

**EMT**

Chapter 17 Review

1. Type 1 diabetes is a condition in which:
  - A. too much insulin is produced.
  - B. glucose utilization is impaired.
  - C. too much glucose enters the cell.
  - D. the body does not produce glucose.

**Answer: B**

**Rationale:** Type 1 diabetes is a disease in which the pancreas fails to produce enough insulin (or none at all). Insulin is a hormone that promotes the uptake of sugar from the bloodstream and into the cells. Without insulin, glucose utilization is impaired because it cannot enter the cell.

1. Type 1 diabetes is a condition in which:

A. too much insulin is produced.

**Rationale:** The body only produces the amount of insulin that is needed to enable glucose to enter cells.

B. glucose utilization is impaired.

**Rationale:** Correct answer

1. Type 1 diabetes is a condition in which:

C. too much glucose enters the cell.

**Rationale:** An abnormally high blood glucose level is known as hyperglycemia.

D. the body does not produce glucose.

**Rationale:** Glucose is derived from the oral intake of carbohydrates. It is stored in different body structures and then metabolized by cells.

2. A 45-year-old man with type 1 diabetes is found unresponsive. Which of the following questions is MOST important to ask his wife?
- A. “Did he take his insulin today?”
  - B. “How long has he been a diabetic?”
  - C. “Has he seen his physician recently?”
  - D. “What kind of insulin does he take?”

## Answer: A

**Rationale:** All of these questions are important to ask the spouse of an unconscious diabetic. However, it is critical to ask if the patient took his insulin. This will help you differentiate hypoglycemic crisis from hyperglycemic crisis. For example, if the patient took his insulin and did not eat, or accidentally took too much insulin, you should suspect hypoglycemic crisis. If the patient did not take his insulin, you should suspect hyperglycemic crisis.

2. A 45-year-old man with type 1 diabetes is found unresponsive. Which of the following questions is MOST important to ask his wife?

A. “Did he take his insulin today?”

**Rationale:** Correct answer

B. “How long has he been a diabetic?”

**Rationale:** This is useful SAMPLE history information.



2. A 45-year-old man with type 1 diabetes is found unresponsive. Which of the following questions is MOST important to ask his wife?

C. “Has he seen his physician recently?”

**Rationale:** This is also important SAMPLE history information.

D. “What kind of insulin does he take?”

**Rationale:** This provides important information about a patient’s medications.

3. A diabetic patient presents with a blood glucose level of 310 mg/dL and severe dehydration. The patient's dehydration is the result of:
- A. excretion of glucose and water from the kidneys.
  - B. a deficiency of insulin that causes internal fluid loss.
  - C. an infection that often accompanies hyperglycemia.
  - D. an inability to produce energy because of insulin depletion.

**Answer: A**

**Rationale:** In severe hyperglycemia, the kidneys excrete excess glucose from the body. This process requires a large amount of water to accomplish; therefore, water is excreted with the glucose, resulting in dehydration.

3. A diabetic patient presents with a blood glucose level of 310 mg/dL and severe dehydration. The patient's dehydration is the result of:

A. excretion of glucose and water from the kidneys.

**Rationale:** Correct answer

3. A diabetic patient presents with a blood glucose level of 310 mg/dL and severe dehydration. The patient's dehydration is the result of:

B. a deficiency of insulin that causes internal fluid loss.

**Rationale:** A lack of insulin will cause the glucose level to rise, and it is the glucose that causes the fluid loss.

3. A diabetic patient presents with a blood glucose level of 310 mg/dL and severe dehydration. The patient's dehydration is the result of:

C. an infection that often accompanies hyperglycemia.

**Rationale:** An infection is an invasion of the body by an organism—glucose is not a foreign element.

3. A diabetic patient presents with a blood glucose level of 310 mg/dL and severe dehydration. The patient's dehydration is the result of:

D. an inability to produce energy because of insulin depletion.

**Rationale:** A body's inability to metabolize glucose does not cause a fever.

4. Which combination of factors would MOST likely cause a hypoglycemic crisis in a diabetic patient?

- A. Eating a meal and taking insulin
- B. Skipping a meal and taking insulin
- C. Eating a meal and not taking insulin
- D. Skipping a meal and not taking insulin



**Answer: B**

**Rationale:** The combination that would most likely cause a hypoglycemic crisis is skipping a meal and taking insulin. The patient will use up all available glucose in the bloodstream and become hypoglycemic. Left untreated, hypoglycemic crisis may cause permanent brain damage or even death.

