


## TREATMENT PROTOCOL: NERVE AGENT EXPOSURE

1. Contact HazMat resources according to provider agency protocol
2. Secure area, establish incident site, and don protective equipment/gear appropriate for hazardous material exposure according to the provider agency protocol
3. If more than 2 victims, refer to Ref. No. 519.4, MCI Field Decontamination Guidelines
4. **ESTABLISH BASE or MEDICAL ALERT CENTER (MAC) CONTACT**
  - Provide important scene information such as the type of decontamination performed, signs/symptoms, smells, properties of contaminant (e.g., solid, liquid, gas)
  - If there are multiple symptomatic patients with more than 50 victims involved, an EMS Chempack can be requested from the Medical Alert Center


-For **severe exposure, begin treatment immediately** prior to decontamination and **transport after decontamination procedures are completed**

-For **mild and moderate exposure, ensure decontamination** procedures are completed **before treatment or transport to facility** ①


**MILD EXPOSURE:** miosis, rhinorrhea and increased salivation:

**DuoDote** (atropine 2.1mg and pralidoxime chloride 600mg) or **Mark I Kit** 1 dose IM ②  
 **Pediatrics: AtroPen® only** see Pediatric (Color Code) Dosages for Nerve Agent Exposure ③ ⑤

**MODERATE EXPOSURE:** miosis, rhinorrhea, shortness of breath and/or vomiting and diarrhea:

**DuoDote** or **Mark I kit** 2 doses IM one after another ②④  
 **Pediatrics:** See Pediatric (Color Code) Dosages for Nerve Agent Exposure ③ ⑤

**SEVERE EXPOSURE:** respiratory distress, respiratory arrest, cyanosis, extreme SLUDGE (salivation, lacrimation, urination, defecation, gastrointestinal distress and emesis) seizures, unconsciousness

**DuoDote** or **Mark I kit** 3 doses IM one after another ②④  
 **Pediatrics:** See Pediatric (Color Code) Dosages for Nerve Agent Exposure ③ ⑤

**Midazolam** (or if available, see Diazepam below)

2-5mg IV titrated to seizure control

5mg IN or IM if unable to obtain venous access

May repeat one time in 5min, maximum total adult dose 10mg all routes

 **Pediatrics:** See Pediatric (Color Code) Dosages for Nerve Agent Exposure ⑤

**Diazepam** (if available)

10mg IM or 5-10mg IV

 **Pediatrics:** See Pediatric (Color Code) Dosages for Nerve Agent Exposure ⑤

Once resources allow, perform:

5. Basic airway
6. Spinal immobilization prn
7. Oxygen/pulse oximetry
8. Advanced airway prn
9. Cardiac monitor: document rhythm and attach ECG strip if dysrhythmia identified
10. Venous access prn
11. If hypotensive,




**Normal Saline** fluid challenge

10ml/kg IV at 250ml increments

Use caution if rales present

 **Pediatrics:** 20ml/kg IV

**TREATMENT PROTOCOL: NERVE AGENT EXPOSURE****SPECIAL CONSIDERATIONS**

- ❶ If eye involvement: continuous flushing with NS during transport; allow patient to remove contact lenses, if possible
- ❷ Administer additional DuoDotes or Mark I kits for a total of 3, if symptoms progress in MILD or MODERATE exposures
- ❸  **Pediatrics:** 1 DuoDote or Mark I kit can be given to any child, regardless of age or weight, as the initial antidote therapy when no other atropine or pralidoxime source is available
- ❹ Pralidoxime Chloride (2PAM) is available in EMS Chempack, for moderate and severe symptoms only  
 **Pediatrics:** See Pediatric (Color Code) Dosages for Nerve Agent Exposure
- ❺  **Pediatrics:** If the child is too for the pediatric resuscitation tape and adult size, move to the Adult protocol and Adult dosing

