

Low Blood Sugar and Kidney Disease

Low blood sugar happens when your blood sugar level falls below 4 mmol/L. When you have kidney disease, this reaction can happen quickly and more often.

If you are used to having very high blood sugar, you may feel the signs of a low blood sugar at levels higher than 4 mmol/L. You should treat these like a low blood sugar.

Causes of low blood sugar

- eating less, skipping or delaying meals and snacks
- recent weight loss
- drinking alcohol on an empty stomach
- sudden changes in kidney or heart function
- taking too many diabetes pills or too much insulin
- being more active than usual

Signs of low blood sugar

Signs of low blood sugar are different for everyone. Your signs may change over time. Below are some signs that can mean your blood sugar is low:

- trembling
- palpitations (heart beats faster)
- sweating
- anxiety
- hunger
- nausea
- tingling
- feel confused; difficult to concentrate
- weakness
- feel drowsy
- vision changes (blurry vision)
- difficult to speak
- headache
- dizziness

Test your blood sugar during the day as suggested by your healthcare team. Also, test your blood sugar during the night and early in the morning. Tell your healthcare team if you have low blood sugar during these times.

If you have signs of low blood sugar often, talk to your doctor about a prescription for glucagon. Glucagon is a hormone made in the pancreas that increases blood sugars.

Treating low blood sugar

1. If you feel the signs of low blood sugar, check your blood sugar right away. If you don't have your meter with you, treat it as a low blood sugar anyway.
2. Take 15–20 grams of quick-acting sugar. See the list on the next page.
3. Wait 15 minutes and test again. If your blood sugar is still below 4 mmol/L, or you still feel like your blood sugar is low, take 15 grams of quick-acting sugar again.
 - Some people with severe kidney disease may need to test every 5–10 minutes. Ask your healthcare provider if you should test more often.
4. If your next meal is more than 1 hour away, eat a snack. The snack should have both a carbohydrate and a protein source, such as:
 - 1 slice of bread with 2 Tbsp (30mL) peanut butter
 - 7 soda crackers with 1 oz (30 grams) hard cheese

If you are unable to treat your own low blood sugar

If your blood sugar is very low, you may not be able to treat yourself. Make sure a family member or friend knows your signs of a low blood sugar and how to treat it.

When you cannot treat yourself because your blood sugar is low, a family member, friend, or healthcare provider should:

1. Give you a glucagon injection. Your doctor, pharmacist, or diabetes educator can give you information about glucagon.
2. Call 911.
3. Test your blood sugar every 5 minutes, or more often if needed.

Examples of quick-acting sugar

- If you need to limit your fluid intake, do not use liquids to treat low blood sugar.
- If you need to limit high phosphorus foods, avoid cola. Instead, use non-cola soft drinks like ginger ale or lemon-lime (Sprite® or 7-Up®).
- If you need to limit high potassium foods, avoid orange juice. Instead, use apple or cranberry juice (regular, not diet or no added sugar).

Below are examples of 15–20 grams of quick-acting sugar. **Dextrose or glucose products are the best choice to treat low blood sugar** because they raise your blood sugar quickly.

Do not use diet products or sugar substitutes to treat low blood sugar.

	If your blood sugar is less than 4 mmol/L: Take 15 grams of quick-acting sugar	If your blood sugar is less than 2.8 mmol/L: Take 20 grams of quick-acting sugar
Special products		
Dex4® Glucose	4 tablets	5 tablets
Dex4® Glucose Liquid Blast	1 bottle (60 mL)	1½ bottle (80 mL)
Liquids		
Juice	⅔ cup (150 mL)	¾ cup (175 mL)
Pop (soft drinks, soda)	⅔ cup (150 mL)	¾ cup (175 mL)
Sweets		
Table sugar dissolved in water	1 Tbsp (15 mL)	1½ Tbsp (25 mL)
Table sugar packets dissolved in water	3 packets	4 packets
Honey	1 Tbsp (15 mL)	1½ Tbsp (25 mL)
Lifesavers®	6 candies	8 candies

If you take Prandase® (acarbose) for your diabetes, you must treat low blood sugar with **dextrose or glucose tablets or honey**. Prandase® doesn't let other forms of sugar absorb fast enough.

Blood sugar and hemodialysis

- For 12 hours after your hemodialysis run, there is a higher chance that you will have low blood sugar.
- To find out if hemodialysis affects your blood sugar, check your blood sugar on dialysis days and non-dialysis days, and then compare your results.
- On dialysis days, you may need to change the amount of insulin or diabetes medicine you take. Ask your healthcare provider for help.
- Bring a snack with you to your dialysis run. Snack examples:
 - ½ sandwich (like egg or tuna) and ¾ cup (175 mL) plain or no added sugar yogurt
 - 3 unsalted stoned wheat crackers with a hard-boiled egg
 - 1 apple, sliced with 2 Tbsp (30 mL) nut butter
 - 2 Tbsp (30 mL) nuts with a low potassium fruit choice