

PEDIATRIC DOSING GUIDELINES FOR NERVE AGENTS (Sarin-GB, Soman-GD, Tabun-GA, VX) ANTIDOTES*,¹

Autoinjector (AI) Guidelines

Weight lbs (kg)	MILD SYMPTOMS				SEVERE SYMPTOMS ²			
	Dose	Autoinjector Products (AI). Note: Select only one combination product (i.e. Atropen® plus Pralidoxime Autoinjector (AI); OR Mark 1 kit; OR ATNAA Combination AI)	Dose	Autoinjector Products (AI). Note: Select only one combination product (i.e. Atropen® plus Pralidoxime Autoinjector (AI); OR Mark 1 kit; OR ATNAA Combination AI)	Dose	Autoinjector Products (AI). Note: Select only one combination product (i.e. Atropen® plus Pralidoxime Autoinjector (AI); OR Mark 1 kit; OR ATNAA Combination AI)	Dose	Autoinjector Products (AI). Note: Select only one combination product (i.e. Atropen® plus Pralidoxime Autoinjector (AI); OR Mark 1 kit; OR ATNAA Combination AI)
11 lbs (5 kg)	Atropine 0.25mg/kg Pralidoxime 25mg/kg	Atropen® plus Pralidoxime 600mg AI (packaged separately) 1 Atropen 0.25mg (Yellow); Pralidoxime	Mark 1 Kits (Atropine 2mg & Pralidoxime 600mg AI)	ATNAA (Atropine 2mg/Pralidoxime 600mg Combination AI)	Atropine 0.1mg/kg Pralidoxime 50mg/kg	Atropen® plus Pralidoxime 600mg AI (packaged separately) Atropine 0.1mg (Red); Pralidoxime follow BPF ³	Mark 1 Kits (Atropine 2mg & Pralidoxime 600mg AI)	ATNAA (Atropine 2mg/Pralidoxime 600mg Combination AI)
22 lbs (10 kg)	Atropine 0.5mg Pralidoxime 250mg	1 Atropen 0.5mg (Blue); Pralidoxime follow BPF ³	n/a	n/a	Atropine 1mg Pralidoxime 500mg	1 Atropen 1mg (Red); Pralidoxime follow BPF ³	n/a	n/a
44 lbs (20 kg)	Atropine 1mg Pralidoxime 500mg	1 Atropen 1mg (Red); Pralidoxime follow BPF ³	n/a	n/a	Atropine 2mg Pralidoxime 600mg ²	1 Atropen 2mg (Green); Pralidoxime 600mg AI	1 Mark 1 kit	1 ATNAA Combination AI
66 lbs (30 kg)	Atropine 1mg ² Pralidoxime 600mg	1 Atropen 1mg (Red); Pralidoxime 600mg AI	n/a	n/a	Atropine 2mg ² Pralidoxime 600mg ²	1 Atropen 2mg (Green); Pralidoxime 600mg AI	1 Mark 1 kit	1 ATNAA Combination AI
88 lbs (40 kg)	Atropine 2mg Pralidoxime 600mg	1 Atropen 2mg (Green); Pralidoxime 600mg AI	1 Mark 1 kit	1 ATNAA Combination AI	Atropine 4mg Pralidoxime 1200mg ²	2 Atropen 2mg (Green); Pralidoxime 600mg AI	2 Mark 1 kits	2 ATNAA Combination AI
>110 lbs (>50 kg)	Atropine 2mg Pralidoxime 600mg ²	1 Atropen 2mg (Green); Pralidoxime 600mg AI	1 Mark 1 kit	1 ATNAA Combination AI	Atropine 6mg Pralidoxime 1800mg ²	3 Atropen 2mg (Green); Pralidoxime 600mg AI	3 Mark 1 kits	3 ATNAA Combination AI

*Bulk Drug Formulation Guidelines (BDFG)⁵

Weight lbs (kg)	Mild Symptoms				Severe Symptoms				
	Atropine 0.4mg/ml		Pralidoxime 333mg/ml		Atropine 0.4mg/ml		Pralidoxime 333mg/ml		Diazepam 5mg/ml
	Dose	Administer IM/IV	Dose	Administer IM/IV	Dose	Administer IM/IV	Dose	Administer IM/IV	Dose
11 lbs (5kg)	0.25mg	0.6ml	125mg	0.4ml	0.5mg	1.2ml	250mg	0.8ml	1mg
22 lbs (10kg)	0.5mg	1.2ml	250mg	0.8ml	1mg	2.5ml	500mg	1.5ml	2mg
44 lbs (20kg)	1mg	2.5ml	500mg	1.5ml	2mg	5ml	1000mg	3ml	4mg
66 lbs (30kg)	1.5mg	3.8ml	600mg ²	1.8ml	3mg	7.5ml	1500mg	4.5ml	6mg
88 lbs (40kg)	2mg	5ml	600mg ²	1.8ml	4mg	10ml	1800mg ²	5.4ml	8mg
>110 lbs (>50kg)	2mg ²	5ml	600mg ²	1.8ml	6mg ²	15ml	1800mg ²	5.4ml	10mg

