

# Blood Sugar

[gettheearthhealthy.ca/blood-sugars](http://gettheearthhealthy.ca/blood-sugars)

In this section you will learn:

- What blood sugar is, and the role that it plays
- The complications of unmanaged high blood sugar
- How to improve blood sugar control

- The food you consume gets broken down into glucose (sugar) and released into your bloodstream.
- Glucose is a main source of energy for the cells in your body.
- When your blood sugar levels increase, your pancreas is signaled to release a hormone called insulin. Insulin acts as a “key”, allowing the glucose to travel from the bloodstream into the body’s cells.
- With diabetes, the body either does not produce enough insulin, or is unable to properly use insulin. Therefore, blood sugar levels remain high.

## Complications of Unmanaged High Blood Sugar

Diabetes increases your risk for many health problems. With proper treatment and lifestyle changes, it is possible to prevent or delay the onset of these complications.

### Cardiovascular Disease

- High blood sugar levels can negatively impact the vessels and nerves that control the heart and blood vessels.
- When the arteries of the heart are damaged, the risk of developing plaque in the arteries (atherosclerosis) increases.
- Atherosclerosis can reduce blood flow to major organs and increase your risk of heart disease and/or stroke.
- Atherosclerosis can also occur in the vessels that supply the limbs; this is called peripheral artery disease (PAD) and can lead to cramping or pain with activity.



### Nerve Damage (neuropathy)

- High blood sugar can damage the walls of the vessels that nourish your nerves
- This can lead to tingling, numbness, burning, or pain. These sensations usually begin at the tips of the toes or fingers and gradually spread upward.
- Damage to the nerves related to digestion can cause nausea, vomiting, diarrhea or constipation.
- Nerve damage in the feet increases the risk of various foot complications. Left untreated, cuts and blisters can develop serious infections, which often heal poorly. These infections may lead to amputation.



### Eye Damage



- If blood sugar levels are unmanaged, you are at increased risk of vision conditions such as diabetic retinopathy, cataracts, or glaucoma.
- If living with diabetes, it is recommended to have eye tests completed regularly.

### Kidney Damage



- The kidneys contain many small blood vessels that act as filters, removing waste products from the blood.
- High blood sugar can damage this filtering system, causing waste products to accumulate in the blood.
- Severe damage can lead to kidney failure or irreversible end-stage kidney disease, which may require dialysis or a kidney transplant.

## How to Improve Blood Sugar Control

### Physical Activity and Exercise

- When you exercise, your muscles use more glucose, lowering blood glucose levels
- Exercise also helps the insulin in your body work better. This effect can last for several hours after exercise.

### Healthy Eating

- Refer to Canada's Food Guide to ensure you are eating a balanced diet.
- Aim to include high-fibre foods such as whole grains, vegetables and fruits.
- Do not skip meals; eat at regular times.

### Medication

- Ensure that you are taking your medications as prescribed.
- Speak to your doctor, pharmacist or diabetes specialist if you have questions about your medications.



### Manage Stress Effectively

- Stress impacts your body's hormone levels, which can lead to an increase in blood sugar levels. Learning to manage stress can help you to better manage your diabetes.

### Education and Support

- Attending a Diabetes Education Program can equip you with the tools and knowledge to better manage your diabetes. Speak to your Exercise Therapist if you would like to be referred to a Diabetes Education Program

### Know Your Numbers!

- HbA1c values indicate the average blood sugar levels over the past three months.



For those living without diabetes, general guidelines are: Fasting blood sugar: 4.0 – 5.9 mmol/L

HbA1c: 0.04 – 0.059 or 4 – 5.9%

For those living with diabetes, general guidelines are: Fasting blood sugar: 4.0 – 7.0 mmol/L

HbA1c: < 0.07 or <7

Prediabetes range: Fasting blood sugar: 6.0 – 6.9 mmol/L

HbA1c: 0.06 – 0.064, or 6 – 6.4%