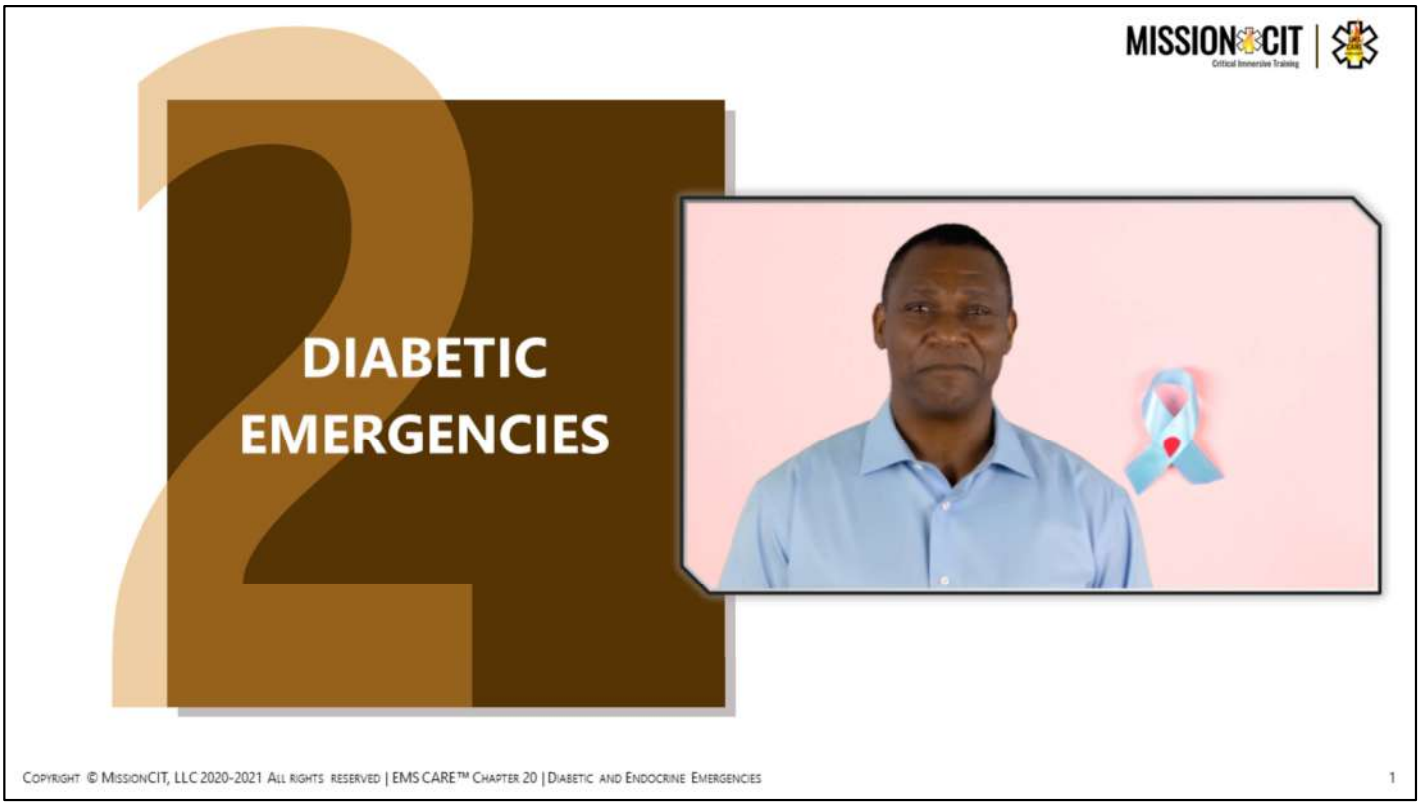
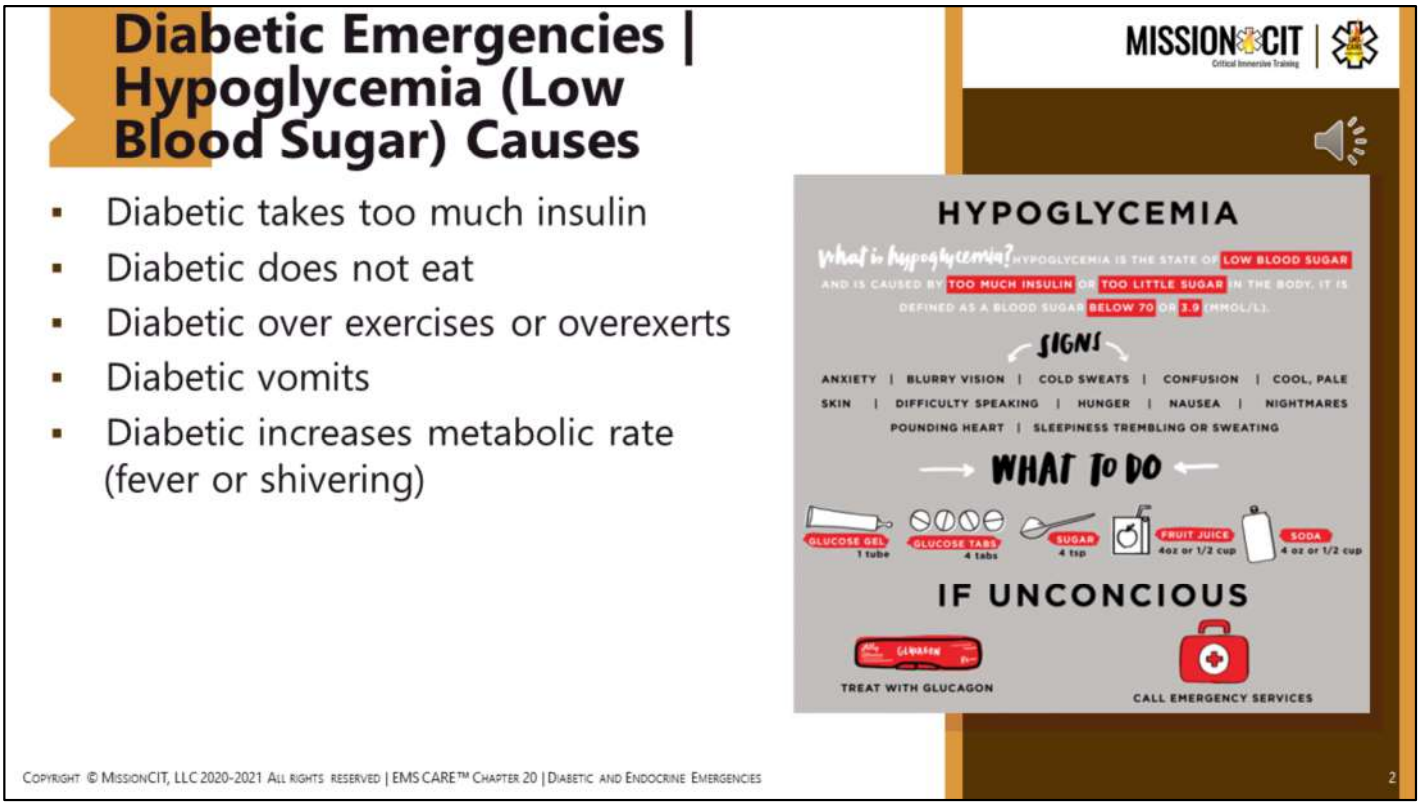


