How to Adjust
Insulin Doses
(injections)

These adjustment guidelines are provided for information purposes only and are not a substitute for advice from your healthcare team.

Speak to your healthcare team at any time, as needed.

To make it easier to analyze my blood sugar levels and adjust my insulin doses, I need to do the following:

- Write down my **pre-meal and bedtime blood sugar levels** for 7 days **and/or upload and analyze** the reports from my CGM.

- Write down the **rapid-acting insulin** doses that I take, separating the insulin taken to cover carbs from the insulin taken to correct my blood sugar.

- Write down my **long-acting insulin doses.**

- Record the **amount of carbs** that I eat (remember to avoid snacking during the adjustment period and to maintain a regular meal schedule).

- Record my **hypoglycemic episodes** and the **treatment administered**.

- Record my periods of **physical activity** and the type of activity (remember to avoid any unusual physical activity).

- Record the number of **alcoholic drinks** that I consume.

- Note down times when **I'm not feeling well** (e.g., stress, illness).

1- IDENTIFY OUT-OF-RANGE BLOOD SUGAR LEVELS

Which blood sugar readings are **outside** of my target blood sugar levels?

TARGETS
PRE-MEAL : 4 to 7 mmol/L.
TWO HOURS POST-MEAL: 5.0 to 10.0 mmol/L
(or personalized targets)

2- DISREGARD OUT-OF-RANGE BLOOD SUGAR LEVELS THAT I CAN EXPLAIN

(no adjustment is usually required for those blood sugar readings) I can use the PDF document entitled "What Affects Blood Sugar Levels?" to identify the causes.

3- DETERMINE WHETHER THERE ARE ANY TRENDS

If so, **at what time of the day?**
To identify a trend, I need to observe it for at least 3 days in a given week
(e.g., blood sugar <u>often high</u> before dinner or <u>often low</u> before breakfast).

CAUTION!
In the case of hypoglycemia **at night <u>or</u> in the morning before breakfast**, do not wait to see a trend.
Decrease your <u>long</u>-acting insulin dose right away.

4- IDENTIFY THE INSULIN DOSE TO BE ADJUSTED

For the identified trend, what was the last insulin dose injected?
(E.g., if I observe that my blood sugar tends to be high before dinner, the last insulin dose administered is the one taken at lunch. This is the insulin dose that needs to be adjusted.)

I use the following table to identify the responsible insulin dose.

At what time do I observe a trend?	Breakfast		Lunch		Dinner		Bedtime
	Before (or at night)	After	Before	After	Before	After	(before a snack)
Which insulin needs to be adjusted?	Long-acting insulin	Rapid-acting insulin taken at **breakfast**		Rapid-acting insulin taken at **lunch**		Rapid-acting insulin taken at **dinner**	

5- ADJUST THE INSULIN DOSE

Adjust only one insulin dose at a time.
(see the tables below to find out by how many units I need to adjust my dose)

- Start by adjusting any insulin doses that cause hypoglycemia!   .
- Next, adjust the insulin doses responsible for **hyperglycemic episodes** by starting with the dose administered in the morning, followed by the next periods of the day.

6- WAIT BEFORE MAKING ANOTHER ADJUSTMENT

Wait at least 48 hours before making another adjustment.
This allows me to assess the impact of the change made and see whether further adjustments are needed.

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NUMBER OF UNITS REQUIRED FOR THE ADJUSTMENT

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If the insulin that I take is not included in the following lists, I need to ask my healthcare team for guidance.

Long-acting insulin
Humulin® N, Novolin ge NPH, Levemir®, Basaglar®, Lantus®, Toujeo®*, Tresiba®*

	If my total daily insulin dose is **less than 10 units**	If my total daily insulin dose is **more than or equal to 10 units**
HYPERGLYCEMIA EPISODES in the morning before breakfast	+ 1 unit	+ 2 units
HYPOGLYCEMIA EPISODES at night and/or in the morning before breakfast	- 1 unit	- 2 units

Wait at least **2 to 3 days** between my adjustments
*Toujeo® or Tresiba® are longer-acting insulins. A waiting period of **4 to 5 days** is suggested between adjustments.

RAPID-ACTING INSULIN
Fiasp®, Novorapid®, Apidra®, Humalog®, Humulin® R, Novolin® ge Toronto

What model do I use to calculate the insulin needed to cover carbs?

	Fixed doses: I always **take the same dose at mealtimes**		**Insulin-to-carb ratios:** I calculate the insulin I need to take **based on the amount of carbs that I eat**			
	X units / meal		**X units** / 10 g of carbs		1 unit / X grams of carbs	
	If dose is smaller than **5 units** Example: **3 units**	If dose is larger than **or equal to 5 units** Example: **7 units**	If dose is smaller than **0.5 u** / 10 g Example: **0.2 u** / 10 g	**If dose is larger than or equal to 0.5 u** / 10 g Example: **0.8 u** / 10 g	If ratio is smaller than 1 u / **20 g** Example: **1 u / 25 g**	If ratio is larger than or equal to 1 u / **20 g** Example: **1 u / 15 g**
HYPERGLYCEMIA EPISODES before the next meal or at bedtime	+ 0.5 unit	+ 1 unit	+ 0.1 unit	+ 0.2 unit	- 2 g	
HYPOGLYCEMIA EPISODES before the next meal or at bedtime	+ 0.5 unit	+ 1 unit	+ 0.1 unit	+ 0.2 unit	- 2 g	

Wait at least **2 to 3 days** between my adjustments.
* There are pens that allow patients to administer half-units. I should talk to my healthcare team if needed.