

Disclaimer: These quizzes may be used in conjunction with the Cyanokit® Training DVD, if desired. Passing these quizzes, however, is not intended to be used to verify or certify a participant's knowledge of, or ability to address, events that may involve cyanide poisoning, and Dey, L.P. and the Florida Department of Health disclaims any and all liability for any such use. These quizzes are provided as a courtesy in response to customer requests.

Quiz 1.1

1. Cyanide can exist in all of the following forms except...
 - a. liquid
 - b. gas
 - c. solid
 - d. concrete
 - e. All of the above

2. Cyanide can cause human toxicity by multiple routes. *Circle all that apply*
 - a. dermal contact
 - b. conjunctive contact
 - c. ingestion
 - d. inhalation
 - e. telepathic

3. The most common cause of cyanide poisoning in industrialized countries is...
 - a. suicide
 - b. homicide
 - c. industrial accident
 - d. smoke inhalation from structural fires
 - e. terrorism

4. Some foods containing cyanogenic glycosides can cause cyanide toxicity when they are...
 - a. prepared incorrectly
 - b. ingested and/or metabolized in the body
 - c. fermented
 - d. burned

5. Cyanide has been intentionally used in all of the following except...
 - a. homicide
 - b. suicide
 - c. war
 - d. terrorism
 - e. professional wrestling

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Quiz 1.2

1. Smoke inhalation causes up to 80% of the approximately.....
 - a. 2500 fire related deaths each year
 - b. 20,000 civilian and firefighter injuries and 4000 fire related deaths each year
 - c. 5000 cyanide poisonings each year

2. Fire related morbidity and mortality have....
 - a. increased dramatically in the last ten years
 - b. decreased in relation to the safety of homes and cars
 - c. increased with the increase in structural fires
 - d. not declined although structural fires in the U.S. have

3. Hydrogen Cyanide is produced when materials containing these two elements are burned...
 - a. oxygen and nitrogen
 - b. nitrogen and carbon
 - c. hydrogen and oxygen
 - d. helium and plutonium

4. Common materials that produce cyanide gas when burned are... **Circle all that apply**
 - a. nylon
 - b. styrofoam
 - c. paper
 - d. plastic
 - c. coffee

5. Cyanide toxicity that causes death indirectly due to incapacitation is often referred to as the...
 - a. one-two punch
 - b. silent killer
 - c. knock-down effect
 - d. toxic breath
 - e. big sleep

6. Cyanide poisoning can be a more important determinant of smoke-inhalation mortality than...
 - a. carbon dioxide
 - b. hydrogen peroxide
 - c. carbon monoxide
 - d. monosaccharides
 - e. all of the above

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Quiz 1.3

1. The annual production capacity of hydrogen cyanide for the U.S. in 2004 was...
 - a. 6.3 tons
 - b. 200,000 liters
 - c. 1.8 billion pounds
 - d. 18 tons
 - e. 20,000 tons

2. The use of cyanide in industry is associated with the risk of cyanide exposure through...
 - a. transportation accidents
 - b. terrorism
 - c. industrial or occupational accidents
 - d. intentional poisoning

3. Cyanide is transported by all of the following except...
 - a. railway
 - b. highway
 - c. airway
 - d. water

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Quiz 1.4

1. Cyanide is well suited as a terrorist weapon because... **Circle all that apply**
 - a. versatile delivery modalities
 - b. abundant
 - c. difficult to obtain
 - d. can cause mass incapacitation and casualties
 - e. large quantities of cyanide are needed to cause injury

2. True or False - A probable outcome of a terrorist attack in which a fire occurs is that cyanide gas will be produced from burning materials.