Diabetes symptoms can sometimes turn into an emergency quite quickly and suddenly. It can cause serious complications, and some of these can be life-threatening. In this lesson, we will review the causes, symptoms, and complications of Diabetic emergencies.



We will first review Hypoglycemia, which occurs when the bloodstream does not have enough sugar. And then discuss hyperglycemia, which occurs when the bloodstream has an oversupply of sugar. Starting with hypoglycemia or low blood sugar, some likely causes are when the diabetic:

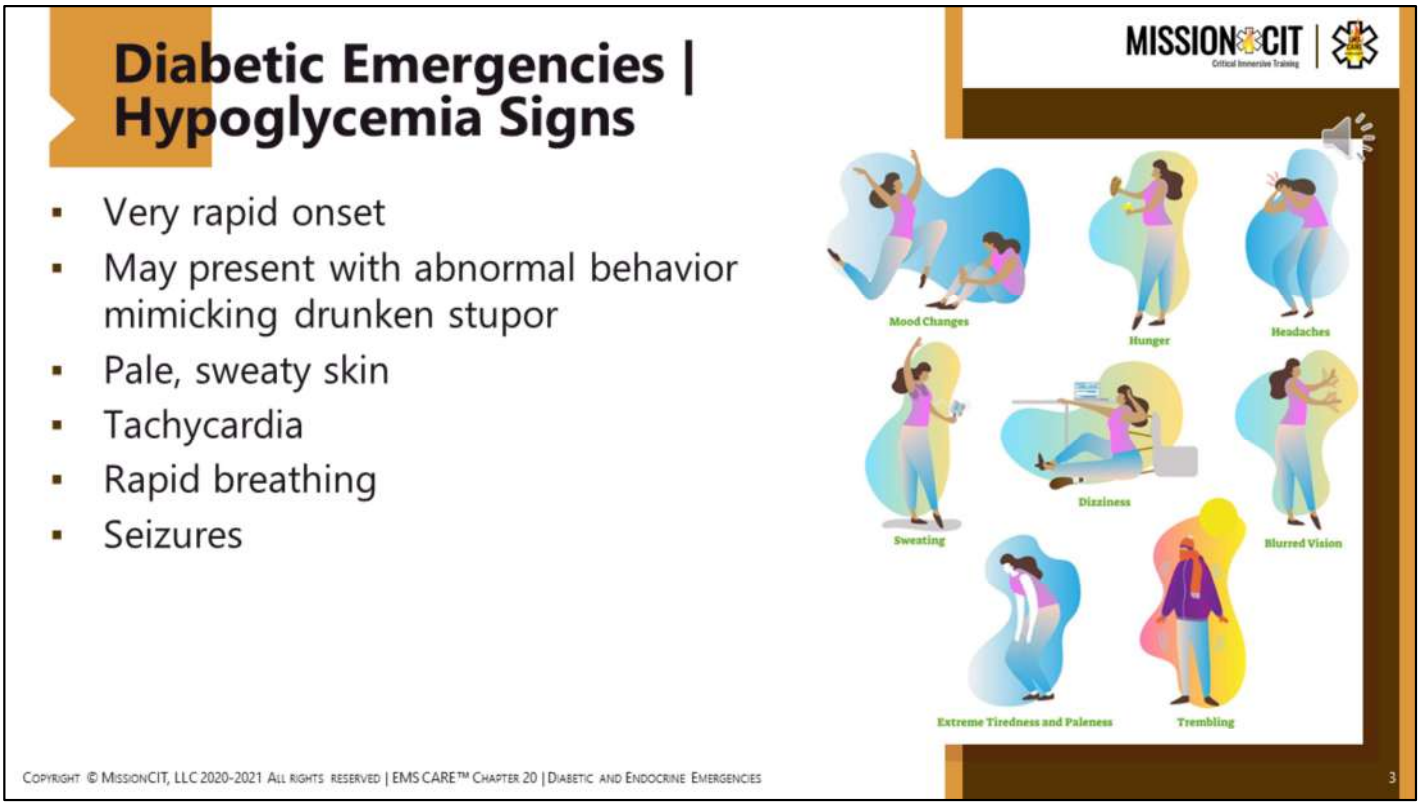
1. Takes too much insulin
2. Does not eat
3. Over exercises or overexerts
4. Vomits, or
5. Experiences increased metabolic rate (e.g. fever or shivering)

