8	45	56.3	67.5	78.8	90	112.5	135	157.5	180
80kg	2.4	7.2	12	24	36	48	60	72	84	96	120	144	168	192
85kg	2.6	7.7	12.8	25.5	38.3	51	63.8	76.5	89.3	102	127.5	153	178.5	204
90kg	2.7	8.1	13.5	27	40.5	54	67.5	81	94.5	108	135	162	189	216
95kg	2.9	8.6	14.3	28.5	42.8	57	71.3	85.5	99.8	114	142.5	171	199.5	228
100kg	3	9	15	30	45	60	75	90	105	120	150	180	210	240
105kg	3.2	9.5	15.8	31.5	47.3	63	78.8	94.5	110.3	126	157.5	189	220.5	252
110kg	3.3	9.9	16.5	33	49.5	66	82.5	99	115.5	132	165	198	231	264
115kg	3.5	10.4	17.3	34.5	51.8	69	86.3	103.5	120.8	138	172.5	207	241.5	276
120kg	3.6	10.8	18	36	54	72	90	108	126	144	180	216	252	288

Hypertensive crisis (doses are in micrograms/kg/minute)

- Initial dose is normally within the range of 0.3 to 1.5 micrograms/**kg/minute** (ref 2)
- This can be adjusted in increments of 0.5 micrograms/**kg/minute** every three to five minutes (ref 5)
- Dose range 0.5 to 8 micrograms/**kg/minute** (average dose required 3 micrograms/**kg/minute)**
- Higher doses up to 10 microgram/**kg/minute** may be needed for a maximum time of 10 minutes
- Action occurs within 1 to 2 minutes
- Excessive hypotension resulting in compromised perfusion of vital organs must be avoided

Monitoring

- Monitor patients for signs of cyanide toxicity - which may present as symptoms of hypothyroidism

Storage

- Store below 25^{0}C
- Following reconstitution, protect the bag from light by covering with aluminium foil (supplied with product) or other opaque material as soon as possible. Under these conditions the 50mg in 250ml glucose 5% **infusion is stable for 24 hours**
- Discard the bag if the solution develops a strong discolouration (a faint brown tint is acceptable to use).

References

SPC Slate Run August 2020, Armas July 2023

1. Uptodate accessed online 12/03/2025

2. Martindale accessed online 12/03/2025

3. Minimum infusion volumes UKCPA version 4.4 December 2012

4. Injectable Medicines Guide, Medusa accessed online 12/03/20251

5. American Heart Association ACLS core drugs 2006

Therapeutic classification

Vasodilator antihypertensive