



## NERVE AGENT ANTIDOTE ADMINISTRATION

**Effective** June 2012  
**Replaces** New  
**Review** June 2021

### Introduction

Nerve Gas auto-injectors are to be used when EMS personnel are exposed to nerve agents (Sarin, Soman, Tabun, Vx) and have signs and symptoms of nerve agent exposure, or when EMS personnel treat victims in an MCI situation in the hot zone.

### Equipment

- DuoDote Autoinjector or
- Mark I autoinjector antidote kit containing:
  - **Atropine** autoinjector (2 mg in 0.7 ccs)
  - **Pralidoxime Chloride** autoinjector - **2-PAM** (600 mg in 2 cc's)
- Additional **Atropine** (2 mg) autoinjectors



MARK I antidote kit/  
DuoDote Auto injector

### Procedure

If you experience any or all of the nerve agent poisoning symptoms, you must IMMEDIATELY self-administer the nerve gas antidote

### Injection Site Selection

- The injection site for administration is normally in the **outer thigh muscle** (Figure 1). It is important that the injections be given into a large muscle area.
- If the individual is thinly-built, then the injections should be administered into the **upper outer quadrant of the buttocks** (Figure 2).

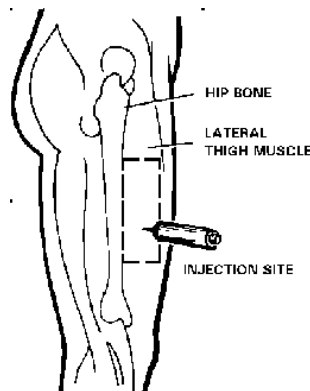


Figure 1 - Thigh injection site

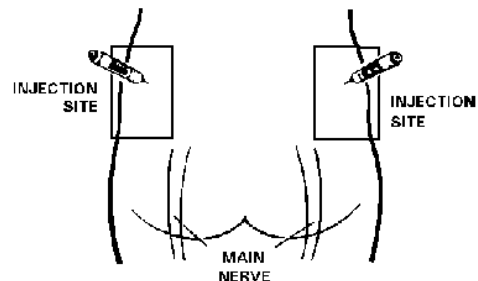


Figure 2 - Buttocks injection site

### Arming The Mark-I Autoinjector:

- Immediately put on your protective mask.
- Remove the antidote kit
- With your non-dominant hand, hold the autoinjectors by the plastic clip so that the larger autoinjector is on top (Figure 3A) and both are positioned in front of you at eye level.
- With your dominant hand grasp the **Atropine** autoinjector (the smaller of the two) with the thumb and first two fingers (Figure 3B). DO NOT cover or hold the needle end with your hand, thumb, or fingers—you might accidentally inject yourself. An accidental injection into the hand WILL NOT deliver an effective dose of the antidote, especially if the needle goes through the hand.
- Pull the injector out of the clip with a smooth motion (Figure 3C). **The autoinjector is now armed.**

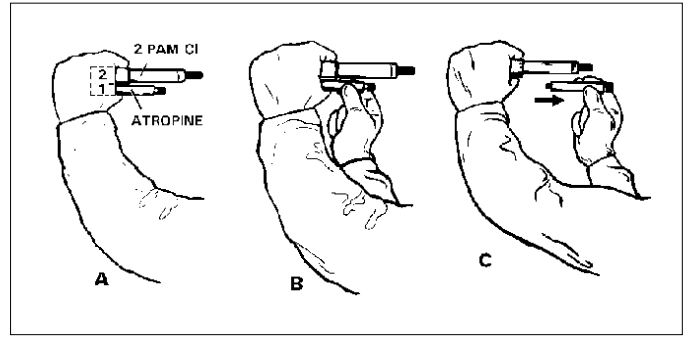
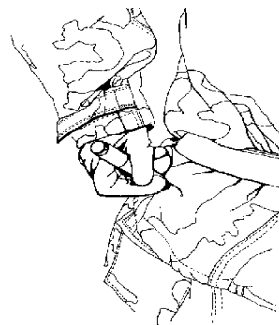
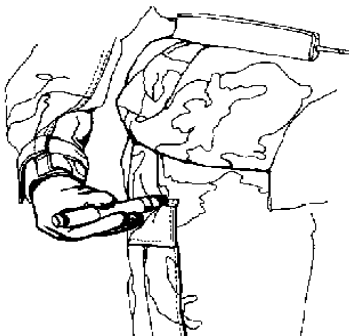


Figure 3 - Removing **Atropine** autoinjector from the clip.

