



NERVE AGENTS

Agent Information:	Nerve agents are chemical warfare agents, including Sarin (GB), Tabun (GA), Soman (GD), Cyclohexyl Sarin (GF), VX, and Novichok agents similar to organophosphorus compounds such as carbamates and pesticides. These compounds have various other chemical names as well.
Signs and Symptoms:	Signs and symptoms vary, depending on the route and level of exposure. Signs of aerosol exposure include pinpoint pupils (miosis), increased secretions, hyper-salivation, bronchoconstriction, respiratory arrest, diarrhea, decreased memory and concentration; and loss of consciousness. Symptoms from moderate aerosol exposure include diffuse muscle cramping, runny nose, dimmed vision, difficulty breathing, muscle tremors, sweating and eye pain. (Note: Ocular findings may not be present in dermal exposure to liquids. Local sweating would be more pronounced on skin with liquid exposure.) Symptoms of high-level aerosol exposure include the above, plus sudden loss of consciousness, seizures and flaccid paralysis (late sign). Onset from aerosols is seconds to minutes; from liquids, the onset is minutes to hours.
Route of Exposure:	Inhalation and dermal absorption.
Protective Measures:	Persons whose skin or clothing is contaminated with nerve agent can contaminate rescuers by direct contact or through off-gassing vapor. Persons whose skin is exposed only to nerve agent vapor pose no risk of secondary contamination; however, clothing can trap vapor. Removing patient's clothing will eliminate any trapped gases, reducing risk of secondary contamination. PPE includes hooded PAPR, biochem suit, gloves, boots, etc.
Lab Samples Requested for Evaluation:	Lab tests for confirmation only. Red blood cell or serum cholinesterase; whole blood (purple top tube).
Prophylaxis:	Appropriate PPE to avoid secondary contamination.
Treatment:	Supportive care. Atropine (2 mg) IV; repeat every 5 minutes, titrate until effective, average dose 6 to >15 mg – use IM in the field before IV access (establish airway for oxygenation). Pralidoxime chloride (2-PAM-Cl) 600-1800 mg IM or 1.0 g IV over 20-30 minutes (maximum 2 g IM or IV per hour). Additional doses of atropine and 2-PAM-Cl depending on severity. Diazepam or lorazepam to prevent seizures if >4 mg atropine given.
Reporting:	Report suspect cases immediately to Delaware's Division of Public Health, Epidemiology Branch: 1-888-295-5156 (24/7 coverage).
Contact Information:	Delaware's Division of Public Health: 1-888-295-5156. For additional information, view the Centers for Disease Control and Prevention (CDC) website for Emergency Preparedness and Response at www.bt.cdc.gov

24/7 Emergency Contact Number: 1-888-295-5156

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