3. True or False – Terrorist have intended to use cyanide as a weapon in several recently planned attacks

4. In order for an individual to use cyanide as a weapon, they...
 - a. have to have an advanced degree in molecular biology
 - b. have to have studied various specialized delivery systems
 - c. do not need any special education or training
 - d. have to have at least a GED

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Quiz 1.5

1. Immediate intervention on the basis of a presumptive diagnosis for cyanide poisoning is almost always necessary because....
 - a. physicians are too busy to do lab test
 - b. emergency departments always make you wait
 - c. it takes too long to get blood test results back from the lab
 - d. cyanide poisoning usually takes hours to affect a smoke inhalation victim
2. Cyanide preparedness recommendations entail all of the following except...
 - a. education and training of emergency responders
 - b. local and regional stockpiling of cyanide antidotes
 - c. stocking of cyanide antidote kits in the house
 - d. development of protocols for rapid antidote distribution
3. The best word to describe hospital preparedness regarding a cyanide emergency is...
 - a. prepared
 - b. ready
 - c. trained
 - d. inadequate
 - e. available
4. ALS providers' assessment of the likelihood of poisoning from known sources of cyanide exposure in their service areas was...
 - a. high
 - b. low
 - c. underestimated even in areas of higher risk and/or overestimated in areas of low risk
5. New pre-hospital protocols should be created to encourage...
 - a. better understanding of chemistry
 - b. quick response to terrorist threats
 - c. the need for more rapid laboratory test
 - d. empiric treatment of suspected cyanide poisoning
6. Cyanide antidote stockpiling guidelines should reflect...
 - a. the will of the people
 - b. community wide, coordinated emergency response plans
 - c. the local tax base ability to pay
 - d. community religious beliefs.

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Quiz 2.0

1. True or False

Cyanide causes toxicity by disrupting the ability of cells to use oxygen to produce adenosine triphosphate (ATP). The binding of cyanide to the enzyme mitochondrial cytochrome oxidase, inhibits the production of ATP which is needed as source of energy for the cells of the body. The lack of ATP results in cellular dysfunction and death.

2. Mild or early symptoms of cyanide poisoning include all of the following except...

- a. headache
- b. nausea
- c. hypotension
- d. chest tightness
- e. confusion

3. Symptoms of severe cyanide toxicity include... **Circle all that apply**

- a. seizures
- b. coma
- c. respiratory depression
- d. euphoria
- e. cardiac arrest

4. The treatment window for acute cyanide poisoning...

- a. is between 5 and 15 minutes after exposure
- b. depends on the form of cyanide, route, concentration and duration of exposure
- c. is closed after 2 hours
- d. often remains open for days after exposure
- e. closes more quickly when exposure is dermal in nature

5. Cyanide poisoning is diagnosed on the basis of...

- a. urinalysis
- b. psychological examination
- c. signs and symptoms and index of suspicion
- d. patterns of previous behavior
- e. family history

6. Acute cyanide poisoning is a strong possibility when...

- a. the victim speaks in tongues
- b. the victim has soot in the mouth, altered mental status and hypotension
- c. the victim has a history of arson arrest
- d. the victim has lowered plasma lactate concentration, is comatose or unconscious

7. Management of acute cyanide poisoning is treated by all of the following except...

- a. terminating exposure
- b. decontaminating the victim
- c. administering supportive care
- d. inhaled corticosteroids
- e. administering an antidote

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Quiz 2.1

1. Until now, the only cyanide antidote available in the US was called...**Circle all that apply**
 - a. Lilly Kit
 - b. Taylor Kit
 - c. Cyanide Antidote Kit
 - d. Cyanogaurd
 - e. Pasadena Kit

2. The Cyanide Antidote Package has three components...**Circle all that apply**
 - a. Sodium Chloride
 - b. Sodium Nitrate
 - c. Sodium Thiosulfate
 - d. Amyl Nitrate
 - e. Bicarbonate Sodium

3. The cyanide antidote package can not be utilized based on a presumptive diagnosis of cyanide poisoning because...
 - a. the sulfur donor will bind cyanide to form sodium thiocyanate
 - b. nitrates form methemoglobin, reducing the ability of the blood to carry oxygen
 - c. carbon dioxide reduces the ability of the blood to carry oxygen
 - d. nitrates raise blood pressure, increasing risk of cardiovascular failure
 - e. sulfur and carbon monoxide in combination may explode

4. Cyanide poisoning victims may be experiencing hypotension, nitrites...
 - a. may lower blood pressure, leading to cardiovascular failure
 - b. may raise blood pressure, leading to hemodynamic stability
 - c. may decrease vascular permeability
 - d. may increase your chances of psychological impairment

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Quiz 3.1

1. Vitamin B_{12a} is the hydroxylated (**Hydroxylation** is any chemical process that introduces one or more hydroxyl groups (-OH) into a compound (or radical) thereby oxidising it.) form of vitamin B₁₂ and is called...

