

# Treat Diabetes

## Chapter 4

# Low Blood Sugar (Hypoglycemia)

### You Will Learn About:

1. Low blood sugar and review signs and symptoms
2. Risk factors and treatment for low blood sugar
3. How to prevent low blood sugar
4. The impact of low blood sugar and driving
5. Diabetes medical identification jewelry

## 1. Low Blood Sugar and the Signs and Symptoms

### What is low blood sugar?

Low blood sugar can be dangerous. It means there is not enough sugar in your blood. Your brain and body need sugar to function. Low blood sugar is also known as hypoglycemia.

**Low blood sugar happens when your blood sugar drops below 4 mmol/L. You may have low blood sugar symptoms at different levels. For example, you may have low blood sugar symptoms at 6 mmol/L.**

If your blood sugar gets too low you can become disoriented, confused, and you may even lose consciousness (go into a coma). This is called severe hypoglycemia. Severe hypoglycemia happens when your blood sugar is so low you can't treat it yourself with fast acting carbohydrates or glucagon (a medicine sometimes prescribed by doctors for people who are prone to very low blood sugar).

Teach your family members and friends how to help you when you can no longer treat your low blood sugar by yourself. They need to know this is a medical emergency and you need help right away.

### What are the signs and symptoms of low blood sugar?

People have different signs and symptoms of low blood sugar. You may have any number of the symptoms below. Common signs and symptoms are:

- Trembling or shaking
- Hard time thinking
- Headache
- Dizzy
- Feeling tired (drowsy)

- Changes to your vision
- Anxiety (nervous and fearful)
- Tingling in your face or hands
- Nausea (upset stomach)
- Sweating
- Hunger
- Faster heart beat than usual (palpitations)
- Difficulty speaking
- Disoriented (confused)
- Seizures or loss of consciousness (with severe hypoglycemia)

Some people have low blood sugar levels and do not have any of the signs or symptoms listed. In this case, it is crucial that you check your blood sugar often to see if your blood sugar is low (especially before driving a car, motorcycle or boat). Check your blood sugar often to be sure. This will help you know when your blood sugar is low.

#### **What is the impact of low blood sugar?**

Having low blood sugar is a risk to your safety and health.

- Do not use machinery or drive a vehicle if your blood sugar is low. You are at a greater risk of an accident if your blood sugar is low
- If you have an episode of low blood sugar this puts you at risk of not being able to notice the next time your blood sugar goes low

## 2. Risk Factors and Treatment for Low Blood Sugar

### What are the risk factors for low blood sugar?

You are at risk for low blood sugar if you:

- Are taking insulin
- Are taking a medicine from the Secretagogue class of medicines like:
  - Diamicon (Gliclazide)
  - Amaryl (Glimepiride)
  - Glyburide (Diabeta)
  - Repaglinide (Gluconorm)

Read Chapter 7 of this section on Diabetes Medicines to learn more.

- Start a new exercise program and are prescribed insulin or a medicine from the Secretagogue class of medicines
- Have had episodes of low blood sugar in the past
- Have an A1c of less than 6 percent (%)
- Do not get any of the signs or symptoms of low blood sugar

### How is low blood sugar treated?

There are two ways to know you have low blood sugar:

1. You have any signs or symptoms of low blood sugar
2. Your glucometer reading is less than 4.0 mmol/L

If you have low blood sugar:

1. Act quickly. Do not wait

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2. Stop what you are doing and sit down. Test your blood sugar with your glucometer if you have not already done so
3. Eat or drink 15 grams of fast acting carbohydrate. Fast acting carbohydrates raise your blood sugar quickly

Examples of fast acting carbohydrates are:

- 15 grams of sugar tablets
  - $\frac{3}{4}$  cup (175 ml) of juice or
  - $\frac{3}{4}$  cup (175 ml) regular pop (soft drink)
  - 3 teaspoons or 3 packets of sugar dissolved in water
  - 6 LifeSavers
  - 1 tablespoon (15 ml) of honey
4. Wait 15 minutes
  5. Test your blood sugar again
    - If your blood sugar is still below 4 mmol/L take another 15 grams of fast acting carbohydrate
    - Wait another 15 minutes and check your blood sugar again
    - Repeat this step until your blood sugar is higher than 4 mmol/L
  6. When your blood sugar is above 4 mmol/L, eat your usual meal
    - Follow your regular meal schedule
    - Have a snack if your meal is more than 1 hour away. This snack should have a slower acting carbohydrate and protein like a slice of wholegrain bread with reduced fat cheese. Slower acting carbohydrates raise your blood sugar slowly over a period of time. This will prevent another episode of low blood sugar

**How is severe low blood sugar (severe hypoglycemia) treated?**

If you had a severe episode of hypoglycemia in the past, your doctor may tell you to treat any future episodes with greater amounts of fast acting carbohydrate or glucagon (a medicine prescribed by your doctor).

