

Smoke Inhalation (Adult and Pediatric)

CFR AND ALL PROVIDER LEVELS

1. ABCs and vital signs.
2. Airway management.
3. Administer oxygen.
4. Treat any burns according to the Burns (Adult and Pediatric) protocol.

● CFR STOP

EMT

● EMT STOP

Paramedic

This protocol should be utilized ONLY for the management of symptomatic patients after exposure to smoke in an enclosed space and cyanide exposure is suspected.

5. Perform Advanced Airway Management, if necessary.
6. Begin cardiac monitoring.
7. Begin pulse oximetry monitoring.
8. Begin SpCO monitoring, if available.
9. Obtain at least two (2) sites of intravascular access.
10. Administer Hydroxocobalamin and Sodium Thiosulfate IV for patients with any of the following symptoms according to Table 1, if available:
 - a. Cardiac arrest
 - b. Respiratory arrest
 - c. Altered mental status
 - d. Seizures
 - e. Hypotension not attributable to other obvious causes

NOTE: Prior to administration of Hydroxocobalamin, obtain three blood samples using the tubes provided in the cyanide toxicity kit.

TABLE 1: Cyanide Toxicity Kit (Hydroxocobalamin 5 g in 250 ml bottle, Sodium Thiosulfate 12.5 g in 50 ml vial).		
Age Group	Hydroxocobalamin ^A	Sodium Thiosulfate ^B
Pediatric (0 - 14 years)	75 mg/kg (3 ml/kg of the prepared Hydroxocobalamin solution) IV over 15 minutes Maximum dose 5 g If needed may repeat 75 mg/kg IV over 15 minutes	250 mg/kg (3 ml/kg of the prepared Sodium Thiosulfate) solution IV over 10 minutes
Adult (≥ 15 years)	5 g (250 ml of the prepared Hydroxocobalamin solution) IV over 15 minutes. If needed may repeat 5 g IV over 15 minutes	12.5 g (150 ml of the prepared Sodium Thiosulfate solution) IV over 10 minutes

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11. Hydroxocobalamin solution is prepared by adding 200 ml of NS / D₅W to Hydroxocobalamin 5 g powder in the bottle provided. Due to the volume of Hydroxocobalamin powder, the total volume of Hydroxocobalamin solution will be 250 ml.

The vented macro drip tubing that accompanies the Cyanide Toxicity Kit should be used to administer the Hydroxocobalamin solution in the wide open position to ensure the correct administration time of approximately 15 minutes.

12. Sodium Thiosulfate solution is prepared by adding Sodium Thiosulfate 12.5 g (50 ml) to a 100 ml bag of NS or D₅W for a total volume of 150 ml.

NOTE: In the event that only one intravascular access line is established, administer Hydroxocobalamin BEFORE Sodium Thiosulfate as Sodium Thiosulfate will inactivate Hydroxocobalamin.

NOTE: Whenever Hydroxocobalamin is administered, follow with a 20 ml flush of crystalloid fluid prior to administration of any other medication.

13. For patients who remain in shock after the administration of a crystalloid bolus, administer vasopressors per the Shock/Sepsis (Adult) protocol.

● Paramedic STOP

Key Points / Considerations

1. Vasopressor infusions should be administered, preferably via an 18 gauge or larger IV catheter, or an IO, using an an IV flow regulating device. Standard IV administration sets are not considered IV flow regulating devices.
2. For patients with smoke inhalation who have signs and symptoms consistent with carbon monoxide poisoning, refer to the Carbon Monoxide (Adult and Pediatric) protocol.

CYANIDE TOXICITY KIT (if available)	
One (1) 5 g bottle of crystalline powder Hydroxocobalamin	One (1) 2 ml fluoride oxalate whole blood tube
One (1) 12.5 g bottle of Sodium Thiosulfate (50 ml of 25% solution)	One (1) 2 ml K2 EDTA tube
Three (3) 100 ml bags 0.9% NS, D ₅ W	One (1) 2 ml lithium heparin tube
20 ml syringe	Three way stopcock connector