

Cyanide Poisoning (Adult and Pediatric)

CRITERIA

- This protocol is for critical patients with exposure to cyanide
- A class order is required when operating at a scene with suspected cyanide exposure secondary to weapons of mass destruction (WMD)
- The class order may be issued by a FDNY OMA Medical Director who is on scene or as relayed through an FDNY OMA Medical Director via online medical control or FDNY Emergency Medical Dispatch
- The issuance of any class order shall be conveyed to all regional online medical control facilities for relay to units in the field
- Treatment within the “hot” and “warm” zones is to be performed only by appropriately trained personnel wearing appropriate chemical protective clothing (CPC) as determined by the FDNY Incident Commander
- If providers encounter a patient who has not been appropriately decontaminated from liquid cyanide, the providers should leave the area immediately until appropriate decontamination has been performed

CFR and All Provider Levels

1. ABCs and vital signs
2. Airway management
3. Administer oxygen via non-rebreather
4. Assess for shock and treat as needed
5. Assess and treat for burns as needed

CFR STOP

EMT

6. Request ALS assistance
7. Transport

EMT STOP

Paramedic

8. Perform advanced airway management as needed
9. Begin cardiac monitoring
10. Obtain at least two sites of intravascular access

11. Administer Hydroxocobalamin and Sodium Thiosulfate for patients with ANY of the following conditions:

- Cardiac arrest
- Respiratory arrest
- Altered mental status
- Seizures
- Hypotension not attributable to obvious causes

Obtain three blood samples using the tubes provided in the Cyanide Toxicity Kit PRIOR to the administration of Hydroxocobalamin as soon as possible

11.1 Administer Hydroxocobalamin as follows:

- **ADULT:** Hydroxocobalamin 5 g IV over 15 minutes. Repeat if patient has persistent symptoms
- **PEDIATRIC:** Hydroxocobalamin 75 mg/kg IV (3 ml/kg of prepared solution) (maximum 5 g) over 15 minutes. Repeat if patient has persistent symptoms

11.2 Administer Sodium Thiosulfate as follows:

- **ADULT:** Sodium Thiosulfate 12.5 g IV (150 ml of prepared solution) over 10 minutes
- **PEDIATRIC:** Sodium Thiosulfate 250 mg/kg IV (3 ml/kg of prepared solution) (maximum 12.5 g) over 10 minutes

Paramedic STOP

Medical Control Options

Key Points / Considerations

Cyanide Toxicity Kit

Item	Quantity
Hydroxocobalamin 5 g bottle (crystalline powder)	1
Sodium Thiosulfate 12.5 g bottle (25% solution)	1
Normal Saline or D ₅ W (100 ml bag)	3
20 ml syringe	1
Three-way stopcock connector	1
2 ml fluoride oxalate whole blood tube	1
2 ml K2 EDTA tube	1
2 ml lithium heparin tube	1

- Hydroxocobalamin solution is prepared by adding 200 ml of Normal Saline or D₅W to Hydroxocobalamin 5 g powder in the bottle provided. The vented macro-drip tubing that accompanies the Cyanide Toxicity Kit should be used to administer the Hydroxocobalamin solution. For an adult dose, use in wide-open position to ensure the correct administration time of approximately 15 minutes
- Sodium Thiosulfate solution is prepared by adding Sodium Thiosulfate 12.5 g (50 ml) to a 100 ml bag of Normal Saline or D₅W
- In the event that only one intravascular access line is established, administer Hydroxocobalamin BEFORE Sodium Thiosulfate since Sodium Thiosulfate will inactivate Hydroxocobalamin
- Whenever Hydroxocobalamin is administered, follow with a 20 ml flush of crystalloid fluid prior to administering other medications
- A class order is a general order given by a FDNY OMA Medical Director to perform a specific intervention or interventions at a specific location(s) during a specified time period. This order is generally reserved for disaster situations