



# Exercising with Type 1 insulin dependent diabetes

## Every move counts

Move more and reduce your sedentary time each day by incorporating different types of movement. It is never too late to start, some is always better than none!

## How to get started

Regular exercise significantly reduces your risks of heart disease, some cancers, hypertension, obesity, stroke, osteoporosis, depression and stress. Regular exercise can help reduce your blood sugar level, increase your sensitivity to insulin, help you maintain a healthy weight and help lower your blood pressure, heart rate and cholesterol. It improves your ability to enjoy the activities of daily living.

Exercise is an important part of any diabetes treatment plan. Check your blood sugar before, during and after exercise to avoid potential problems. Physical activity lowers blood sugar, often for a long time after you have finished. If you begin a new activity, check your blood sugar level more often than usual until you know how it affects your blood sugar levels. You might need to adjust your meal plan or insulin doses to compensate for the increased activity. If you use an insulin pump, you can set a temporary basal rate to keep your blood sugar from dropping (your doctor or diabetes healthcare provider can demonstrate).

Regular exercise helps to improve and maintain your health by reducing the risk of developing other diseases associated with diabetes. It also reduces the risk of infections, blindness, damage to the nerves of the foot (which can often lead to amputations), kidney disease and peripheral arterial disease.

**Take all medicines as recommended by your doctor or pharmacist.**

## Warm up and cool down

**Always start your exercise session with a 10–15-minute warm up to loosen up the muscles and raise the heart rate safely.** Warm-up exercises include dynamic stretches, range-of-motion activities and low intensity movements. This can be done standing up, walking around, marching on the spot or seated.

**Always end your exercise session with a 10–15-minute cool-down to ensure your heart rate and breathing rate return to normal safely.** Cool down exercises include slowly decreasing the intensity of your activity and simple stretches.

## Be active

### Some is good, more is better

<b>How much:</b>	Aim for at least <b>150 – 300</b> minutes a week of moderate intensity or at least <b>75–150</b> minutes a week of vigorous intensity physical activity. Start moving more each day increasing to regular movement every day and add sessions as your strength and stamina improve.
<b>How hard:</b>	Any movement helps. Aim for moderate to vigorous intensity—aim to get slightly breathless. Take frequent breaks, if necessary.
<b>How long:</b>	Aim to spread out your session throughout the week. If your fitness level is low, start with 5–10-minute sessions and add 10-minute intervals until you can comfortably exercise for longer.

<b>What type:</b>	All physical activity counts. Try activities within your abilities: walking, cycling, jogging, dancing, swimming, water aerobics, hiking—choose something you enjoy! Recreational team sports such as basketball, golf, soccer and volleyball are great social activities too! Household activities such as cleaning, gardening, vacuuming or walking your dog are great activities for your health.
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### What will it do for me?

*Regular exercise in diabetes can improve blood glucose control, increase insulin sensitivity, lose weight, and improve heart and lung function to reduce the increased risk of heart problems and stroke as a result of diabetes. It also reduces stress, anxiety and depression and helps you sleep better.*

## Build strength

<b>How much:</b>	At least twice a week.
<b>How hard:</b>	Start with light muscle strengthening exercises and progress to moderate or greater intensities over time.
<b>How long:</b>	Choose a variety of 8–10 exercises targeting the upper and lower body and repeat each exercise 10–15 times. Try 1–2 sets.
<b>What type:</b>	A variety of strength exercises using free weights, resistance machines or household items such as a can of beans or a weighted water bottle as a weight. Strength exercises you can do at home include sit-to-stands, seated row, seated leg curls, push-ups and squats.

### What will it do for me?

*Regular strength exercises have been shown to improve blood sugar control. They also help you gain muscle, lose body fat and feel more confident.*

## Improve balance

<b>How much:</b>	At least three days a week.. Start with one session per week, if necessary, and gradually work towards two.
<b>How hard:</b>	Choose 2–3 balance exercises and repeat each exercise 10–15 times.
<b>How long:</b>	Hold each balance for 10-30 seconds.
<b>What type:</b>	Try yoga, Tai Chi or home balance exercises such as standing on one foot, a heel-to-toe walk or a balance walk lifting one leg at a time. Ensure the area you are exercising in and the type of balance exercise is safe.. If you are at high risk of falling, do seated balance exercises or use a sturdy chair or wall for support.

### What will it do for me?

Practicing balance exercises helps to train your body to react more quickly to a loss of balance and can help reduce the risk of falls, fractures and injuries.



## Sedentary living

**Reduce the amount of time being sedentary.** Move more and break up sedentary time. Sedentary behavior is defined as time spent sitting or lying with low energy expenditure, while awake in the context of occupational, educational, home and community settings, and travel. Higher amounts of sedentary behavior can increase the risk of heart disease, type 2 diabetes and some cancers.

**Replace sedentary behavior with more physical activity of any intensity (including light intensity).** It is possible to avoid sedentary behaviour and be physically active while sitting or lying, through, for example, upper body led activities, inclusive and/or wheelchair-specific sport and activities. Try seated stretches for those with limited mobility; using active forms of transport; standing while working (within your abilities and environment), and other accessible active options to replace sedentary time.

## Your exercise, your way!

Choose activities that are easy to start with, and that you enjoy. Always exercise within your abilities. If mobility is difficult, adapted cycling, swimming and chair-based exercises may be better alternatives. Exercise with friends and family or join a group class. Try exercising both indoors and outdoors and see which you prefer. Most importantly: **some physical activity is better than none!**

## Resources

Physical activity and type 2 diabetes can be a complex issue. Contact Diabetes Canada (1-800-226-8464) to find out about different peer support groups or medically supervised programs that might be available to you. Their website has great information and specific guidelines related to diabetes and physical activity. <https://www.diabetes.ca/nutrition---fitness/exercise---activity>

## Exercise safety

Ensure the following to exercise safely with diabetes:

- Adapt your insulin dose and carbohydrate requirements in light of your exercise plan. As you exercise more regularly, you will be able to individually plan and manage your insulin requirements and carbohydrate intake accordingly.
- Always wear or carry a diabetes ID, and if exercising alone or in a group ensure there is someone to help if you feel unwell.
- Have carbohydrates available during and after exercise in case of low blood sugar levels.
- Plan to exercise one to two hours after a meal and more than one hour after insulin.
- Always check blood sugar levels before exercising. A suitable blood sugar level before you plan to exercise is between 6–15 mmol/l. If your blood glucose is over 15 mmol/l and/or you have ketones present, don't exercise. If your blood glucose level is under 6 mmol/l, you should eat carbohydrates before you exercise.
- Avoid injecting insulin into parts of the body that are active during the exercise.
- You may need to reduce the dose of insulin by 25–75% before exercising and reduce your post-exercise insulin requirement on checking your blood sugar levels after your workout.
- During long exercise sessions, you may need to eat 15–30 g of carbohydrate or 'fast carbohydrates' and continue to check blood sugars every 15-30 minutes to control blood sugar levels.

Ask your doctor for more information about how to exercise safely, adjust insulin dosage and how to maintain an exercise plan. Start with shorter sessions (e.g. 10–15 minutes) and slowly build up to the recommended level. Always exercise within your abilities.

Aim to get slightly out of breath, but exercise sensibly and stop the activity if you feel unwell, become out of breath, dizzy or experience chest pain or discomfort and follow your treatment and medication plan agreed with your doctor or healthcare provider.

Always wear comfortable clothing and shoes that give good support. Take frequent breaks if necessary, and drink water before, during and after exercise.

Choose environments that you can access freely and safely. Please ask your healthcare provider or local leisure organizations for advice on the best option for you.

