

# Low Blood Sugar (Hypoglycemia) after Bariatric Surgery

## What is hypoglycemia?

Hypoglycemia = Low blood sugar = a blood sugar level < 4.0 mmol/L

## What are the signs and symptoms of hypoglycemia?

When your blood sugar drops below 4.0 mmol/L, the supply of sugar to the brain reduces. As your body tries to fix this, you may feel:



Sweating



Trembling



Palpitations



Anxiety



Hunger



Nausea



Headache



Tingling



Disturbed sleep



Weird dreams



Weakness/  
Dizziness



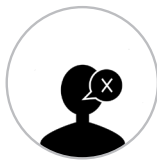
Difficulty concentrating



Vision Changes



Drowsiness



Difficulty speaking



Unconsciousness

## What causes hypoglycemia?

The following are some possible reasons for a low blood sugar:

- Taking too much diabetes medicine
- Not eating enough carbohydrate food
- Skipping a meal or snack
- Delaying your next meal
- Exercising more than usual
- Drinking alcohol



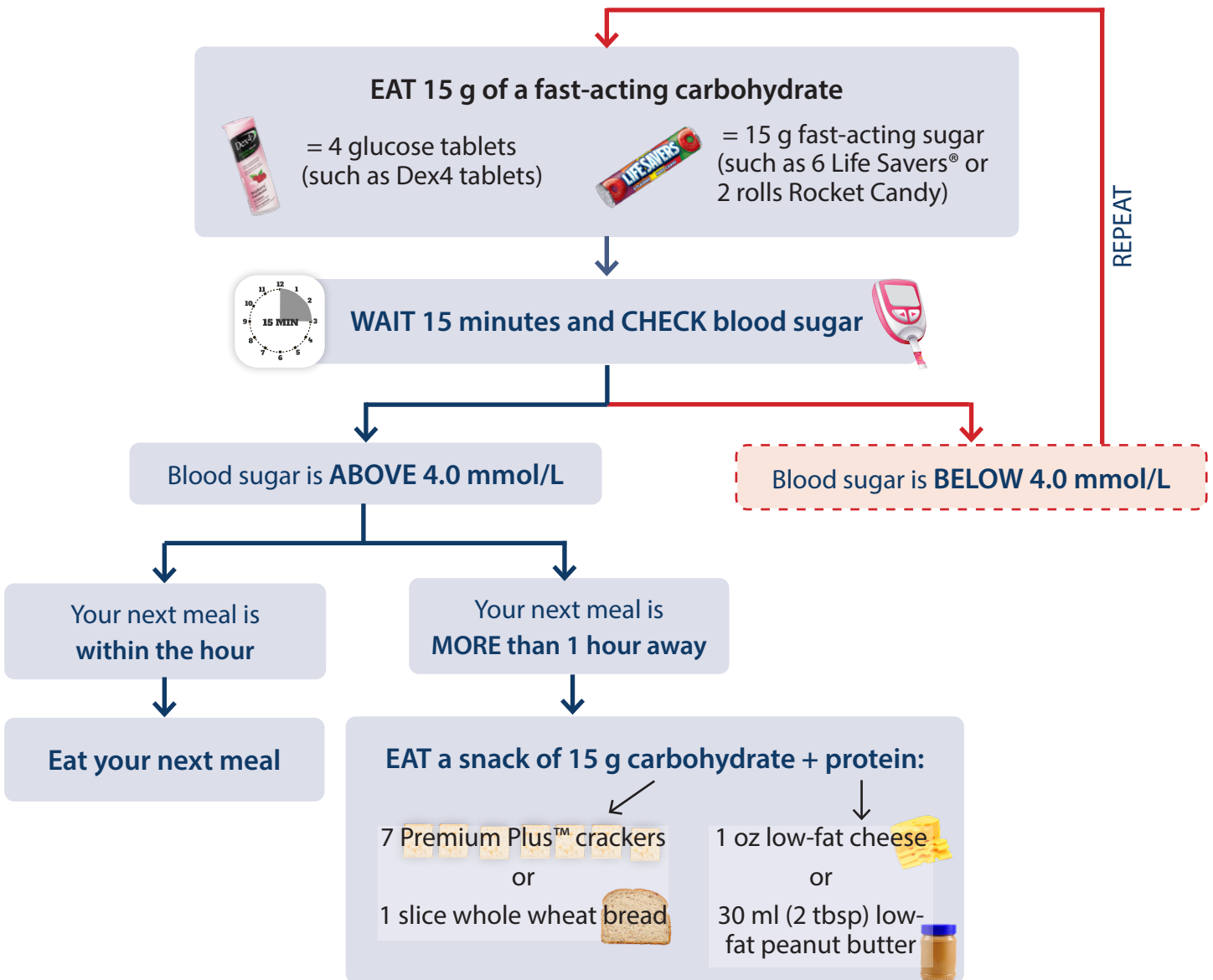
**Hypoglycemia (below 4.0 mmol/L) may become a medical emergency if you do not treat it quickly.**

