

# Low Blood Sugar and Kidney Disease

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Low blood sugars happen when your blood sugar level falls below 4.0 mmol/L. When you have kidney disease, this reaction can happen all of a sudden, and more often.

If you are used to having very high blood sugars, 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
- 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
- recent weight loss

## 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:

- nervous, irritable, anxious
- shaky, dizzy, lightheaded
- feel sick to your stomach
- sweaty, pale
- your heart beats faster
- confused
- tired, weak, or sleepy
- hungry
- tingling or numbness in your tongue or lips
- trouble speaking
- blurry vision
- headache
- act strangely
- restless sleep

If you have these signs 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 a low blood sugar, check your blood sugar right away to see if it's low. If you don't have your meter with you, treat it as a low blood sugar.
2. Take 15 to 20 grams of quick-acting sugar. See the next page for examples.
3. Wait 15 minutes and test again. If your blood sugar is still below 4.0 mmol/L, or you still feel that 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 to 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 protein source, such as:
  - 1 slice of bread with 2 Tbsp (15 mL) peanut butter
  - ½ cup (125 mL) cold cereal with ½ cup (125 mL) milk
  - 6 soda crackers with 1 oz (30 grams) hard cheese






## If you are not responding

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 aren't responding because your blood sugar is low, a family member, friend, or healthcare provider should:**

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

## Quick-acting sugar

Below are some examples of 15 to 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. **Don't use diet products or sugar substitutes to treat low blood sugar.**

	<b>15 grams quick-acting sugar</b> (use when blood sugar is less than 4 mmol/L)	<b>20 grams quick-acting sugar</b> (use when blood sugar is less than 2.8 mmol/L)
<b>Special products</b>		
Dextrosol	5 tablets	7 tablets
Dex4® Glucose	4 tablets	5 tablets
Dex4® Glucose Liquid Blast	1 bottle (60 mL)	1½ bottle (80 mL)
<b>Liquids (Don't use these if you need to limit your fluid intake)</b>		
Juice 	¾ cup (175 mL)	1 cup (250 mL)
Pop (soft drinks, soda) 	¾ cup (175 mL)	1 cup (250 mL)
<b>Sweets</b>		
Table sugar dissolved in water	1 Tbsp (15 mL)	1½ Tbsp (22.5 mL)
Honey	1 Tbsp (15 mL)	1½ Tbsp (22.5 mL)
Jam	1 Tbsp (15 mL)	1½ Tbsp (22.5 mL)
Lifesavers® 	6 candies	8 candies
Jelly beans 	10 candies	13 candies
Hard candies 	3 candies	4 candies

## If you take Prandase<sup>®</sup>

If you take Prandase<sup>®</sup> (acarbose) for your diabetes, you must treat your low blood sugars with **dextrose** or **glucose tablets** or **honey**. Prandase<sup>®</sup> doesn't let other forms of sugar absorb fast enough. See the *Quick-acting sugar* section on page 2.

## More tips for people with kidney disease:

- If you need to limit your fluid intake, don't use liquids to treat low blood sugars.
- Try not to drink cola (high in phosphorus). Use ginger ale, Sprite<sup>®</sup> or 7-Up<sup>®</sup> instead.
- Try not to use orange juice (high in potassium). Use apple or cranberry juice instead.
- Watch for low blood sugars during the night and in the early morning. Tell your healthcare provider if this happens.

### If you are on 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 sugars, check your blood sugars on dialysis days and non-dialysis days, and then compare your sugars.
- On dialysis days, you may need to change the amount of insulin or diabetes pills you take. Ask your healthcare provider for help.
- You should bring a snack with you to your dialysis run. It is best to eat before or after dialysis, because eating and drinking during dialysis can cause many problems.
- The table below lists some healthy snacks that you can bring to dialysis.

<b>The snack examples below are shown as one serving. Each serving contains 1–2 carbohydrate choices.</b>	
• 1 slice bread with 1 Tbsp (15 mL) no salt added peanut butter	• ½ cup (125 mL) Corn Bran <sup>®</sup> cereal
• ½ bagel with 1 Tbsp (15 mL) cream cheese	• 7 unsalted soda crackers or Melba toast rounds with 1 Tbsp (30 mL) cream cheese
• 1 English muffin with 1 tsp (5 mL) non-hydrogenated margarine	• 3 gingersnap or arrowroot cookies
• ½ medium berry muffin (homemade) with 1 tsp (5 mL) non-hydrogenated margarine	• 1 piece fresh fruit or ½ cup (125 mL) no sugar added canned fruit (drain liquid)