

<b>Medication:</b> Hydroxocobalamin	<b>PDN:</b> 6961.03	<b>Last Updated:</b> August 21 2025	<b>PMD:</b> Andrew Travers*	<b>PDC:</b> Chloe Koen-Butt	Page 1 of 2
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## HYDROXOCOBALAMIN (CYANOKIT)

### 1.0 Classification

- Vitamin (B12a); used as a cyanide antidote

### 2.0 Mechanism of Action

- Binds to cyanide, creating nontoxic cyanocobalamin (vitamin B12)

### 3.0 Indications

- Cyanide poisoning from hydrogen cyanide gas (smoke inhalation), ingestion of cyanide salts, or high dose nitroprusside infusions.
- Hydroxocobalamin may be used alone or in combination with sodium thiosulfate.

### 4.0 Contraindications

- None in the emergency setting

### 5.0 Precautions

- Hydroxocobalamin should be administered with caution for patients with known anaphylactic reactions to hydroxocobalamin or cyanocobalamin.
- Hydroxocobalamin cannot be administered in the same line as any other drugs, especially sodium thiosulfate.
- Hydroxocobalamin vials must be protected from light.
- Blood pressure monitoring is required during treatment with hydroxocobalamin.

### 6.0 Route

- May be given IV

### 7.0 Dosage

#### To Reconstitute Hydroxocobalamin:

##### If using 5 g vial:

- Using the transfer spike provided in the kit, reconstitute the vial with 200 mL sodium chloride 0.9% (normal saline)
- Rock or invert the vial for at least 1 minute to mix (DO NOT SHAKE); reconstituted solution should be dark red in colour.

##### If using 2.5 g vials:

- Using the provided transfer spike provided in the kit, reconstitute both vials with 100 mL sodium chloride 0.9% (normal saline)
- Rock or invert the vials for at least 1 minute to mix (DO NOT SHAKE); reconstituted solution should be dark red in colour.

#### Adult

- 5 g IV over 15 minutes (one 5 g vial or two 2.5 g vials successively) using the administration set provided with the kit (as it contains the appropriate filter); the administration set can be piggybacked into a primary line.
- Receiving facility can repeat dose as required.

**Pediatric**

- 70 mg/kg IV (not to exceed 5 g) over 15 minutes using the administration set provided with the kit (as it contains the appropriate filter); the administration set can be piggybacked into a primary line. The kit also contains a short catheter for the purposes of pediatric administration.
- Receiving facility can repeat dose as required.

**8.0 Supplied**

- Kit containing either:
  - One 250 mL vial containing 5 g of lyophilized hydroxocobalamin
  - Two 250 mL vials each containing 2.5 g of lyophilized hydroxocobalamin

**9.0 May Be Given By**

- PCP/ACP/CCP

**10.0 Adverse effects**

- Hypertension (transient; will decrease within 4 hours of dose)
- Nausea
- Headache
- Dizziness
- Red discoloration of the urine
- Erythema (skin or mucous membranes)
- Rash

**11.0 Special notes**

- Cyanide poisoning may result from inhalation, ingestion, or dermal exposure. Prior to the administration of hydroxocobalamin for patients with smoke-inhalation they should be assessed for exposure to fire or smoke in an enclosed area as well as the presence of soot around the mouth, nose, or oropharynx, or altered mental status.
- Treatment of cyanide poisoning must also include attention to the airway, oxygenation, hydration, cardiovascular support and management of any seizure activity.
- Hydroxocobalamin turns all secretions red. It is important to differentiate between this and bleeding.
- Pregnancy category C [if the patient will benefit from a Category C drug, it is generally used]

**12.0 References**

- Atlantic Canada Poison Centre
- CYANOKIT drug monograph

\*Electronically Signed

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