- a. Hydroxocobalt
- b. Hydroxyclean
- c. Hydroxocodone
- d. Hydroxocobalamin
- e. Hydroman

2. The mechanism of antidotal activity is that....

- a. carbon monoxide molecules are replaced with B₁₂
- b. hydroxocobalmin binds with cyanide to form cyanocobalamin or B₁₂
- c. cyanide enhances hemodynamic stability when B₁₂ is added
- d. hydroxocobalamin binds with carbon monoxide to improve hemodynamic stability

3. Cyanocobalamin or B₁₂...

- a. is toxic in high doses
- b. is unstable and will convert back to cyanide
- c. is stable and non-toxic and is excreted in the urine
- d. is stable and non-toxic and excreted through respiratory activity

4. Hydroxocobalamin may increase....

- a. blood pressure
- b. hypotension
- c. brain activity
- d. renal activity
- e. spiritual awareness

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Quiz 3.2

1. The efficacy of hydroxobolamin was tested using...
 - a. healthy human volunteers
 - b. college students
 - c. a canine model utilizing beagle dogs
 - d. mice
 - e. chimpanzees

2. The number of dogs receiving hydroxocobalamin 75 mg/kg, 150 mg/kg or saline were...
 - a. 22, 24 and 21 respectively
 - b. 19,18 and 17 respectively
 - c. all received hydroxocobalamin
 - d. 30, 31 and 29 respectively
 - e. none of the above

3. The infusion period for all arms of the study was...
 - a. 6.5 min
 - b. 7.0 min
 - c. 8.0 min
 - d. 7.5 min
 - e. 15 min

4. All of the animals in this arm of the study survived....
 - a. the 75 mg/kg group
 - b. the saline group
 - c. the 150 mg/kg group
 - d. the 7.5 mg/kg group
 - e. all animals in the hydroxocobalamin groups survived

5. In the study by Borron et al, 2005, Study in Smoke Inhalation-Associated with Cyanide Poisoning, this many people survived after treatment with hydroxocobalamin...
 - a. 69
 - b. 42
 - c. 50
 - d. 67
 - e. 89

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Quiz 3.3

1. The most common drug related event reported in a study of hydroxocobalamin in healthy volunteers was...

- a. hypotension
- b. hypertension
- c. headache
- d. self-limiting chromaturia and reddening of the skin
- e. euphoria

2. Infusion of hydroxocobalamin can cause...

- a. hyperthyroidism
- b. confusion
- c. an allergic reaction
- d. anemia
- e. hypotension

3. Hydroxocobalamin may interfere with....

- a. clinical laboratory evaluations
- b. vision
- c. cognitive ability
- d. balance
- e. the ability to operate a motor vehicle

4. The pregnancy category for hydroxocobalamin is...

- a. D
- b. X
- c. C
- d. B
- e. A

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Quiz 3.4

1. Hydroxocobalamin is indicated for the treatment of...
 - a. smoke inhalation
 - b. burn victims
 - c. known or suspected cyanide poisoning
 - d. severe allergic reactions
 - e. cardiovascular collapse

2. In addition to administration of an antidote, treatment of cyanide poisoning includes all of the following except...
 - a. decontamination
 - b. cardiovascular support
 - c. Vitamin B₁₂ replenishment
 - d. hydration
 - e. oxygen

3. Cyanokit® for intravenous infusion is supplied in a colorless, 250 mL glass vial containing 2.5 g lyophilized hydroxocobalamin that is pH adjusted with hydrochloric acid. The term lyophilized means....
 - a. baked
 - b. oxidized
 - c. reconstituted
 - d. freeze-dried
 - e. sterilized

4. The recommended initial dose of Cyanokit® for adults is...
 - a. 10 g (4 vials) administered intravenous over 20 minutes
 - b. 5 g (4 vials) administered intramuscular over 15 minutes
 - c. 5 g (2 vials) administered intravenous over 15 minutes
 - d. 100 mL (2 vial) administered intravenous over 15 minute