Other causes include drinking alcohol, long gaps between meals, or eating the wrong food such as junk food. This can produce gastric trouble to start with, or in rare unfortunate cases, it can lead to hormonal imbalance and malfunctioning of the kidney and liver. Sometimes hypoglycemia symptoms occur after certain meals high in sugar because the body produces more insulin than it needs.

And, Hypoglycemia may occur in patients without diabetes, however, it is much less common. Causes may be similar, or be symptomatic of serious diseases.

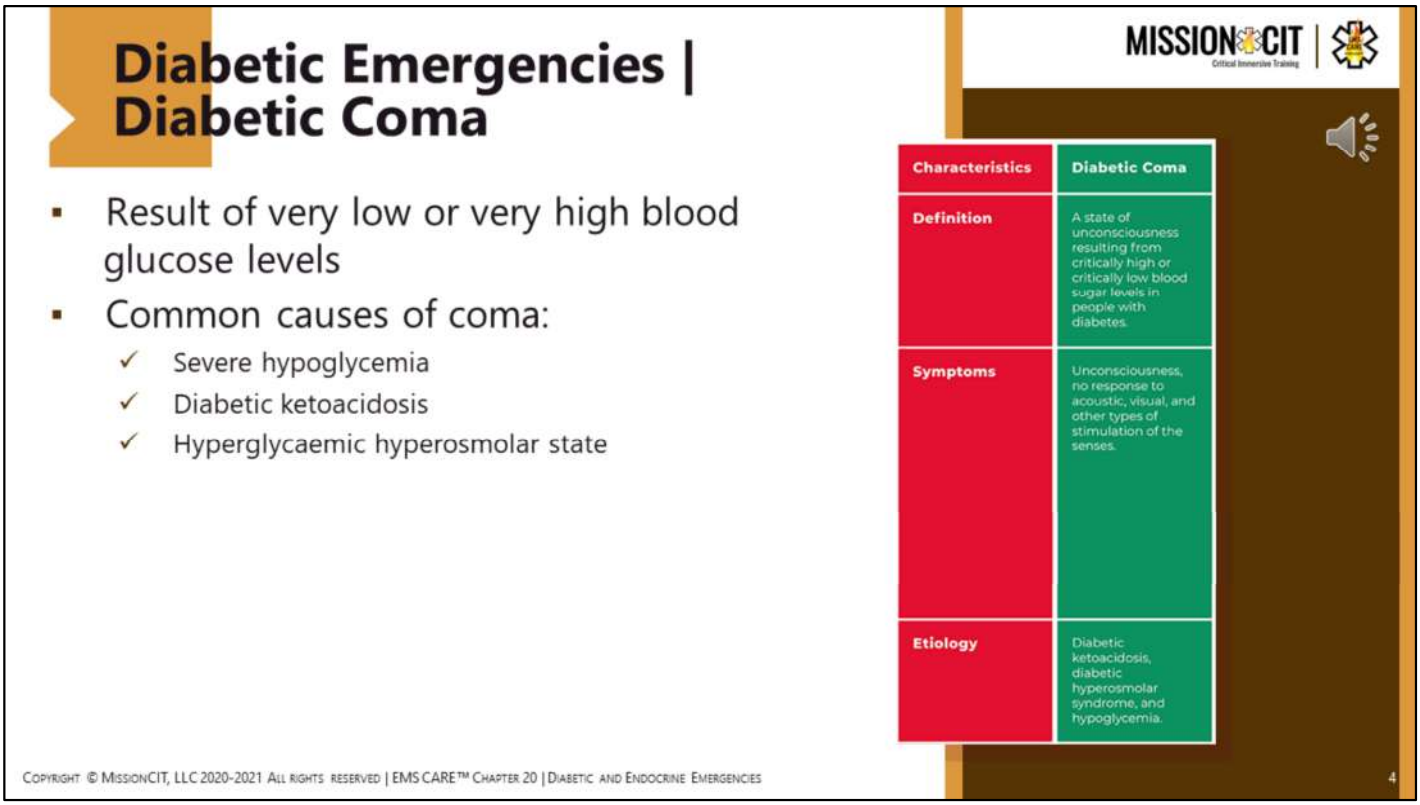
We have attached a paper from the NIH with an in-depth review of hypoglycemia. If your