Nightmares, sleep walking, early morning sweats, or headaches at night may tell you that a low blood sugar happened while you were sleeping.

## How do I treat hypoglycemia?

Always test your blood sugar, if possible. If you are experiencing any hypoglycemia symptoms or your **blood sugar is below 4.0 mmol/L**, treat this low blood sugar by following these steps:

Never use honey, juice, regular soft drinks, or table sugar to treat hypoglycemia. It may cause dumping syndrome in post-bariatric patients.



AFTER TREATING your low blood sugar:

- Record your blood sugar readings in your log book (see page 8 for Blood Glucose Log Sheet).
- Tell your doctor or diabetes nurse educator if you have low blood sugars more than 2 times a week. We may need to adjust your diabetes medicine.

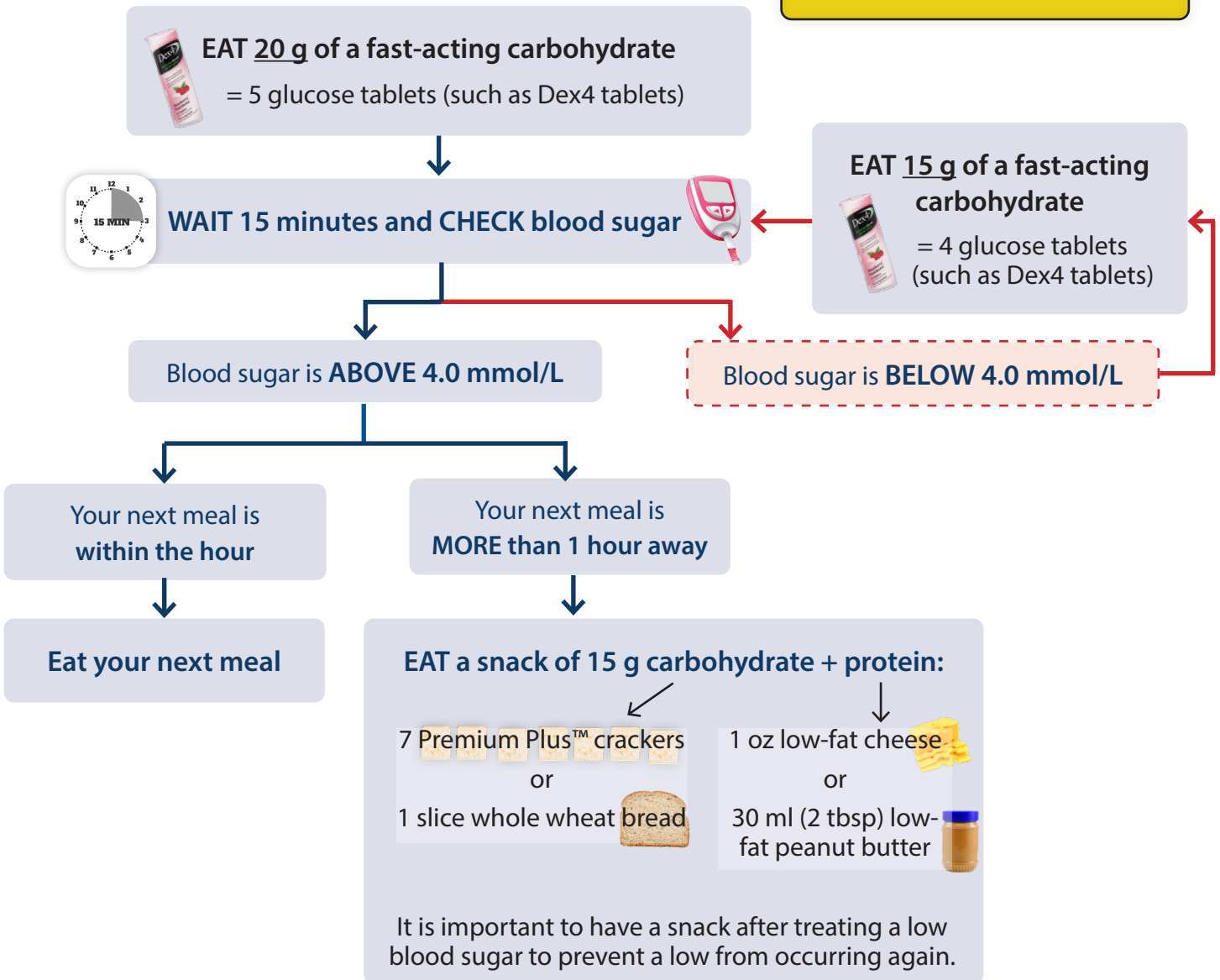


## How do I treat severe hypoglycemia?

**Severe Hypoglycemia** = a blood sugar level < 2.8 mmol/L

If your **blood sugar is below 2.8 mmol/L**, treat this severe low blood sugar by following these steps:

Never use honey, juice, regular soft drinks, or table sugar to treat severe hypoglycemia. It may cause dumping syndrome in post-bariatric patients.



At this level, you may experience a loss of consciousness, poor coordination, and unusual behaviour. If this happens, you will need someone to help you get your blood sugar level back up. **If you are UNCONSCIOUS, your family and friends must call 9-1-1.**

If you experienced severe hypoglycemia before, ask your doctor about using glucagon in the future.

## How do I prevent hypoglycemia?

### To prevent hypoglycemia:

- Never skip meals.