If your blood sugar goes too low you will likely need help. It is crucial that you let your family and friends know how to help you when you can no longer help yourself (for example, you become disoriented, have a seizure or lose consciousness). This is a medical emergency. Wear jewelry that lets people know you have diabetes. A medical alert bracelet is one type of this jewelry.

	<b>Morning</b>	<b>Afternoon</b>	<b>Evening</b>
When did I take my diabetes medicine today?			
Am I taking a new medicine?  Or is this a different amount of the same medicine?			
How long did I exercise today?  What time did I exercise?			
What did I eat and drink today?  What time did I eat?			

#### How do you learn from a low blood sugar episode?

Reflect on your low blood sugar episode to help prevent another episode. Use the reflection chart below to answer questions about your low blood sugar episode.

Take this chart to your doctor, pharmacist or diabetes educator. They can help you make changes to prevent low blood sugar. This can include changes to your medicines, food or exercise.

#### 3. How to Prevent Low Blood Sugar

There are many ways to prevent low blood sugar. Talk to your doctor, pharmacist or diabetes educator to learn:

- The best amount of diabetes medicine for you
- How to time your diabetes medicine with your food
- When your diabetes medicine is working the hardest to lower your blood sugar
- How often to check your blood sugar
- How much exercise lowers your blood sugar
  - If you take insulin or a medicine from the Secretagogue class of medicines, check your blood sugar before you exercise. If your blood sugar is less than 5.5 mmol/L, have a snack that contains protein and a slow acting carbohydrate (such as a slice of whole grain bread with peanut butter). Slow acting carbohydrate slowly raises your blood sugar to prevent an episode of low blood sugar
- How to know the signs and symptoms of low blood sugar. Carry a fast acting carbohydrate with you at all times just in case you need it. Fast acting carbohydrates raise your blood sugar quickly

#### 4. The Impact of Low Blood Sugar and Driving

Your blood sugar should be higher than 5 mmol/L if you are driving. This prevents you from having low blood sugar while driving. This is crucial information if you are taking insulin or a medicine from the Secretagogue class of medicines.

#### Safety Alert!

You are at risk for low blood sugar (especially after exercise) if you take any of the following diabetes medicines:

- Insulin
- Secretagogue medicines such as:
  - Diamicron (Gliclazide)
  - Amaryl (Glimepiride)
  - Glyburide (Diabeta)
  - Repaglinide (Gluconorm)

Follow the tips below to stay safe while you drive:

- Check your blood sugar before driving. Your blood sugar should be higher than 5 mmol/L
- Check your blood sugar every 4 hours on long drives
- Carry a fast acting carbohydrate with you at all times so that you can treat low blood sugar quickly
- Your blood sugar must stay above 5 mmol/L for 45 minutes or longer before you drive if you just treated a low blood sugar episode



## 5. Medical Identification Jewelry

### What is medical identification jewelry?

Medical identification jewelry is jewelry with a small medical emblem. On the back of the emblem it says 'diabetes'. This emblem tells people you have diabetes. The jewelry comes in many styles, including bracelets and necklaces.

### Why wear medical identification jewelry?

Medical identification jewelry can save your life. This jewelry tells your health information. If you become confused, disoriented or lose consciousness, the bracelet will tell others you have diabetes. This will allow people to know how to help you quickly. Talk to your doctor, pharmacist or diabetes educator for more information.

### Summary

- Low blood sugar means there is not enough sugar in your blood
- You may not have signs or symptoms of low blood sugar. Check your blood sugar often if you take insulin or a medicine from the Secretagogue class of medicines. Read the Safety Alert, in this section, about the risk of low blood sugar with certain diabetes medicines
- Check your blood sugar if you notice any signs or symptoms of low blood sugar
- Treat an episode of low blood sugar with fast acting carbohydrate. Fast acting carbohydrates raise your blood sugar quickly
- Ensure your blood sugar is higher than 5 mmol/L before driving
- Medical identification jewelry can save your life