community has a high incidence of diabetic emergencies, this is worthwhile reading.



Symptoms of low blood sugar, usually have a very rapid onset. Symptoms may initially display as an abnormal behavior mimicking a drunken stupor. The patient may in addition, exhibit one or more of the following 10 symptoms:

1. Nausea
2. Pale appearance, sweaty skin or suddenly sweating profusely for no apparent reason
3. Unexplained feeling of weakness
4. Headache
5. Anxiety, nervousness, and feeling of confusion/feeling dis-oriented
6. Dizziness
7. Trembling
8. Tachycardia
9. Rapid breathing, or
10. Seizures

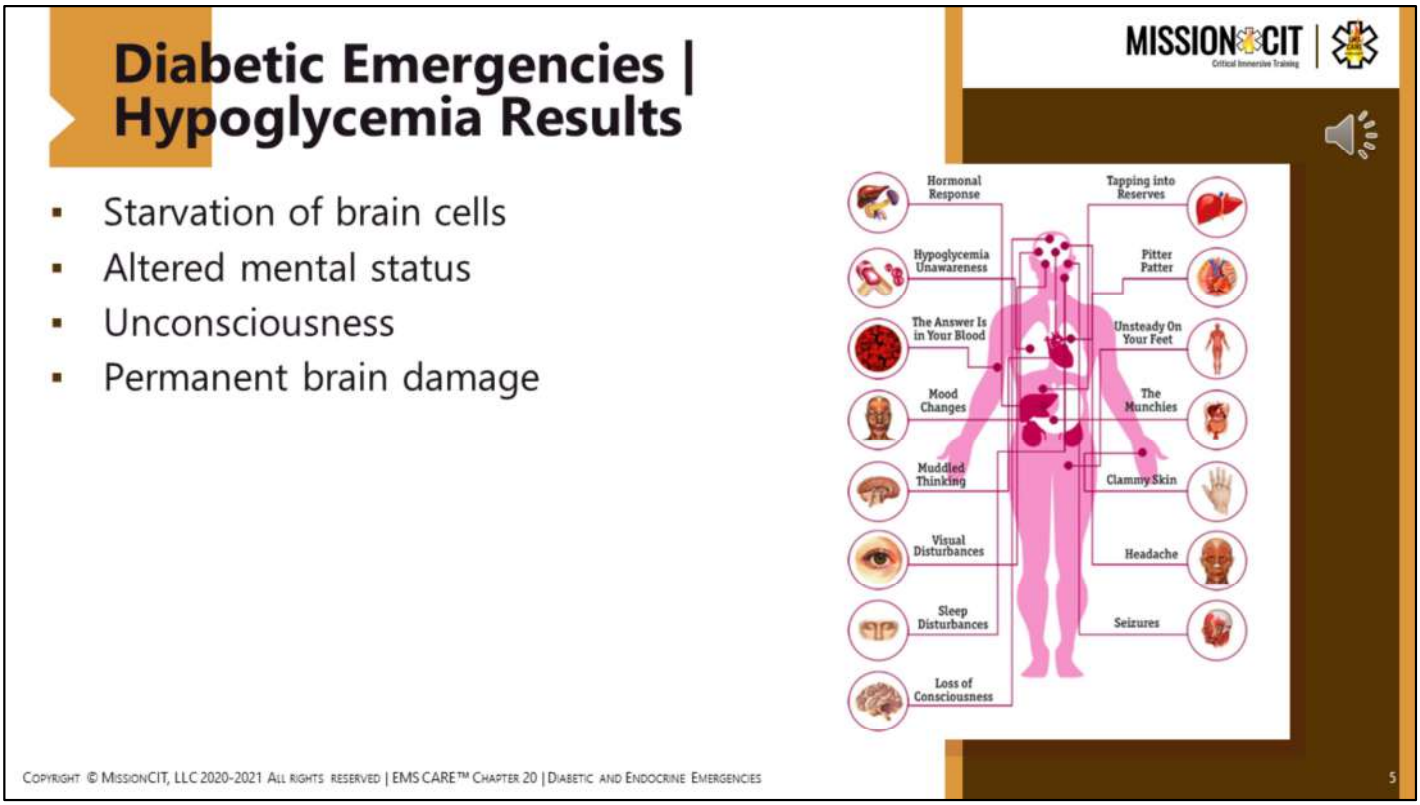


Coma is relatively rare in diagnosed diabetes but it is very important to be aware of the situations that increase the risk of coma. The main causes of coma occurring in people with diabetes are as a result of very low or very high blood glucose levels.