- Do not go more than 4 hours without eating food, especially if you are physically active.
- Eat well balanced meals, with carbohydrate and protein choices.
- If you are doing vigorous physical activity for more than 1 hour, eat a small snack with a carbohydrate and protein of choice.

## How do I prevent hypoglycemia from happening overnight?


If you are on insulin and your blood sugar before bed is less than or equal to 7.0 mmol/L, you can prevent overnight hypoglycemia by having an evening snack that contains carbohydrate WITH protein.


The following guidelines and examples can help you choose your evening snack.

### If your blood sugar before bed is between 6.0 to 7.0 mmol/L:

#### EAT 1 carbohydrate serving (15 g) WITH protein


##### 15 g Carbohydrate example


1 slice whole grain bread 


250 ml (1 cup) 1% milk 

7 Premium Plus™ crackers 

##### + Protein example

+ 30 ml (2 tbsp) low-fat peanut butter 


+ 8 to 10 almonds 


+ 1 oz low-fat cheese 

### If your blood sugar before bed is between 4.0 to 5.9 mmol/L:


#### EAT 2 carbohydrate servings (30 g) WITH protein


##### 30 g Carbohydrate example

1 medium banana 

3 plain digestive cookies 

##### + Protein example

+ 30 ml (2 tbsp) low-fat peanut butter 

+ 1 oz low-fat cheese 

## How do I prevent hypoglycemia while driving?

**5.0 to Drive!**



To prevent low blood sugar while driving, please follow these **diabetes driving guidelines**:

**1**

**Be aware of your blood sugar level.** Test your blood sugar level right **before driving**.

For long drives, check your blood sugar at least **every 4 hours**.



