

Diabetes and Exercise

Type I Diabetes

- TYPE I Diabetes occurs when your body makes too little or no insulin.
- Individuals take insulin to control blood sugar levels.

Type II Diabetes

- TYPE II Diabetes occurs when your body either cannot produce enough insulin or does not use the insulin it makes properly.
- Individuals control their blood sugar through nutrition and exercise. Some individuals may require insulin.

WHY EXERCISE IS SO IMPORTANT

Working muscles pull sugar from the blood to use for energy resulting in lower blood sugar while exercising and greater blood sugar stability even up to 72 hours after exercise. Moderate intensity exercise performed on a regular basis (at least every other day) is recommended for maximizing blood sugar control. Regular exercise also contributes to fat loss and weight management.

PRECAUTIONS

- People with diabetes need to check their blood sugar regularly. Avoid exercise if blood sugar is too low (less than 4.0 mmol) or too high (greater than 14 mmol).
- Exercising late in the evening increases the risk of nighttime low blood sugar. Initially, when starting exercise check your blood sugar before bed.
- Know the signs and symptoms of HYPOGLYCAEMIA AND HYPERGLYCEMIA.
- **Hypoglycaemia** = Low Blood Sugar (<4.0mmol)
- **Hyperglycaemia** = High Blood Sugar (>14mmol)

MEDICATIONS

- Adhere to your prescribed medications! Monitoring your blood sugar consistently will provide valuable feedback.
- Certain medications can mask or intensify the risk of hypoglycaemia with exercise: Beta-blockers, Coumadin, Calcium Channel Blockers, Diuretics, Nicotinic acid.

IF YOU TAKE INSULIN

- Avoid injecting insulin into areas over exercising muscle (E.g. avoid injecting into your thighs if you are walking or biking).
- Avoid exercise at peak insulin activity times OR adjust insulin dose if exercise occurs while insulin is peaking. Speak with your doctor first!

EXERCISE AND BLOOD SUGAR

- Individuals starting an exercise program are advised to monitor their blood sugar levels BEFORE and AFTER exercise for 6 or more exercise sessions to get an idea of how their body is responding.
- If your blood sugar is less than 5.6 mmol/L before exercise, have a slow acting complex carbohydrate snack before starting (E.g. a few crackers and a slice of low fat cheese). Complex carbohydrates release sugar into your blood slowly so that your blood sugar stays in the normal range without dropping too low with exercise.
For more information, please speak with one of our dietitians.
- Have a carbohydrate source readily available during exercise. (E.g. glucose tablets or juice). Within an hour after exercise, eat a balanced meal or snack to replenish energy stores.

CHECK YOUR FEET

- Many people with diabetes have a loss of sensation especially in the lower legs and feet known as peripheral neuropathy.
- Proper footwear is essential! Individuals should use silica gel or air midsoles, use polyester or blend cotton-polyester socks to prevent blisters and to keep the feet dry.
- Individuals should monitor their feet closely for blisters, ulcers, sores both before and after physical activity.

DRINK WATER

- Dehydration can affect blood sugar levels and heart function. Consume 12 ounces of water 2 hours before exercise, and drink small amounts frequently during exercise to compensate for fluids lost through sweat.

FITT PRINCIPLE (for individuals with diabetes):

AEROBIC EXERCISE:

Frequency: 5 days per week (or equivalent of 150 minutes/week)

Intensity: Moderate exercise at a level you can talk but not sing, RPE 11 – 14.

Time: 30 – 60 minutes per day (If unable to perform 30 minutes of continuous exercise, break into 10 minute intervals)

Type: Aerobic exercise - Best choice: Walking! For those with peripheral neuropathy: stationary bike, arm bike, or elliptical may be a better choice.

RESISTANCE TRAINING:

Individuals with diabetes are encouraged to follow a resistance training program as set by kinesiologists using low weights. Major muscle groups should be trained 2 – 3 times per week, 2 sets of 10 – 15 repetitions.

(E.g. Bicep curls using appropriate weight, 15 curls in a row, rest, repeat)