4. Which combination of factors would MOST likely cause a hypoglycemic crisis in a diabetic patient?

A. Eating a meal and taking insulin

**Rationale:** This process will maintain the body's glucose level.

B. Skipping a meal and taking insulin

**Rationale:** Correct answer

4. Which combination of factors would MOST likely cause a hypoglycemic crisis in a diabetic patient?

C. Eating a meal and not taking insulin

**Rationale:** Eating will cause the glucose levels to rise.

D. Skipping a meal and not taking insulin

**Rationale:** Glucose levels should remain the same but may be influenced by the patient's metabolic rate or physical activities. This does not cause a hypoglycemic crisis.

5. A 19-year-old diabetic male was found unresponsive on the couch by his roommate. After confirming that the patient is unresponsive, you should:
- A. suction his oropharynx.
  - B. manually open his airway.
  - C. administer high-flow oxygen.
  - D. begin assisting his ventilations.

**Answer: B**

**Rationale:** Immediately after determining that a patient is unresponsive, your first action should be to manually open his or her airway (eg, head tilt–chin lift, jaw-thrust). Use suction as needed to clear secretions from the patient’s mouth. After manually opening the airway and ensuring it is clear of obstructions, insert an airway adjunct and then assess the patient’s breathing.

5. A 19-year-old diabetic male was found unresponsive on the couch by his roommate. After confirming that the patient is unresponsive, you should:

A. suction his oropharynx.

**Rationale:** After opening the airway, suction as needed to remove any secretions.

B. manually open his airway.

**Rationale:** Correct answer

5. A 19-year-old diabetic male was found unresponsive on the couch by his roommate. After confirming that the patient is unresponsive, you should:

C. administer high-flow oxygen.

**Rationale:** After opening the airway, provide oxygen if the patient's breathing is adequate.

D. begin assisting his ventilations.

**Rationale:** After opening the airway, assist with ventilations if the patient's breathing is inadequate.

6. What breathing pattern would you MOST likely encounter in a patient with diabetic ketoacidosis (DKA)?

- A. Slow and shallow
- B. Shallow and irregular
- C. Rapid and deep
- D. Slow and irregular



**Answer: C**

**Rationale:** Kussmaul respirations—a rapid and deep breathing pattern seen in patients with DKA—indicates that the body is attempting to eliminate ketones via the respiratory system. A fruity or acetone breath odor is usually present in patients with Kussmaul respirations.

6. What breathing pattern would you MOST likely encounter in a patient with diabetic ketoacidosis (DKA)?

A. Slow and shallow

**Rationale:** Agonal respirations are seen with cerebral anoxia and may have an occasional gasp.

B. Shallow and irregular

**Rationale:** Agonal respirations are seen with cerebral anoxia and may have an occasional gasp.

6. What breathing pattern would you MOST likely encounter in a patient with diabetic ketoacidosis (DKA)?

C. Rapid and deep

**Rationale:** Correct answer

D. Slow and irregular

**Rationale:** Slow and irregular respiration results from increased intracranial pressure and can also have periods of apnea.

7. A woman called EMS because her 12-year-old son, who had been experiencing excessive urination, thirst, and hunger for the past 36 hours, has an altered mental status and is breathing fast. You should be MOST suspicious for:

- A. low blood sugar.
- B. hypoglycemia.
- C. hypoglycemic crisis.
- D. hyperglycemic crisis.

**Answer: D**

**Rationale:** The child is experiencing a hyperglycemic crisis secondary to severe hyperglycemia. Hyperglycemic crisis is characterized by a slow onset; excessive urination (polyuria), thirst (polydipsia), and hunger (polyphagia). Other signs include rapid, deep breathing with a fruity or acetone breath odor (Kussmaul respirations); a rapid, thready pulse; and an altered mental status.

