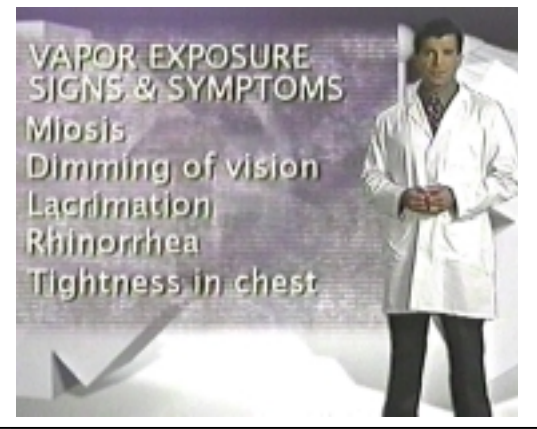
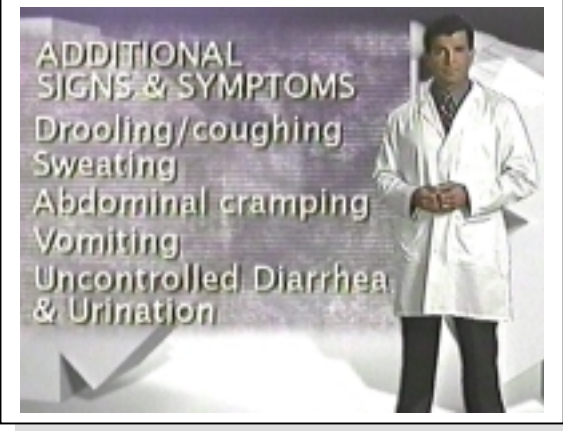


SECTION 4. NERVE AGENT SIGNS AND SYMPTOMS**4.1 Objectives**

At the end of this section, the student should be able to:

1. Describe the usual first signs and symptoms of nerve agent exposure.
2. Describe additional signs and symptoms that may occur later.
3. Describe the effects of nerve agent exposure by direct contact.
4. Describe what differential diagnosis is and how it is applied in treating persons exposed to nerve agents.

VOICE	SCREEN	NOTES
<p>4.2 Usual first signs of nerve agent exposure</p> <p>Since nerve agent vapors are colorless, odorless, and non-irritating to the skin, people can be lightly exposed without even knowing it.</p> <p>The usual first signs of nerve agent vapor exposure are miosis, or pinpointing of pupils, dimming of vision, excessive tear formation (called lacrimation), runny nose (called rhinorrhea), and tightness in the chest.</p>		
<p>4.3 Additional signs and symptoms of nerve agent exposure</p> <p>If the amount or dose is high, these signs can be accompanied by drooling and coughing; sweating; abdominal cramping; vomiting; uncontrolled diarrhea, and urination. High doses can</p>		

VOICE	SCREEN	NOTES
<p>result in seizures and convulsions, loss of consciousness, respiratory failure, and death.</p>		
<p>It's important to note that not all of these effects will occur in everyone exposed. It all depends on the dose received.</p>		
<p>4.4 Peak effects</p>		
<p>If the exposure route is vapor inhalation, and a high concentration of agent is present, effects can occur after a single breath. This response occurs within seconds. After the patient has been removed from the agent source, peak effects are likely to occur within 15 to 20 minutes. The effects do not usually worsen after this period of time.</p>	<p>Peak Effects Within 15-20 Minutes</p>	

VOICE	SCREEN	NOTES
<p>If the nerve agent exposure route is through direct skin contact, effects may continue for hours after decontamination is completed. This is because decontamination removes agent from the skin surface only, and agent can be present inside skin layers where it is absorbed into the blood stream over an extended period of time. With a less than lethal skin exposure, effects may not appear for up to 18 hours. For this reason, anyone suspected of having liquid nerve agent (including aerosols) on the skin should be kept under medical observation for a least 18 hours. Effects that appear many hours after exposure are usually not lethal due to the smaller quantities of agent involved.</p>	<ul style="list-style-type: none"> • Effects may not appear for up to 18 hours • Keep patients under observation at least 18 hours 	

VOICE	SCREEN	NOTES
<p>Though respiratory failure is the main cause of death in severely exposed people, breathing difficulty is not likely to occur unless exposure is moderate to severe.</p>	<p>Perform a Differential Diagnosis</p>	
<p>4.5 Performing a differential diagnosis</p>		
<p>Differential diagnosis—that is, differentiating between signs and symptoms of nerve agent exposure and other medical conditions—must be performed. Some signs and symptoms of nerve agent exposure are similar to more common medical conditions such as grand mal epileptic seizures, cerebrovascular accidents, emphysema, head trauma, or drug overdose. Knowing the medical history of a person or, if the person is unconscious, looking for medic-alert bracelets or cards may assist in deciding if he or she may have been exposed to nerve agent.</p>		