¹ Local protocols may supersede the recommended guidelines. ² This card may be used as a cross-reference to calculate pediatric doses. All pediatric doses should be individualized based on a child's actual weight. Refer to CDC guidelines for complete prescribing information (www.bt.cdc.gov). ³ Weight based on pediatric doses cannot exceed the recommended product dosing guidelines. Adjustments have been made accordingly. ⁴ Patients with severe symptoms should typically receive diazepam 0.2mg/kg. Refer to Bulk Product Formulation Guidelines for appropriate dosing based on weight. Note: Diazepam is available as a 10mg/2ml Autoinjector. ⁵ BPF³ (bulk product formulation guidelines). ⁶ All doses rounded to nearest 0.1 mL. November 1, 2005

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Clinical Symptoms: Mild-Moderate: miosis, rhinorrhea, dyspnea, diaphoresis, vomiting, weakness. Severe: include the above plus one: loss of consciousness, copious secretions, apnea, seizures, severe muscle twitching, paralysis, or coma.

Atropine: Available as 0.4mg/mL; 20mL vials **Note:** Atropine should be properly stored away from heat and direct light

Children < 14 yrs old: 0.05 mg/kg IM (mild symptoms); up to 0.1mg/kg IM (severe symptoms) **Note:** 0.1mg minimum dose (paradoxical bradycardia)

Adults and children > 14 yrs old: 2mg IM (mild symptoms); 6mg IM (severe symptoms)

**Repeat doses every 2-5 min until an Atropine effect is observed; then doses can be repeated every 1-4 hours to maintain Atropine effect.*

Note: The number of mL that can be administered IM is < 2; multiple injections may be necessary to achieve appropriate dose.

Pralidoxime: Available as 1Gm vial; Reconstitute with 3mL of sterile water or normal saline to result in a solution of 333mg/mL.

Children < 14 yrs old: 25mg/kg IM/IV (mild symptoms); up to 50mg/kg IM/IV (severe symptoms)

Adults and children > 14 yrs old: 600mg IM/IV (mild symptoms); 1800mg IM/IV (severe symptoms)

2-PAM can cause hypertension when given rapidly IV; administer slowly over 20 minutes to minimize. This hypertension can be rapidly but transiently reversed by phentolamine (adult: 5 mg IV; child: 1mg IV).

**Additional doses titrate based upon response for severe persistent symptoms- repeat as needed every 1-2 hours if muscle weakness is not relieved.*

Diazepam: For severe symptoms & for all patients that receive 6mg of atropine and/or 1800mg of 2-PAM.

Children < 14 yrs old: 0.2mg/kg IM/IV, **Adults and children >14 yrs old:** One auto-injector (10mg) IM/IV

Auto-Injector Formulations:

Mark 1™: Available as 2 auto-injectors; 1 containing Atropine 2mg/0.7mL & 1 containing Pralidoxime (2-PAM) 600mg/2mL.

ATNAA (Antidote Treatment- Nerve Agent, Auto-Injector): 2-chambered auto-injector that delivers Atropine 2.1mg in 0.7mL & 2-PAM 600mg in 2mL sequentially using a single needle.

Note: The Mark 1 & ATNAA are not approved for pediatric use, but could be initial treatment for children of any age with severe symptoms of nerve agent toxicity. Mild-moderate symptoms should be treated with supportive measures only.

Pralidoxime Chloride: Available in a pre-filled syringe containing 2-PAM 600mg in 2mL.

AtroPen®: Available in 4 different strengths of Atropine in color-coded pre-filled auto-injector syringes:

2mg/0.7mL (green) for children and adults >41kg

1mg/0.7mL (dark red) for children 18 to 41 kg

0.5mg/0.7mL (blue) for children 7 to 18 kg

0.25mg/0.3mL (yellow) for children < 7 kg

References: *J Pediatr.* 2002 Sept;141(3):311-326.; www.bt.cdc.gov/children/pdf/working/execsumm03.pdf; *Pediatrics.* 2003 Sep;112(3 Pt 1):648-58.; www.dsf.health.state.pa.us/health/lib/health/ems/ems_ib_5.pdf; *The Harriet Lane Handbook.* 16th ed. St Louis, MO: Mosby;2002:39.; *J Pediatr.* 2005 Jan;146(1):8-10.; www.atsdr.cdc.gov/MHMI/mmg166.html; www.meridianmeds.com/international.html

* For massive exposure and severe symptoms, more than 1 dose to a maximum of 3 may be necessary (for all auto-injectors).

* If auto-injectors are not available, dose the 2 medications based on commercial availability (Atropine is administered first).

Note: Atropine & 2-PAM are not always given together- individual patient assessment is necessary for proper treatment of symptoms.

See reverse side of this document for pediatric dosing recommendations

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