### Administering the antidote to yourself:

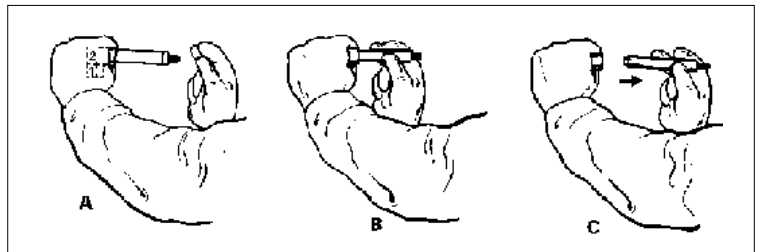
The Santa Clara County EMS Agency, due to regulatory constraints, does not directly authorize self-administration of medications. Any agency or provider which elects to utilize these procedures for the purpose of self-administration should obtain approval and authorization from their own risk management and/or medical director.

- Hold the autoinjector with your thumb and two fingers (pencil writing position). Be careful not to inject yourself in the hand!
- Position the green (needle) end of the injector against the injection site (thigh or buttock) (Figure 4). DO NOT inject into areas close to the hip, knee, or thigh bone.



**Figure 4:** Thigh and buttock sites for self-administration

- Apply firm, even pressure (not jabbing motion) to the injector until it pushes the needle into your thigh (or buttocks). Using a jabbing motion may result in an improper injection or injury to the thigh or buttocks.
- Hold the injector firmly in place for at least 10 seconds. Firm pressure automatically triggers the coiled spring mechanism. This plunges the needle through the clothing into the muscle and at the same time injects the antidote into the muscle tissue.
- Carefully remove the autoinjector from your injection site.
- Next pull the **2 PAM** injector (the larger of the two) out of the clip (Figure 5)
- Inject yourself in the same manner as the steps above, holding the black (needle) end against your outer thigh (or buttocks) (Figure 4).
- Massage the injection sites, if time permits.
- After administering the first set of injections, wait 5 to 10 minutes. After administering one set of injections, you should initiate decontamination procedures, as necessary, and put on any remaining protective clothing.



**Figure 5 -** Removing 2 PAM autoinjector from clip.

**Atropine only** should be repeated as needed. (Note: multiple doses of **Atropine** may be needed – see Dosage Scheme for Mark I Administration below.)

**Administering the antidote to another in the Hot Zone:**

- Ensure appropriate personal protective actions and patient protection to eliminate or reduce additional contamination/exposure.
- Squat, DO NOT kneel, when masking the casualty or administering the nerve agent antidotes to the casualty. Kneeling may force the chemical agent into or through your protective clothing.
- Position the casualty on his or her side (swimmers position).
- Position yourself near the casualty's thigh.
- The procedure for site selection and medication administration is the same as outlined above.

**Atropine only** should be repeated as needed. (Note: multiple doses of **Atropine** may be needed – see Dosage Scheme for Mark I Administration below.)

**DOSAGE SCHEME FOR MARK I/ Duodote ADMINISTRATION** - via autoinjector for self administration or use in the hot zone

Signs & Symptoms	Onset	# of autoinjectors to use:
I. Vapor: small exposure • Pinpoint pupils • Runny nose • Mild SOB	Seconds	MARK I autoinjector antidote kit – <b>1 dose initially</b> (containing <b>Atropine</b> and 2-PAM) or 1 Duodote autoinjector May repeat x1 in 10 minutes
II. Liquid: small exposure • Sweating • Twitching • Vomiting • Feeling weak	Minutes to Hours	MARK I autoinjector antidote kit – <b>1 dose initially</b> (containing <b>Atropine</b> and 2-PAM) Or 1 Duodote autoinjector May repeat x1 in 10 minutes
III. Both: large exposure • Convulsions • Apnea • Copious secretions	Seconds to Hours	MARK I autoinjector antidote kit – <b>3 doses initially</b> (containing <b>Atropine</b> and 2-PAM) Or 1 Duodote autoinjector

