Whether you are an athlete, play on a local softball team or just like to go to the gym, being physically active can benefit anyone with type 1 diabetes. Daily exercise is not only good for you, but can help maximize good blood glucose control. According to the *2008 Physical Activity Guidelines for Americans*, you need to do two types of physical activity each week to improve your health – aerobic and muscle-strengthening.

Adults need at least:

- 2 hours and 30 minutes (150 minutes) of moderate-intensity aerobic activity (i.e., brisk walking) every week **and** muscle-strengthening activities on 2 or more days a week that work all major muscle groups (legs, hips, back, abdomen, chest, shoulders, and arms).
- or 1 hour and 15 minutes (75 minutes) of vigorous-intensity aerobic activity(i.e., jogging or running) every week **and** muscle-strengthening activities on 2 or more days a week that work all major muscle groups (legs, hips, back, abdomen, chest, shoulders, and arms).
- or an equivalent mix of moderate- and vigorous-intensity aerobic activity **and** muscle-strengthening activities on 2 or more days a week that work all major muscle groups (legs, hips, back, abdomen, chest, shoulders, and arms).

In addition, all young adults should decrease the total amount of daily sedentary time (Yup, we're talking video games, binge-watching TV shows, and hours on the computer,) and break it up with frequent bursts of activity.

Being active doesn't necessarily mean joining a gym or training for a marathon. It can be something as simple as taking a power walk after dinner or riding your bike to meet friends for a game of basketball. The best kind of exercise is the kind that you enjoy and will actually do on a regular basis. Some people like to mix up their exercise by biking one day and doing martial arts or dance the next day. Activities like yoga and pilates are great for toning, developing core strength, and relaxation (and are a great way to meet people!)

You may notice that aerobic activity will lower your blood glucose levels while competitive sports and activities like strength training and sprinting may temporarily increase blood sugar levels. How your body will react to exercise depends on your starting blood glucose level, the intensity and duration of exercise and any changes to your insulin dose. Additional carbohydrate intake and/or insulin reductions are typically required to maintain glycemic balance during and after physical activity**. Check your blood glucose frequently to adjust your carbohydrate intake and insulin dose for exercise.**

Before exercise:

- A blood sugar of less than 100 before exercise can lead to a low during the work-out.
- It is helpful to eat a small snack at least 30 minutes before exercising to prevent a low blood glucose. The amount should depend on your blood glucose levels. A snack can be something simple like an apple with peanut butter, and remember to start the activity well-hydrated!
- If you are using an insulin pump, you can set up a temporary basal rate to reduce the risk for lows.

During exercise:

- Staying hydrated is the most important thing during exercise.
- If you feel like you are going low, be sure to have glucose tabs or a sweetened sports drink available.
- When doing serious training for an endurance event, it is necessary to monitor your blood glucose more often and may require a change in your insulin doses or the use of carbohydrate rich foods like sport gels and bars during the workout session to keep your blood sugar at an optimal level. Talk with your diabetes care team about strategies.

After exercise:

- If blood glucose levels are stable after exercise, you should try to eat within 2 hours to refuel your body.
- If you trained for 90 minutes or more, having a carbohydrate and protein snack will help replenish muscle energy stores.
- You may need to check your blood glucose levels more often at night if you have been really active throughout the day. In addition, many people reduce their overnight insulin on days they exercise, by taking less basal insulin or reducing basal rates on their insulin pump. If you have lows on nights following exercise, talk to your diabetes care team about a strategy to reduce overnight insulin.

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Disclaimer: This document is not intended to take the place of the care and attention of your personal physician or other professional medical services. Our aim is to promote active

participation in your care and treatment by providing information and education. Questions about individual health concerns or specific treatment options should be discussed with your physician.

Recommended

Eating on Your Own

No Exceptions

Sex, Insulin, and Rock-n-Roll

Diabetes Burnout

Say What?

Sources

In his book, Gary Scheiner provides the tools to "*Think Like a Pancreas*"— to successfully master the art and science of matching insulin to the body's ever-changing needs, including during exercise.

In his book, *Pumping Insulin: Everything for Success on an Insulin Pump and CGM, 6th Edition* John Walsh discusses using insulin pumps and CGM to manage type 1 diabetes, including during exercise.

Adam Brown's new book, *Bright Spots and Landmines: The Diabetes Guide I Wish Someone Had Handed Me*, includes tips on simple ways to improve exercise and sleep.

Tips for managing glucose levels during exercise – Insulin Nation

Ketones and Exercise – What You Need to Know – Insulin Nation

Exercise Guide – Breakthrough T1D

Exercise and Type 1 – ADA

Exercise