



Diabetes and Hypoglycaemia

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What is Hypoglycaemia?

Hypoglycaemia defined as low blood sugar occurs when blood glucose levels fall below 4 mmol/l or 70mg/dL. It can happen suddenly and can be treated quickly and easily by eating or drinking a small amount of glucose-rich food. If left untreated, however, hypoglycaemia can get worse and cause confusion, clumsiness, or fainting. Severe hypoglycaemia can lead to seizures, coma, and even death.

What are the symptoms of Hypoglycaemia?

Hypoglycaemia causes symptoms such as

- Hunger
- Trembling hands
- Nervousness
- Sweating
- Dizziness or light-headedness
- Tiredness
- Confusion
- Moody
- Difficulty in speaking
- Unconsciousness

What causes of Hypoglycaemia?

Hypoglycemia is caused by a variety of different factors such as the following:

- Hypoglycemia can occur as a side effect of an oral diabetes medications, including insulin.
- In people on insulin or oral diabetes medications, low blood glucose can occur if meals or snacks are too small, delayed or skipped.
- Increased physical activity can cause hypoglycaemia when the body requires more energy than the calories you have eaten can provide.
- Drinking alcoholic beverages, especially binge drinking, can cause hypoglycaemia.
- The body's breakdown of alcohol interferes with the liver's efforts to raise blood glucose. Hypoglycaemia caused by excessive drinking can be serious and even fatal.

How is Hypoglycaemia treated?

Signs and symptoms of hypoglycaemia vary from person to person. People with diabetes should be



aware of their signs and symptoms and inform their friends and family so they can help, if needed.

People with regular episodes of hypoglycaemia should contact their health care provider. Modifications of their treatment plan may be required: less medication or a different medication, a new schedule for insulin or medication, a different meal plan, or a new physical activity plan.

Immediate Treatment for Hypoglycaemia

When a person feels that his blood glucose level is low, he should check it immediately with a glucometer. If the level is below 4 mmol/l, one of these quick-fix foods should be consumed right away to raise blood glucose:

- 3 tsp of sugar
- 1/2 cup of any fruit juice
- 1/2 cup of a regular—**not diet**—soft drink
- 3 pieces sweets

Recommended amounts may be less for small children. The child's doctor can advise on the appropriate amount.

The next step is to recheck blood glucose in 15 minutes to make sure it is 4 mmol/l or above. If it is still too low, another serving of a quick-fix food should be eaten. These steps should be repeated until the blood glucose level is 4 mmol/l or above. If the next meal is an hour or more away, a snack should be eaten once the quick-fix foods have raised the blood glucose level to 4 mmol/l or above.

It is important to note that treatment for hypoglycaemic should be carried out only to a maximum of 3 times. If blood sugar levels fail to increase after the third treatment, it is advisable to seek medical help at the nearest hospital.



How can Hypoglycaemia be prevented?

To prevent hypoglycaemia, people with diabetes should always consider the following:

- **Diabetes Medications** - Diabetes treatment plans are designed to match the dose and timing of medication to a person's usual schedule of meals and activities. Mismatches could result in hypoglycaemia. For good diabetes management, people with diabetes should take diabetes medications in the recommended doses at the recommended times. It is important to discuss with their doctor or diabetes nurse educator regarding these following points:
 - o whether their diabetes medications could cause hypoglycaemia
 - o when they should take their diabetes medications
 - o how much medication they should take
 - o whether they should keep taking their diabetes medications when they are sick
 - o whether they should adjust their medications before physical activity
 - o whether they should adjust their medications if they skip a meal
- **Having regular meals** - People with diabetes should eat regular meals, have enough food at each meal, and try not to skip meals or snacks. Snacks are particularly important for some people before going to sleep or exercising.
- **Their daily activity** - To help prevent hypoglycaemia caused by exercise, health care providers may advise checking the following:
 - o blood sugar levels before sports, exercise, or other physical activity and having a snack if the level is below 100 mg/dL or 5.5 mmol/l
 - o blood glucose at regular intervals during extended periods of physical activity and having snacks as needed
 - o blood glucose periodically after physical activity.
- **Alcoholic beverages** - Drinking alcoholic beverages, especially on an empty stomach, can cause hypoglycaemia. Excessive drinking can be harmful for people taking insulin or medications that increase insulin production. Alcoholic beverages should always be consumed with a snack or meal at the same time. Discuss with the health care provider who can suggest how to safely include alcohol in a meal plan.
- **Driving** - To prevent hypoglycaemia while driving, people at risk should check their blood glucose level before driving. Blood sugar levels should be monitored frequently during long trips. Eat snacks as needed to keep the blood sugar level above 70 mg/dL or 4 mmol/l. If necessary, stop for treatment and then make sure the blood glucose level is 4 mmol/l or above before starting to drive again.

- **Being prepared for hypoglycaemia** - Always be prepared to prevent and treat low blood glucose by:
 - o learning what can trigger low blood glucose levels;
 - o having a blood glucose meter available to test glucose levels; frequent testing may be critical for those with hypoglycaemia unawareness, particularly before driving a car or engaging in any hazardous activity;
 - o always having several servings of quick-fix foods or drinks handy;
 - o planning what to do if you develop severe hypoglycaemia;
 - o telling your family, friends, and coworkers about the symptoms of hypoglycaemia and how they can help, if needed.



Nocturnal Hypoglycaemia

Hypoglycaemia can also happen during sleep. This is known as nocturnal hypoglycaemia. Although nocturnal hypoglycaemia is most common in insulin users, it can also occur for people who take oral anti-diabetic drugs. Sometimes they may wake up during an episode of nocturnal hypoglycaemia but if they don't, then it is important to take note of one or more of these following indications that a hypoglycaemic episode may have occurred while asleep:-

- Crying out or having nightmares
- Waking with a headache
- Finding pyjamas or sheets damp from perspiration
- Feeling unusually tired after waking up
- Having a clammy neck can be a particular indication of night time hypoglycaemia

Causes of Nocturnal Hypoglycaemia

Chances of having night time hypos may be increased by the following:

- Physical activity during the day can increase insulin sensitivity which can lead to night time hypoglycemia, particularly for the first night after a sustained session of activity
- Absence of a night time snack when one is usually taken
- Alcohol consumption
- Too high a level of bedtime insulin
- Following a period of illness

Preventing Night Time Hypoglycaemia

If a person with diabetes experiences frequent nocturnal hypos, he should consult the doctor or diabetes nurse educator to discuss the appropriate changes to be made to their treatment plan, specifically regarding meals and daily activities.

References

<http://www.diabetes.co.uk/Diabetes-and-Hyperglycaemia.html>
<http://diabetes.niddk.nih.gov/dm/pubs/hypoglycemia/>