



Nerve Agent Antidote (Mark 1 Kit) Administration

I. INTRODUCTION

Nerve Agent antidote 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.

II. EQUIPMENT

A. Mark 1 auto-injector antidote kit containing:

1. **Atropine** auto-injector (2 mg in 0.7 mL)
2. **2-PAM (Pralidoxime Chloride)** auto-injector (600 mg in 2 mL)



B. Additional **Atropine** (2 mg) auto-injectors

III. PROCEDURE

A. EMS providers experiencing any symptoms of nerve-agent poisoning symptoms should **IMMEDIATELY** receive or self-administer the nerve agent antidote.

B. Injection Site Selection:

1. 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.
2. If the individual is thinly built, then the injections should be administered into the upper outer quadrant of the buttocks (Figure 2).

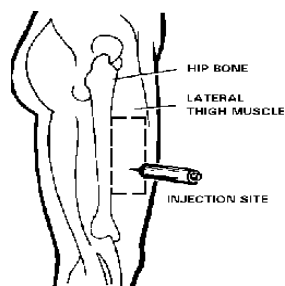


Figure 1 - Thigh injection site

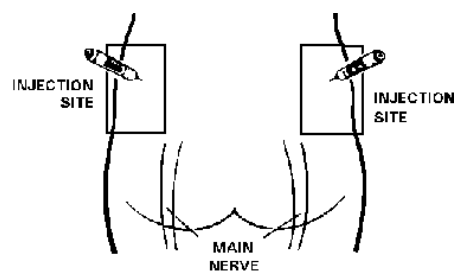


Figure 2 - Buttocks injection site

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C. Arming The Auto injector:

1. Immediately put on your protective mask.
2. Remove the antidote kit.
3. With your non-dominant hand, hold the auto-injectors by the plastic clip so that the larger auto-injector is on top and both are positioned in front of you at eye level. With your dominant hand, grasp the Atropine auto-injector (the smaller of the two) with the thumb and first two fingers (Figure 3). To avoid accidental injection to the hand or finger, DO NOT cover or hold the needle end with your hand, thumb, or fingers. An accidental injection into the hand WILL NOT deliver an effective dose of the antidote, especially if the needle goes through the hand.
4. Pull the injector out of the clip with a smooth motion. The auto-injector is now armed.



Figure 3- Removing the Atropine injector from the clip.

D. Self-Administration of the antidote:

The Monterey County EMS Agency, due to regulatory constraints, does not directly authorize self-administration of medications. Any agency or provider that 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.

1. Hold the auto-injector with your thumb and two fingers (pencil writing position). Be careful not to inject yourself in the hand or finger!
2. 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 thighbone.



Figure 4: Atropine thigh self-administration

3. 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.
4. 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.
5. Carefully remove the auto injector from your injection site.
6. Next pull the **2 PAM** injector (the larger of the two) out of the clip (Figure 5).

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7. Inject yourself in the same manner as the steps above, holding the black (needle) end against your outer thigh (or buttocks) (Figure 6).



Figure 5- Removing **2 PAM** Auto-injector from clip

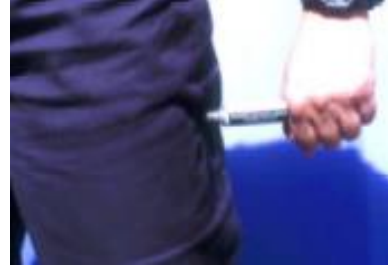


Figure 6 - **2 PAM** thigh self-administration

8. Massage the injection sites if time permits.
9. 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.
10. **Atropine only** should be repeated as needed. (Note: multiple doses of **Atropine** may be needed – see Dosage Chart for Mark 1 Administration below.)

E. Administering the antidote to another individual in the Hot Zone:

1. Ensure appropriate personal protective actions and patient protection to eliminate or reduce additional contamination/exposure.
2. Squat, DO NOT kneel, when masking the individual or administering the nerve agent antidotes to the individual. Kneeling may force the chemical agent into or through your protective clothing.
3. Position the individual on his or her side (swimmer's position).
4. Position yourself near the individual's thigh.
5. The procedure for site selection and medication administration is the same as outlined above.
6. **Atropine only** should be repeated as needed. (Note: multiple doses of **Atropine** may be needed – see Dosage Chart for Mark 1 Administration below.)

F. Dosage Chart for Mark 1 Administration - via auto-injector for self-administration or use in the hot zone

Signs & Symptoms	Onset	# of auto injectors to use:
Vapor: small exposure • Pinpoint pupils • Runny nose • Mild SOB	Seconds	Mark 1 auto-injector antidote kit – 1 dose initially (contains Atropine and 2-PAM) May repeat x 1 in 10 minutes.
Liquid: small exposure • Sweating • Twitching • Vomiting • Feeling weak	Minutes to Hours	Mark 1 auto-injector antidote kit – 1 dose initially (containing Atropine and 2-PAM) May repeat x 1 in 10 minutes.
Both: large exposure • Convulsions • Apnea • Copious secretions	Seconds to Hours	Mark 1 auto-injector antidote kit – 3 doses initially

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END OF POLICY