The three most common causes of coma in people with diabetes are:

- Severe hypoglycemia
- Diabetic ketoacidosis
- Hyperglycaemic hyperosmolar state

Each type of coma can be brought on by excessive food intake, failure to take the proper doses of medication, trauma, illegal drug use, alcohol consumption or infection. The coma is reversible if treated immediately, but if left untreated they may receive permanent brain damage or potentially die.



So, in the last lesson, we advised that if you were unsure of what type of Diabetic emergency you faced, err on the side of Hypoglycemia. Here's why: If ignored, blood sugar concentrations can drop to dangerous levels that can cause accidents, coma, even death. Other results may include:

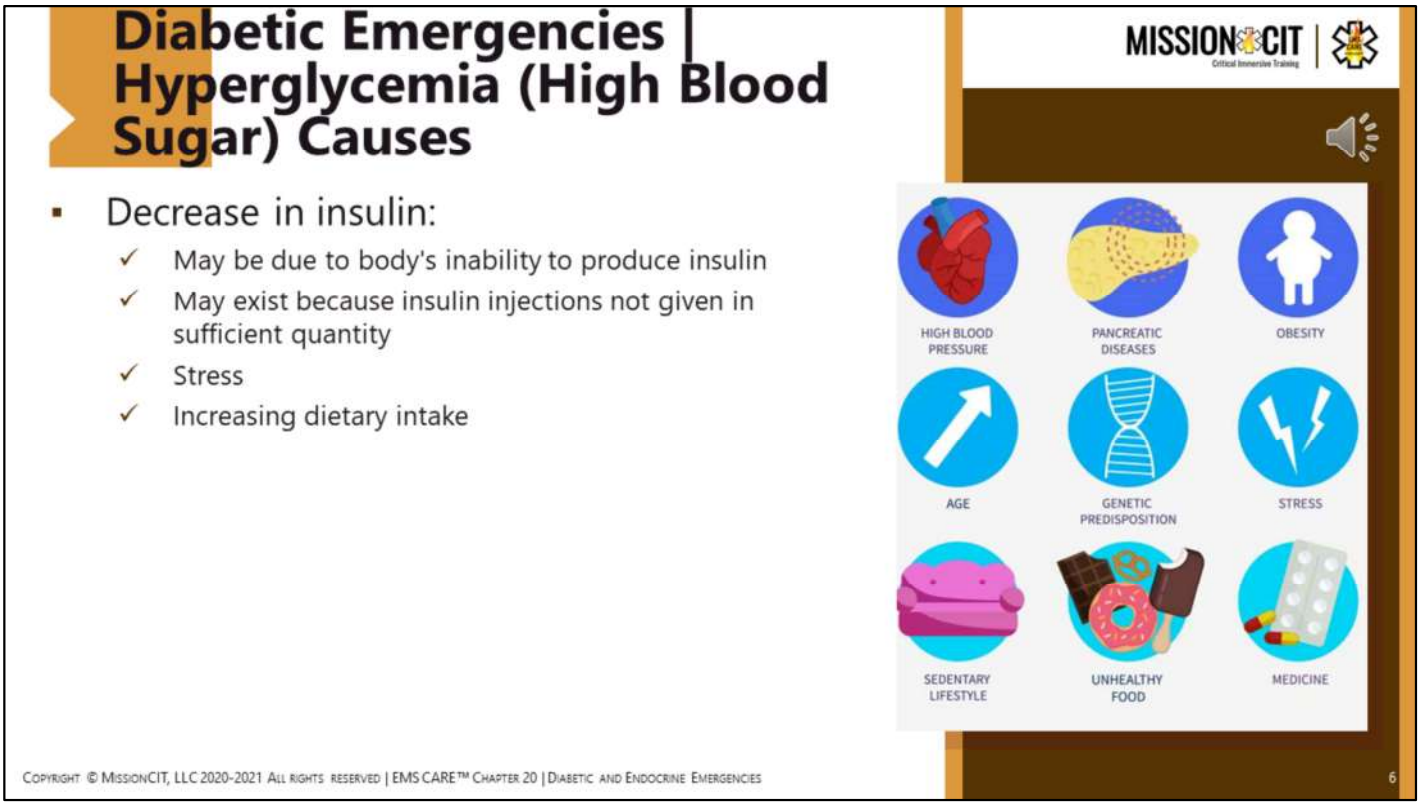
- Starvation of brain cells
- An Altered mental status
- Unconsciousness, or
- Permanent brain damage

Hypoglycemia can also contribute to the following:

- Dizziness and weakness
- Falls
- Injuries
- Motor vehicle accidents
- Difficulty speaking or slurred speech
- Blurry or double vision

- Clumsiness or jerky movements
- Some of the complications of diabetes can lead to episodes of syncope, and
- The Greater risk of dementia in older adults

Clearly something to consider when responding to a motor vehicle accident, as you assess the patient.