### Pediatric (Color Code) Dosages for Nerve Agent Exposure (Confirmed or Highly Suspected)

**Mild to Moderate Exposure**

Avg Wt (KG)	Color	Initial AtroPen® Dose*	Repeat AtroPen® Dose*
4	Grey	0.5 mg	0.5 mg
6.5	Pink	0.5 mg	1 mg
8.5	Red	0.5 mg	1 mg
10.5	Purple	0.5 mg	1 mg
13	Yellow	1 mg	1 mg + 0.5 mg
16.5	White	1 mg	2 mg
20.5	Blue	1 mg	2 mg
26	Orange	1 mg + 0.5 mg	2 mg + 2 mg
33	Green	1 mg + 0.5 mg	2 mg + 2 mg

\* Atropine auto-injectors (AtroPen®) come in 0.5 mg, 1 mg and 2 mg devices. Initial dosage based off of 0.05 mg/kg, repeat dosage based off of 0.1 mg/kg. May repeat every 5 minutes until secretions begin to dry or maximum 6 mg IM.

**If the child is too tall for the pediatric resuscitation tape and adult size, move to the Adult protocol and Adult dosing**

**Severe Exposure**

Avg Wt (KG)	Color	Initial Emergency Dose*	Midazolam** (0.1 mg/kg)
4	Grey	1 DuoDote® or 1 Mark I Kit	0.4 mg IV
6.5	Pink		0.6 mg IV
8.5	Red		0.8 mg IV
10.5	Purple		1 mg IV
13	Yellow		1.3 mg IV
16.5	White		1.6 mg IV
20.5	Blue		2 mg IV
26	Orange	2 Duodotes or 2 Mark I Kits	2.6 mg IV
33	Green		3.3 mg IV

\*Duodote or Mark I kit -in 60 minute time frame (~2mg Atropine/600 mg 2PAM Chloride)

\*\*IV preferred route but can administer 5mg IM or IN, if no IV available. May repeat one time in 5 min, maximum total pediatric dose 5mg all routes

**If the child is too tall for the pediatric resuscitation tape and adult size, move to the Adult protocol and Adult dosing**

**EMS CHEMPACK Deployment (Ref. No. 1108)**

Avg Wt (KG)	Color	Atropine*		2PAM Chloride** (IM or IV)	Diazepam***
		AtroPen® Dose (IM Only)	Multi-dose vial (0.1mg/kg) (IM or IV)	Multi-dose vial (50 mg/kg)	Multi-dose vial (0.1 mg/kg)
4	Grey	0.5 mg	0.4 mg	200 mg	0.4 mg IV
6.5	Pink	1 mg	0.7 mg	325 mg	0.7 mg IV
8.5	Red	1 mg	0.9 mg	425 mg	0.9 mg IV
10.5	Purple	1 mg	1 mg	525 mg	1 mg IV
13	Yellow	1 mg + 0.5 mg	1.3 mg	650 mg	1.3 mg IV
16.5	White	2 mg	1.6 mg	825 mg	1.6 mg IV
20.5	Blue	2 mg	2 mg	1025 mg (1000 mg IV)	2 mg IV
26	Orange	2 mg + 2 mg	2.6 mg	1300 mg (1000 mg IV)	2.6 mg IV
33	Green	2 mg + 2 mg	3.3 mg	1650 mg (1000 mg IV)	3.3 mg IV

\*After initial dose (5 minutes after AtroPen or 60 minutes after Initial Emergency Duodote) Atropine auto-injectors

(AtroPen®) come in 0.5 mg , 1 mg and 2 mg devices . Multi-dose vials can provide closer to ideal dosages, if available

\*\*Initial dose if only AtroPens were used or repeat dose (60 minutes after Initial Emergency DuoDote)

\*\*\* IV preferred route but can administer 5mg IM , if no IV available. May repeat one time in 5 min, maximum total pediatric dose 5mg all routes

**If the child is too tall for the pediatric resuscitation tape and adult size, move to the Adult protocol and Adult dosing**