

PRESENTATION Pre-filled syringe containing 1 milligram atropine in 10ml. Pre-filled syringe containing 1 milligram atropine in 5ml. Pre-filled syringe containing 3 milligrams atropine in 10ml. An ampoule containing 600 micrograms in 1ml.	INDICATIONS Cardiac arrest, after administration of adrenaline, in the management of asystole or pulseless electrical activity (PEA) with a rate of 60 or below. Symptomatic bradycardia in the presence of ANY of these adverse signs: • absolute bradycardia (pulse <40 beats per minute) • systolic blood pressure <90mmHg • paroxysmal ventricular arrhythmias requiring suppression • inadequate perfusion causing, for example, confusion etc. Where there is a high risk of asystole: • recent asystole • mobitz II AV block • complete heart block with wide QRS complexes • ventricular pauses >3 seconds Organophosphate poisoning.
ACTIONS May reverse effects of vagal overdrive. May increase heart rate by blocking vagal activity in sinus bradycardia, second or third degree heart block. Enhances A-V conduction.	CONTRA-INDICATIONS Should NOT be given to treat bradycardia in suspected hypothermia.
ADDITIONAL INFORMATION May induce tachycardia when used after myocardial infarction, which will increase myocardial oxygen demand and worsen ischaemia. Hence, bradycardia in a patient with an MI should ONLY be treated if the low heart rate is causing problems with perfusion, such as hypotension (systolic blood pressure <90 mmHg).	SIDE EFFECTS Dry mouth, visual blurring and pupil dilation. Confusion and occasional hallucinations. Tachycardia, and in the elderly, retention of urine may occur. Do not use small (<100 micrograms) doses as they may cause paradoxical bradycardia.

DOSAGE AND ADMINISTRATION

Asystole/PEA with a rate of 60 or below

The intravenous and I/O route is vastly superior to the ET route in cardiac arrest and should always be used in preference.

Route: IV (preferred route) or ET

AGE	DOSE	CONCENTRATION	VOLUME
Adult	3 milligrams (IV)	100 micrograms per ml	30.0ml
Adult	3 milligrams (IV)	200 micrograms per ml	15.0ml
Adult	3 milligrams (IV)	300 micrograms per ml	10.0ml
Adult	6 milligrams (ET)	300 micrograms per ml	20.0ml

SYMPTOMATIC BRADYCARDIA

Route: IV

AGE	DOSE	CONCENTRATION	VOLUME
Adult	500 micrograms	100 micrograms per ml	5.0ml
Adult	500 micrograms	200 micrograms per ml	2.5ml
Adult	500 micrograms	300 micrograms per ml	1.6ml

If no improvement administer further 500 micrograms (0.5 milligrams)
NOTE: Maximum dose 3 milligrams.

ORGANOPHOSPHATE POISONING

Route: IV/IM

AGE	DOSE	CONCENTRATION	VOLUME
Adult	2 milligrams	100 micrograms per ml	20.0ml
Adult	2 milligrams	200 micrograms per ml	10.0ml
Adult	2 milligrams	300 micrograms per ml	6.6ml
Child	20 micrograms/kg	(IV/IO <7 years)	Refer to bradycardia table.

In organophosphate poisoning the doses required may be **VERY HIGH** and on line medical support should be sought before giving further atropine.

The emergence of atropine side effects (dry flushed skin, dilated pupils and tachycardia) suggests that a sufficient dose has been given.

BRADYCARDIA

Route: IV		CONCENTRATION		
		100 micrograms per ml	200 micrograms per ml	600 micrograms per ml
AGE	DOSE	VOLUME	VOLUME	VOLUME
11 years	600 micrograms	6.0ml	3.0ml	1.0ml
10 years	600 micrograms	6.0ml	3.0ml	1.0ml
9 years	572 micrograms	5.7ml	2.9ml	0.95ml
8 years	516 micrograms	5.2ml	2.6ml	0.86ml
7 years	460 micrograms	4.6ml	2.3ml	0.77ml
6 years	412 micrograms	4.1ml	2.1ml	0.69ml
5 years	370 micrograms	3.7ml	1.9ml	0.62ml
4 years	328 micrograms	3.3ml	1.6ml	0.55ml
3 years	288 micrograms	2.9ml	1.5ml	0.48ml
2 years	244 micrograms	2.4ml	1.2ml	0.41ml
18 months	222 micrograms	2.2ml	1.1ml	0.37ml
12 months	196 micrograms	2.0ml	0.98ml	0.33ml
9 months	178 micrograms	1.8ml	0.89ml	0.30ml
6 months	156 micrograms	1.6ml	0.78ml	0.26ml
3 months	120 micrograms	1.2ml	0.60ml	0.20ml
1 month	100 micrograms	1.0 ml	0.50ml	0.17ml
Birth	100 micrograms	1.0 ml	0.50ml	0.17ml

BRADYCARDIA in children is most commonly caused by **HYPOXIA**, requiring immediate **ABC** care, **NOT** drug therapy.

For administration **ONLY** in cases of bradycardia caused by vagal stimulation (such as suction or intubation) or organophosphate poisoning.