7. A woman called EMS because her 12-year-old son, who had been experiencing excessive urination, thirst, and hunger for the past 36 hours, has an altered mental status and is breathing fast. You should be MOST suspicious for:

A. low blood sugar.

**Rationale:** Low blood sugar does not cause frequent urination.

B. hypoglycemia.

**Rationale:** Hypoglycemia is low blood sugar.

7. A woman called EMS because her 12-year-old son, who had been experiencing excessive urination, thirst, and hunger for the past 36 hours, has an altered mental status and is breathing fast. You should be MOST suspicious for:

C. hypoglycemic crisis.

**Rationale:** Hypoglycemic crisis does not produce any of these symptoms.

D. hyperglycemic crisis.

**Rationale:** Correct answer

8. If the cells do not receive glucose, they will begin to metabolize:

A. fat.

B. acid.

C. sugar.

D. ketones.



**Answer: A**

**Rationale:** If the body's cells do not receive glucose, they will begin to metabolize the next most readily available substance—fat. Fat metabolism results in the production of ketoacids, which are released into the bloodstream (hence the term “ketoacidosis”).

8. If the cells do not receive glucose, they will begin to metabolize:

A. fat.

**Rationale:** Correct answer

B. acid.

**Rationale:** Fatty acids are a by-product (waste product) of the metabolism of fat.

8. If the cells do not receive glucose, they will begin to metabolize:

C. sugar.

**Rationale:** Sugar is glucose.

D. ketones.

**Rationale:** Ketones are a by-product (waste product) of the metabolism of fat.

9. In contrast to a hyperglycemic crisis, a hypoglycemic crisis:
- A. rarely presents with seizures.
  - B. presents over a period of hours to days.
  - C. should not routinely be treated with glucose.
  - D. usually responds immediately after treatment.

**Answer: D**

**Rationale:** Hypoglycemic crisis usually responds immediately following treatment with glucose. Patients with hyperglycemic crisis generally respond to treatment gradually, within 6–12 hours following the appropriate treatment. Seizures can occur with both hyperglycemic crisis and hypoglycemic crisis, but are more common in patients with hypoglycemic crisis.

9. In contrast to a hyperglycemic crisis, a hypoglycemic crisis:

A. rarely presents with seizures.

**Rationale:** Hypoglycemic crisis can produce seizures.

B. presents over a period of hours to days.

**Rationale:** Hypoglycemic crisis has a rapid onset of symptoms (possible minutes).

9. In contrast to a hyperglycemic crisis, a hypoglycemic crisis:

C. should not routinely be treated with glucose.

**Rationale:** Hypoglycemic crisis is always treated with glucose.

D. usually responds immediately after treatment.

**Rationale:** Correct answer

10. Patients with diabetic ketoacidosis experience polydipsia because:

- A. they are dehydrated secondary to excessive urination.
- B. the cells of the body are starved due to a lack of glucose.
- C. fatty acids are being metabolized at the cellular level.
- D. hyperglycemia usually causes severe internal water loss.



**Answer: A**

**Rationale:** Severe hyperglycemia—which leads to diabetic ketoacidosis—causes the body to excrete large amounts of glucose and water. As a result, the patient becomes severely dehydrated, which leads to excessive thirst (polydipsia).

10. Patients with diabetic ketoacidosis experience polydipsia because:

A. they are dehydrated secondary to excessive urination.

**Rationale:** Correct answer

B. the cells of the body are starved due to a lack of glucose.

**Rationale:** True, but the lack of glucose does not cause thirst.

10. Patients with diabetic ketoacidosis experience polydipsia because:

C. fatty acids are being metabolized at the cellular level.

**Rationale:** Fats are metabolized by the cells instead of glucose, which produces acids and ketones—thus the term ketoacidosis.

D. hyperglycemia usually causes severe internal water loss.

**Rationale:** This is false. It causes water loss due to glucose being excreted (externally) in the urine solution.

11. When dealing with hematologic disorders, the EMT must be familiar with the composition of blood. Which of the following is considered a hematologic disease?

- A. Sickle cell disease
- B. Hemophilia
- C. Lou Gehrig's disease
- D. Both A and B

**Answer: D**

**Rationale:** Hematology is the study and prevention of blood-related diseases, such as sickle cell disease and hemophilia.