Now, moving on to Hyperglycemia or high blood sugar. People with type 2 diabetes don't always realize that their blood sugar is too high. The condition can develop gradually over many years without causing any noticeable symptoms.

Several factors can contribute to hyperglycemia in people with diabetes, including food and physical activity choices, illness, nondiabetic medications, or skipping or not taking enough glucose-lowering medication. Myocardial infarction is a cardiovascular disease, which is the most important cause of morbidity and mortality in patients with type 2 diabetes.

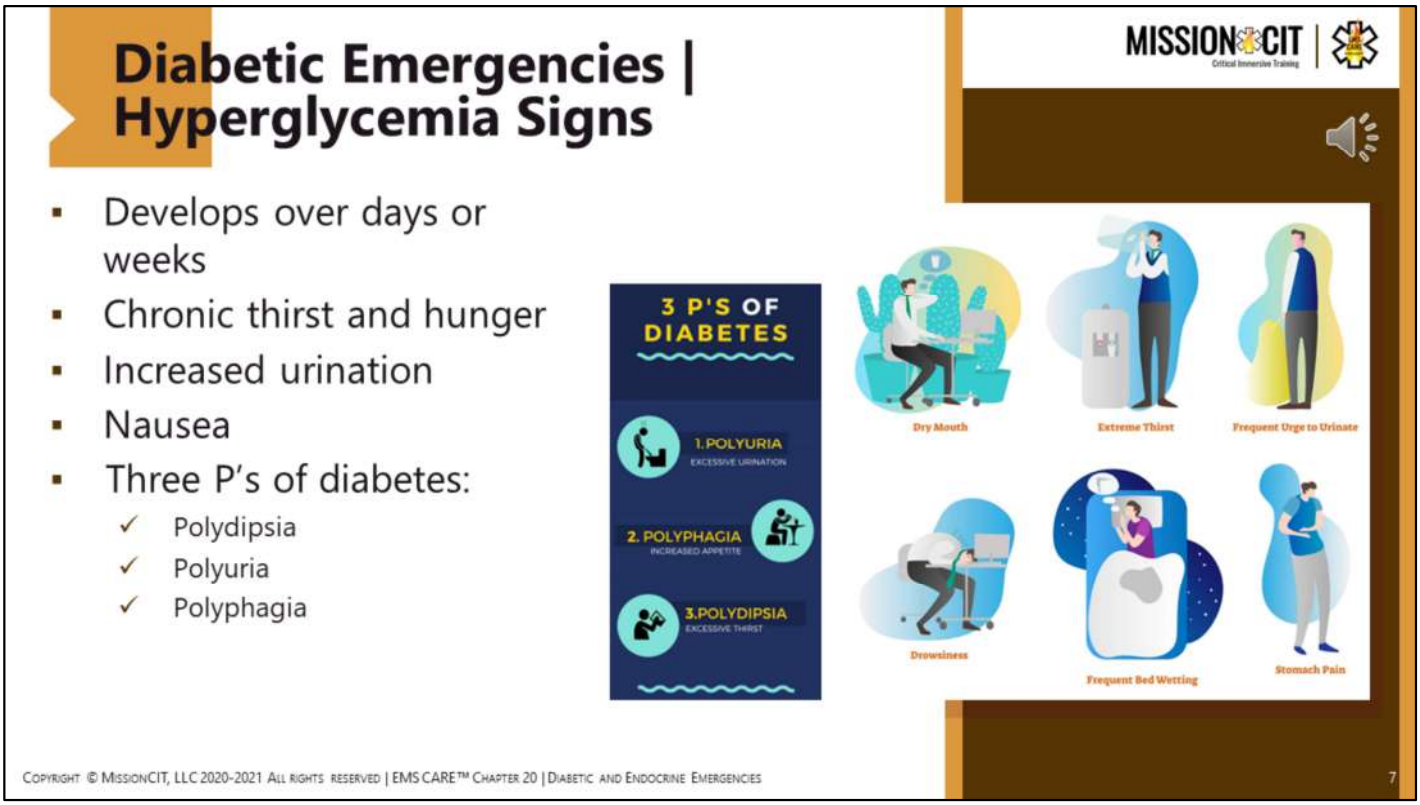
It's important to treat hyperglycemia, because if left untreated, hyperglycemia can become severe and lead to serious complications requiring emergency care, such as a diabetic coma. In the long term, persistent hyperglycemia, even if not severe, can lead to complications affecting your eyes, kidneys, nerves, and heart.

