

TOXIC INHALATION / INGESTION

CYANIDE

Airway / Breathing

Circulation / Shock

Cardiac

Medical

Trauma

POTENTIAL EXPOSURES

Smoke Inhalation

Intentional or unintentional poisoning or ingestion of Laetrile (vitamin B17) or multiple fruit pits.

Industrial exposure such as metal plating and recovery, plastics, industrial uses of hydrogen cyanide or medical complications from the use of sodium nitroprusside.

UNIVERSAL PATIENT CARE PROTOCOL

Cyanide Ingestion or Inhalation

Immediately Remove From Continued Exposure
Avoid Exertion to Limit Tissue Oxygen Demand
Determine Exposure Time

APPLY HIGH FLOW OXYGEN

CAPNOGRAPHY PROCEDURE

Secure Airway If Comatose or Compromised Airway Follow AIRWAY PROTOCOL

CARDIAC MONITORING PROCEDURE

PULSE OXIMETRY

PULSE CO-OXIMETRY (If Available)

IV / IO PROCEDURE

To Maintain MAP > 65
or SBP 90 if MAP Unavailable or Radial Pulses
Place 2 IV's

Draw blood sample if considering / supplied with Hydroxocobalamin (Cyanokit)

Hydroxocobalamin if supplied / available

Reconstitute medication with 200 ml of Normal Saline (or to fill line)

Mix thoroughly but do not shake
5 grams IV drip SLOW over 15 - 20 minutes
Monitor for hypotension

EPINEPHRine

PUSH DOSE

Make 10 mcg / ml

10 mcg (1 ml) prn - slow push

Titrate to effect

To Maintain MAP > 65 or SBP 90 if MAP Unavailable or Radial Pulses
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 May use up to 50 mcg (5 ml) per dose if needed

TRANSPORT to appropriate facility

CONTACT receiving facility

CONSULT Medical Control where indicated

APPROPRIATE transfer of care

Aggressive airway management with delivery of 100% oxygen can be lifesaving.
Supportive care with administration of oxygen alone has proven effective in a number of poisonings. It can also treat potential simultaneous CO exposure.

EMT Intervention

AEMT Intervention

PARAMEDIC Intervention

Online Medical Control

TOXIC INHALATION / INGESTION

CYANIDE

HISTORY	SIGNS AND SYMPTOMS	DIFFERENTIAL DIAGNOSIS
<ul style="list-style-type: none"> Inhalation or ingestion of cyanides Duration of exposure Reason (suicidal, accidental, criminal) Past medical history, medications 	<ul style="list-style-type: none"> Malaise, fatigue, drowsiness Reddened skin Dyspnea Chest pain Nausea / vomiting Abdominal pain Dizziness / vertigo Memory disturbances Syncope Seizures Coma 	<ul style="list-style-type: none"> Flu / severe cold Chronic fatigue Migraine Myocardial infarction / ACS Encephalitis Anaphylaxis Other ingested toxins Pulmonary embolism

POISON CONTROL 1-800-222-1222

KEY POINTS
<ul style="list-style-type: none"> Exam: Mental Status, Skin, HEENT, Heart, Lungs, Abdomen, Extremities, Neuro Cyanide is generally considered to be a rare source of poisoning. Cyanide exposure occurs relatively frequently in patients with smoke inhalation from fires. Numerous forms of cyanide exist, including gaseous hydrogen cyanide (HCN), water-soluble potassium and sodium cyanide salts, and poorly water-soluble mercury, copper, gold, and silver cyanide salts. Several synthesized (polyacrylonitrile, polyurethane, polyamide, urea-formaldehyde, melamine) and natural (wool, silk) compounds produce HCN when burned. Industry widely uses nitriles as solvents and in the manufacturing of plastics. Nitriles may release HCN during burning or when metabolized following absorption by the skin or gastrointestinal tract. Cyanide poisoning also may occur in other industries, particularly in the metal trades, mining, electroplating, jewelry manufacturing, and x-ray film recovery. Depending on its form, cyanide may cause toxicity through parenteral administration, inhalation, ingestion, or dermal absorption. Rapid aggressive therapy, consisting of supportive care and antidote administration, is lifesaving. The delay between exposure and onset of symptoms depends on type of cyanide involved, route of entry, and dose. Rapidity of symptom onset, depending on the type of cyanide exposure, occurs in the following order (most rapid to least rapid): gas, soluble salt, insoluble salt, and cyanogens.