11. When dealing with hematologic disorders, the EMT must be familiar with the composition of blood. Which of the following is considered a hematologic disease?

A. Sickle cell disease

**Rationale:** Sickle cell disease is a hematologic disorder affecting the red blood cells.

B. Hemophilia

**Rationale:** Hemophilia is a hematologic disorder affecting the blood's ability to clot.

11. When dealing with hematologic disorders, the EMT must be familiar with the composition of blood. Which of the following is considered a hematologic disease?

C. Lou Gehrig's disease

**Rationale:** Lou Gehrig's disease affects the nerve cells in the brain and spinal cord.

D. Both A and B

**Rationale:** Correct answer

12. What are the two main components of blood?

A. Erythrocytes and hemoglobin

B. Cells and plasma

C. Leukocytes and white blood cells

D. Platelets and neutrophils



**Answer: B**

**Rationale:** The blood is made up of two main components: cells and plasma. The cells in the blood include red blood cells (erythrocytes), white blood cells (leukocytes), and platelets. These cells are suspended in a straw-colored fluid called plasma.

12. What are the two main components of blood?

A. Erythrocytes and hemoglobin

**Rationale:** Erythrocytes are a type of blood cell, and hemoglobin is a chemical that is contained within blood cells.

B. Cells and plasma

**Rationale:** Correct answer

12. What are the two main components of blood?

C. Leukocytes and white blood cells

**Rationale:** *Leukocytes are white blood cells, which are a type of blood cell.*

D. Platelets and neutrophils

**Rationale:** *Platelets are a type of blood cell, and neutrophils are a type of white blood cell.*

13. The assessment of a patient with a hematologic disorder is the same as it is with all other patients an EMT will encounter. The EMT must perform a scene size-up, primary assessment, history taking, secondary assessment, and reassessment. In addition to obtaining a SAMPLE history, EMTs should ask which of the following questions?
- A. Have you had a crisis before?
  - B. When was the last time you had a crisis?
  - C. How did your crisis resolve?
  - D. All of the above

**Answer: D**

**Rationale:** SAMPLE is the mnemonic used in taking the history of all patients. In addition to asking the SAMPLE, EMTs should also ask about past crises.

13. The assessment of a patient with a hematologic disorder is the same as it is with all other patients an EMT will encounter. The EMT must perform a scene size-up, primary assessment, history taking, secondary assessment, and reassessment. In addition to obtaining a SAMPLE history, EMTs should ask which of the following questions?

A. Have you had a crisis before?

**Rationale:** You should ask the patient this question.

B. When was the last time you had a crisis?

**Rationale:** You should ask the patient this question.

13. The assessment of a patient with a hematologic disorder is the same as it is with all other patients an EMT will encounter. The EMT must perform a scene size-up, primary assessment, history taking, secondary assessment, and reassessment. In addition to obtaining a SAMPLE history, EMTs should ask which of the following questions?

C. How did your crisis resolve?

**Rationale:** You should ask the patient this question.

D. All of the above

**Rationale:** Correct answer

14. Which one of the following is NOT an appropriate treatment for EMTs to provide to a patient who has a hematologic disorder?
- A. Analgesics for pain
  - B. Support of symptoms
  - C. High-flow oxygen therapy at 12 to 15 L/min
  - D. Rapid transport



**Answer: A**

**Rationale:** Although analgesics would benefit a patient suffering from a hematologic disorder, the administration of such medications is not in the scope of practice for the EMT. ALS providers would have to be present to provide this emergency care.

14. Which one of the following is NOT an appropriate treatment for EMTs to provide to a patient who has a hematologic disorder?

A. Analgesics for pain

**Rationale:** Correct answer

B. Support of symptoms

**Rationale:** This is an appropriate treatment.

14. Which one of the following is NOT an appropriate treatment for EMTs to provide to a patient who has a hematologic disorder?

C. High-flow oxygen therapy at 12 to 15 L/min

**Rationale:** This is an appropriate treatment.

D. Rapid transport

**Rationale:** This is an appropriate treatment.