Some of the causes related to a decrease in insulin may include:

1. The body's inability to produce insulin, or
2. Insulin injections that are not given in sufficient quantity, or
3. Stress, or
4. Increasing dietary consumption

We are experiencing more situations where a patient is reducing insulin intake due to

medication costs.



So, Hyperglycemia doesn't cause symptoms until glucose values are significantly elevated — usually above 180 to 200 milligrams per deciliter; or 10 to 11 millimoles per liter. Symptoms of hyperglycemia develop slowly over several days or weeks. The longer blood sugar levels stay high, the more serious the symptoms become. However, some people who've had type 2 diabetes for a long time may not show any symptoms despite elevated blood sugar levels.

Early signs and symptoms of hyperglycemia can help treat the condition promptly. These include: Frequent urination, Increased thirst, Blurred vision, Fatigue, and Headache.

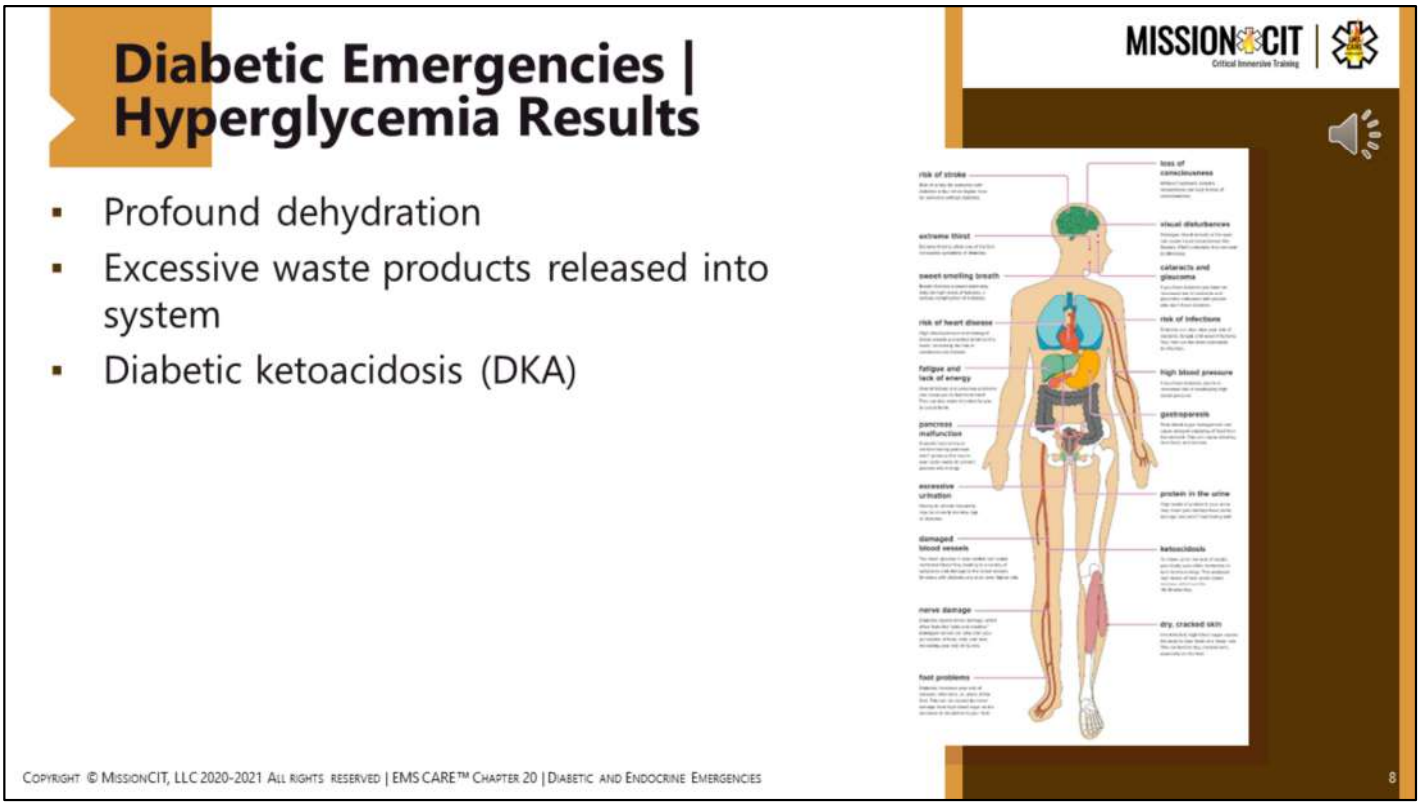
If hyperglycemia goes untreated, it can cause toxic acids (ketones) to build up in your blood and urine (ketoacidosis). Later signs and symptoms of untreated type 2 diabetes may include:

- Fruity-smelling breath
- Dehydration, poor skin tugor, pale, warm and dry
- Nausea and vomiting
- Shortness of breath
- Dry mouth
- Weakness
- Confusion

- Coma, and
- Abdominal pain

The three P's of diabetes often, but not always, occur together. They are three of the most common diabetic symptoms. Simply defined, the three P's are:

