LMC

Exercise & Physical Activity

Tackling exercise on insulin.

- **#1.** It is great that you are being active. Keep it up!
- **#2.** Before starting a physical activity program, ensuring that your basal rates are set properly will allow you to better understand the impact that activity will have on your blood sugars.
- **#3.** Use these recommendations to guide you to find the solution that works best for you.
- **#4.** Planning = better results. There is no magic answer. We are all different. Test and evaluate!

1| Getting started.

- One of the biggest challenges with moderate aerobic exercise and diabetes is the ability to balance activity with carbs and insulin in order to prevent low blood sugars.
- Exercise >30 minutes will likely require extra carbs or adjustments to basal insulin to avoid exercise lows.
- You may find that after training for several weeks, your blood sugar will not drop as significantly or as often as when you first started.
- The start time of your exercise can play a big role in your body's response. For instance, you are less likely to experience lows if you exercise before breakfast, especially before taking any insulin.

2 Know what insulin to adjust.

- Adjust the insulin that will have the most effect on your blood sugar while you are exercising:
- if your activity start time is going to be within 2 hours after your meal you may need to adjust your pre-meal bolus*
- If your activity start time is NOT within 2 hours after a meal bolus you will likely need have a snack or plan ahead with taking less basal the night before.

*3 Know how to use ExCarbs.

ExCarbs quantifies how many carbs an exercise will consume based on your body weight. Calculate yours:

Weight	kg	Approximate amount of ExCarbs for Activity
Moderate Activity?	~0.5g/kg/hr	g
Intense Activity?	Up to 1.0g/kg/hr	g

Use this number to assist you planning your activity (see following scenario) + consider *your* goals when choosing whether or not to eat the extra carbs, adjust your meal bolus, take less background insulin or a combination!

Scenario

- Consider a 70kg person planning to do 1hour of a moderate intensity aerobic activity approximately 1.5 hours after eating a lunch containing 60g of carbohydrate.
- ExCarb amount = 70kg x 0.5g/kg/hr = 35g

OPTION A| consume the carbs

- She would have to consume an additional 35g of carbohydrate to compensate for this activity. She can choose to drink it prior, during and/or after her activity
 - e.g., Gatorade[™] (14g carbs/8oz). Therefore, she would need a total of 20oz found in 2/3 of a bottle.

OPTION B| adjust meal bolus

- Subtract the ExCarb amount from the total amount of carbohydrates planned for that particular meal, bolus for the difference.
- Planned Carbs ExCarbs = 60g 35g= 25g
- She would have to give less bolus insulin since she would be only taking the 25 grams into account.

OPTION C| take less basal insulin

• If she knows she is being active on certain days of the week, she may consider taking less basal insulin the night prior if there is a pattern of lower blood sugar levels with more active days.

Prevention of exercise induced keto-acidosis

Blood sugar levels higher than 14.0mmol/L prior to exercise may mean a lack of insulin delivery. In this case, ketones should be monitored.

★ If there are NO ketones present, evaluate whether or not the high blood sugar is due to recent food intake, exercise with caution and test regularly.

 \checkmark If there ARE ketones present, a correction bolus will be needed and exercise should be delayed until the ketones are negative.

** If you have blood ketones >3mmol/L at any point, it is recommended that you to go to the Emergency Room immediately.



