

Activity, Exercise and Diabetes

Regular exercise is a part of a healthy lifestyle and can help people with diabetes.

Benefits of Activity

There are many benefits of being active.

- Lowers your risk of heart disease. Heart health improves through aerobic activities (walking, jogging, swimming, dancing, etc.).
- Improves cholesterol levels and reduces blood pressure.
- Promotes restful sleep.
- Improves mood, reduce stress and anxiety.
- Increases energy.
- Improves blood sugar and may reduce how much medicine you need. Exercise helps to:
 - Increase lean body mass (amount of muscle).
 - Improve insulin resistance and helps muscles to use blood sugar better.
 - Achieve and maintain a healthy weight.
- Lowers your risk of neuropathy (nerve damage), retinopathy (eye damage), and neuropathy (kidney damage).

Starting an Exercise Program

Check with your doctor before starting an exercise program. Choose activities you enjoy and fit them into your lifestyle. Slowly increase how often, how hard, and how long you exercise. You should build up to a goal of at least 150 minutes per week.

Hypoglycemia

Low blood sugars can affect those with type 1 diabetes and those with type 2 using insulin or some types of diabetes pills. Low blood sugar can be caused by:

- Too little food before exercise.
- Insulin peaking during exercise.

Low blood sugars can occur up to 24-48 hours after exercise.

Resistance training before aerobic training may reduce risk for lows.

Exercise may increase blood sugars. A surge of adrenaline sends a message to your liver to release sugar with more intense sports (i.e., weightlifting, sprints, swimming, wrestling, etc.). Some people need insulin before these activities to keep sugar close to target range.

Guidelines for Type 1 Diabetes

If you have type 1 diabetes, you should:

- Check blood sugar levels before and after exercise. If activity is longer than 1 hour, check blood sugar every hour.
- Check for ketones if blood sugars are 250-350 mg/dL. Delay activity if moderate to large amounts of ketones are present.
- Exercise after meals and snacks.
- Inject insulin into a site where muscles are less active. For example, avoid injections in your legs if you plan to run.
- Always **carry identification** that shows you have diabetes.
- Always **carry fast acting carbs** to treat low blood sugars (4 oz. juice,

glucose tabs, glucose liquid, small pack of Skittles[®], etc.).

Guidelines for Type 2 Diabetes

If you have type 2 diabetes, you need to:

- Check blood sugars before and after exercise.
- Avoid high intensity exercise if blood sugar is higher than 250 mg/dL.
- If you use insulin, inject insulin into a site where muscles are less active. For example, avoid injections in your legs if you plan to run.
- Always **carry identification** that shows you have diabetes.
- If you use insulin or take pills that lower blood sugars, always carry a fast-acting sugar source to treat low blood sugars (4 oz. juice, glucose tabs, glucose liquid, small pack of Skittles[®], etc.).

Adjust Insulin for Activity

Ask your diabetes team if you should adjust insulin before or after exercise. It is often best to reduce insulin rather than add extra food. If activity is less than 2 hours after a meal, you may need to decrease the insulin dose given with the meal before activity. The diabetes team will help you make a plan that works for you.

Reduce your mealtime insulin by _____ for moderate activity like fast paced walking or cleaning your garage.

Reduce it by _____ for more intense exercise such as biking or splitting/loading wood.

Even if you adjust insulin, you may also need to adjust food choices. Use the chart below as a guide.

Type of Activity	Examples	Blood Sugar Level	Suggested Carbs (without insulin)
Short duration/low intensity (Can sing/talk)	<ul style="list-style-type: none"> • Walking • Leisure bike ride 	Under 100 mg/dL	15 grams carb
		Over 100 mg/dL	Extra carbs not needed
Moderate intensity	<ul style="list-style-type: none"> • Tennis • Golfing • Cycling • Jogging • Swimming 	Under 100 mg/dL	30 grams carb
		100-150 mg/dL	15 grams carb
		Over 150 mg/dL	Extra carbs not needed
Strenuous or high intensity (can't sing or talk) (High intensity sports may require an extra 15 grams of carbs every 45 minutes)	<ul style="list-style-type: none"> • Football • Hockey • Basketball • Strenuous swimming • Strenuous cycling • Shoveling snow 	Under 100 mg/dL	45 grams carb
		100-150 mg/dL	30 grams carb
		150-200 mg/dL	15 grams carb

Your health care team may have given you this information as part of your care. If so, please use it and call if you have any questions. If this information was not given to you as part of your care, please check with your doctor. This is not medical advice. This is not to be used for diagnosis or treatment of any medical condition. Because each person's health needs are different, you should talk with your doctor or others on your health care team when using this information. If you have an emergency, please call 911. Copyright © 11/2022 University of Wisconsin Hospitals and Clinics Authority. All rights reserved. Produced by the Department of Nursing. HF#8262.