- Polydipsia: An increase in thirst
- Polyuria: Frequent urination
- Polyphagia: A rise in appetite



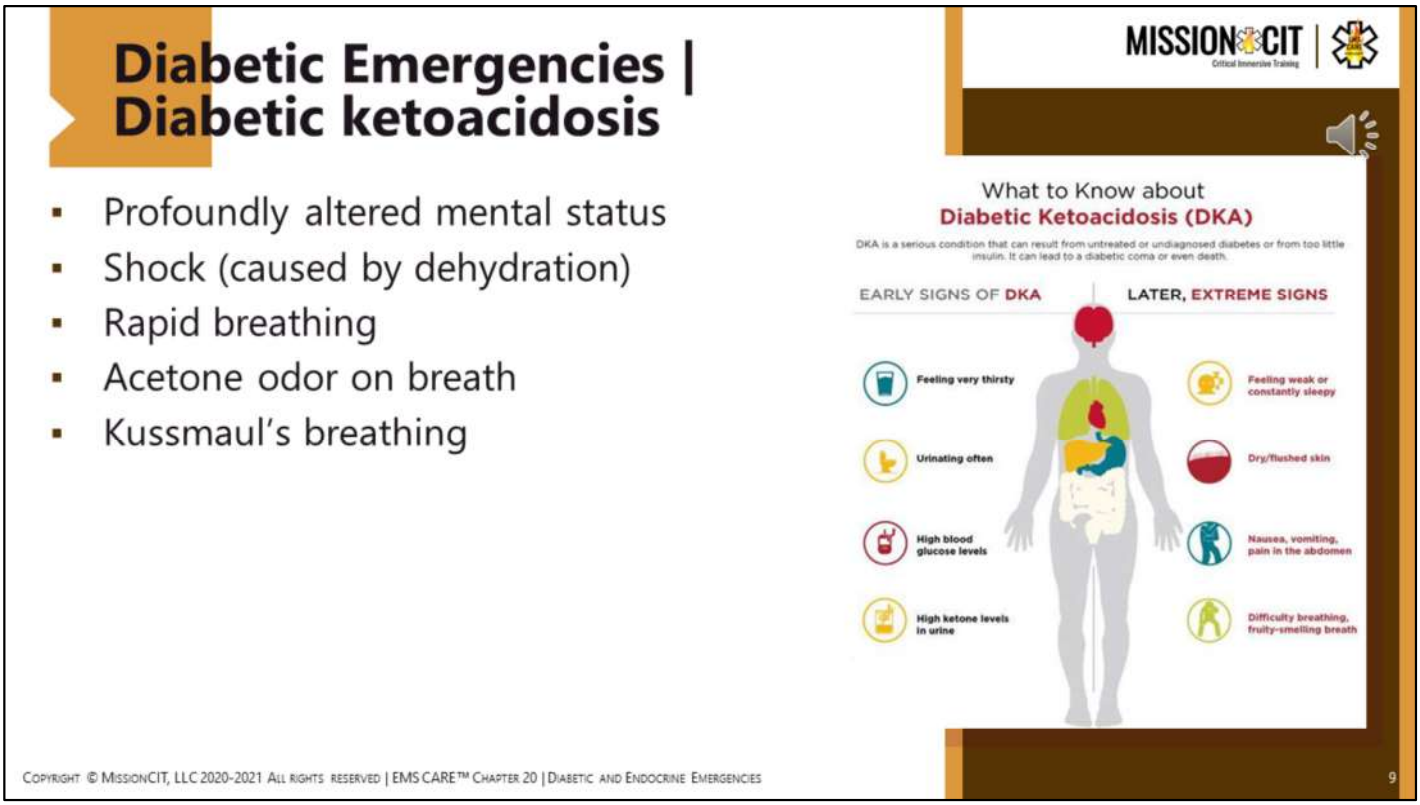
Hyperglycemia may result in:

1. Profound dehydration
2. Excessive waste products released into the system, and
3. Diabetic ketoacidosis (DKA)

Diabetes can be effectively managed when caught early. However, when left untreated, it can lead to potential complications that include heart disease, stroke, kidney damage, and nerve damage. Some of the other complications may include:

- Loss of consciousness and altered mental status
- Risk of infections, especially in the feet
- Dry, cracked skin
- Excessive urination, and
- Cataracts and glaucoma

The chart on this page shows many of the diabetic complications that may occur.



Diabetic ketoacidosis is a serious complication of diabetes that occurs when the body produces high levels of blood acids called ketones. This process produces a buildup of acids in the bloodstream called ketones, eventually leading to diabetic ketoacidosis if untreated.

Diabetic ketoacidosis may result in:

1. Profoundly altered mental status
2. Shock caused by dehydration
3. Rapid breathing
4. Acetone odor on breath, and
5. Kussmaul's breathing, an abnormal deep, rapid, labored breathing occurs as an involuntary response to severe acidosis

That's it for this lesson. Missah will next discuss how to assess a patient with diabetic symptoms.