

## **CSEPP RECOMMENDED GUIDELINES FOR ANTIDOTE TREATMENT FOR NERVE AGENT EXPOSURE**

- Laws regulating the use of controlled drugs differ from state to state. In some states atropine or 2-PAM Chloride can only be administered under the direction of a physician. You should be familiar with the laws and local protocols governing drug administration in emergency situations in your state.
- A MARK I kit contains two auto-injectors: unit 1 contains 2 mg of atropine, and unit 2 contains 600 mg of 2-PAM Chloride.
- You should identify at least 2 signs and symptoms of nerve agent poisoning before beginning treatment. Doses may be repeated as clinically indicated. Atropine treatment should be repeated until the patient is atropinized. Incremental 2-PAM Chloride dosages may be repeated until the maximum dose based on body weight is achieved.
- If an adult patient shows mild signs of miosis and rhinorrhea after vapor exposure, experts generally recommend observation only.
- A slow IV should be administered over a 20 - 30 minute period in 250 ml of normal saline or 250 ml 5% D/W solution.

## **SIGNS AND SYMPTOMS**

If an adult patient shows mild signs of miosis and rhinorrhea after vapor exposure, experts generally recommend observation only.

### **MILD SIGNS AND SYMPTOMS:**

Miosis (pinpoint pupil)  
Blurry vision  
Chest tightness  
Rhinorrhea (runny nose)  
Lacrimation (tearing)

### **MODERATE SIGNS AND SYMPTOMS:**

Above signs/symptoms plus  
Significant respiratory distress  
GI effects  
Muscle weakness  
Fasciculations  
Excessive lacrimation  
Nausea; vomiting; diarrhea; cramps

### **SEVERE SIGNS AND SYMPTOMS:**

Above signs/symptoms plus  
Convulsions  
Respiratory failure  
Loss of consciousness

## Treatment of Adults Exposed to Nerve Agent Vapor

### Mild signs and symptoms:

Atropine:

2 mg IV or IM (1 auto-injector)

Repeat doses at 5 to 10 minute intervals until patient is atropinized.

2-PAM Chloride:

1 g by slow IV or 600 mg IM (1 auto-injector)

### Moderate signs and symptoms:

Atropine:

4 mg IV or IM (2 auto-injectors)

Repeat doses at 5 to 10 minute intervals until patient is atropinized.

2-PAM Chloride:

1 g by slow IV (repeat hourly as needed for up to a total of 3 g in 3 hours) or 1200 mg IM (2 auto-injectors)

### Severe signs and symptoms:

Atropine:

6 mg IV or IM (3 auto-injectors)

Once hypoxemia is reversed, an additional 2 mg IV at 3 to 5 minute intervals may be required to support airways.

2-PAM Chloride:

1 to 2 g by slow IV (repeat hourly as needed for up to a total of 3 g in 3 hours) or 1800 mg IM (3 auto-injector)

Diazepam:

10 mg IM or 5 mg IV (repeat doses as required)

## Treatment for Direct Contact Exposure to Nerve Agent: Adults

A person exposed to liquid nerve agent should be treated according to the signs and symptoms as a person exposed to nerve agent vapor. Due to the slower uptake, however, onset of symptoms may be delayed for 1 to 2 hours and some symptoms may not appear until after 6 hours.

**Mild signs and symptoms:** Onset of sweating and muscle fasciculation at site of exposure 1 to 2 hours after exposure should be treated with:

Atropine:

2 mg IM (1 auto-injector)

2-PAM Chloride:

600 mg IM (1 auto-injector) or 1 g slow IV

**Moderate signs and symptoms:** Onset of GI symptoms more than 6 hours after exposure should be treated with:

Atropine:

2 mg IM (1 auto-injector)

2-PAM Chloride:

600 mg IM (1 auto-injector)

**Severe signs and symptoms:** Same as for vapor exposure.

Atropine:

6 mg IM (3 auto-injector)

2-PAM Chloride:

1 to 2g by slow IV (repeat hourly as necessary for up to 3g in 3 hrs)

## **Treatment of Adolescents, Children, and Infants**

Treatment varies depending on age and body weight of child or adolescent. The adult- size atropine and 2-PAM Chloride auto-injectors should never be given to infants.

### **Atropine: (depends on age)**

Repeat doses for all age groups as clinically indicated until patient is atropinized.

Less than 2 years: 0.5 mg IV or IM

2 to 10 years: 1 mg IV or IM

Over 10 years or adolescent: 2 mg IV or IM (1 auto-injector)

### **2-PAM Chloride: (depends on body weight)**

Less than 50 lbs. (22.7 kg): 15 mg per kg of body weight by slow IV

Over 50 lbs.: 600 mg IM (1 auto-injector)

Repeat doses at hourly intervals as clinically indicated (no more than twice).

### **Diazepam: (depends on age)**

Infants over 30 days to children age 5 years:

0.2 mg to 0.5 mg per kg of body weight slowly every 2 to 5 minutes, up to maximum total dose of 5 mg IV or IM

Children over 5 years:

1 mg every 2 to 5 minutes, up to maximum total dose of 10 mg