**If your blood sugar before driving is below 4.0 mmol/L**

Do not drive. Follow the instructions on page 2 to treat the low blood sugar.

**If your blood sugar before driving is between 4.0 and 5.0 mmol/L**

Eat a carbohydrate snack (such as a granola bar, sandwich, crackers and cheese, etc.) **BEFORE** you begin to drive.

If you have a history of recurrent severe low blood sugars (where you lost consciousness or needed help from another person), or have hypoglycemia unawareness, **you must test your blood sugar before driving and at least every 2 hours while driving.**



**2**

**Always** keep a fast-acting sugar and other snacks within reach; not in the back seat.



**3**

**STOP** the vehicle in a safe location if you feel symptoms of low blood sugar while driving. Remove keys from the ignition and put on your hazard lights.



**4**

**After treating a low, WAIT** until your blood sugar is **ABOVE 5.0 mmol/L** to start driving. Wait 40 minutes to recover fully from low blood sugar.



**5**

**Tell your healthcare provider as soon as possible** if your sugar went below 2.8 mmol/L while driving, or if someone had to help you treat your low blood sugar.



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## What is hypoglycemia unawareness?

Symptoms from low blood sugars are helpful as they tell you that your blood glucose is low and that you need to take action to bring it back into a safe range. However, many people can have low blood sugars and feel NO symptoms. This is called **hypoglycemia unawareness**.

### People with hypoglycemia unawareness:

- Cannot tell when their blood sugar gets low, so they do not know they need to treat it. This puts them at an increased risk for severe low blood sugars and may need help from others to treat their low blood sugar.
- Are less likely to be awakened from sleep when a low occurs at night.
- Need to take extra care to check blood glucose often. This is especially important before and during critical tasks such as driving.

### Regaining the early warning signs:

You can regain your early warning symptoms by avoiding any hypoglycemia, even mild, for several weeks. This helps your body re-learn how to react to low blood sugar levels.

To do this, you may have to raise your target blood glucose level. You may end up with a higher A1C level, but regaining the ability to feel symptoms of lows is worth the temporary rise in blood glucose levels.



### Did you know?

Hypoglycemia unawareness occurs more often in those who:

- Frequently have low blood sugar episodes, as this can cause you to stop sensing the early warning signs of hypoglycemia
- Have had diabetes for a long time
- Tightly control their diabetes.



If you think you have hypoglycemia unawareness, speak with your health care provider.

They may adjust or raise your blood glucose targets to avoid further hypoglycemia and reduce the risk of future episodes.



## Remember...

- Listen to your body's warning signs of falling blood sugars.
- Always carry a "fast acting sugar" source, such as glucose tablets, in your purse, pocket, briefcase, and car in case you have low blood sugar.
- When out, carry some food (such as fruit, plain cookies, or a granola bar), Dex4 tablets or glucose tablets, and a source of portable protein food, so that if a meal is delayed, you can have your snack to prevent low blood sugar.
- Keep identification on you that shows you have diabetes, such as a MEDIC ALERT® bracelet, wallet card, or set up your smart phone's Medical ID.
- At work, home, or school, teach someone how to identify and treat low blood sugars.
- Try to figure out what caused the low blood sugar so that you can prevent future low blood sugars.
- If you do not have your meter with you, treat the symptoms anyway. It is better to be safe.

**For further information on diabetes and hypoglycemia, please refer to the Diabetes Canada website.**

