How to Determine your Insulin-to-carb Ratios (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.

- I select the meal for which I want to determine a ratio (breakfast, lunch or supper).
- Before conducting the test, I select a meal that:
  - is balanced (not too high in fat or too rich in protein);
  - contains approximately 50 grams of carbs;
  - contains foods for which I know the precise carb count.

To conduct the test, I choose a time when my blood sugar level is within range (between 4.0 and 7.0 mmol/L) before the meal

- I make sure that:
  - I have not taken any rapid-acting insulin for at least five hours.
  - I have not eaten in the last three hours.
  - I have not had any hypoglycemic episodes in the last six hours.
  - I take the injection 10–15 minutes before I start eating (exception: if I use Fiasp® insulin, I bolus five minutes before eating)
  - I do not do any unusual physical activity.
  - I do not drink alcohol before or during the test.
  - I do not administer a correction bolus during the test.
  - I do not eat anything other than the planned meal (unless hypoglycemia occurs) during the test.

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1- Measuring my Blood Sugar

I jot down my blood sugar level before the meal for which I want to determine a ratio and before the next meal (minimum four hours later) as well as the insulin dose I injected and the amount of carbs I ingested. I calculate the variation in my blood sugar levels since starting the test.

Example :
Meal: **Lunch**
Amount of carbs (g): **45 g**
Number of units administered: **6**

Blood sugar at the **start of the test** (before the meal)	Blood sugar before the next meal (mmol/L) (at least four hours later)	**Blood sugar variation** (from beginning of test)
5.6	**4.8**	**-0.8** (4.8 - 5.6 = **- 0.8**)

CAUTION!
If I go into **hypoglycemia**, I need to **stop the test** and correct the situation by eating carbs.
If this reoccurs when I redo the test, I will have to adjust my insulin dose.

2- Redo the test three times to evaluate the meal (on three different days)

Use the same insulin dose and the same amount of carbs for the meal and eat at the same time

3- Assess my Results
At least two days out of three, my blood sugar level:

Rose or fell by more than 1 mmol/L	**Remained Stable** Did not vary by more than 1 mmol/
The insulin dose for the amount of carbs must be adjusted before determining the ratio. See the Adjusting Your Insulin Doses module in the Medication section to learn how to adjust your dose. Once I have determined the insulin dose that keeps my blood sugar level from varying by more than 1 mmol/L, I can use it to calculate my ratio.	**4- Calculate the Ratio for this Meal** **See the method below**

CALCULATING THE RATIO
1 unit: **X grams** of carbs **method**

AMOUNT OF CARBS (g)	/	**NUMBER OF INSULIN UNITS (u)**	=	**RATIO 1u: Xg**
e.g., 45 g		e.g., 6 u		e.g., 45 ÷ 6 = 7.5 This means that for 7.5 g of carbs, I need to take 1 unit of rapid-acting insulin.

Determining my Ratios

MEAL: AMOUNT OF CARBS: NUMBER OF INSULIN UNITS:	PRE-MEAL BLOOD SUGAR (mmol/L)	BLOOD SUGAR BEFORE THE NEXT MEAL (mmol/L)	Variation
Day 1 :			
Day 2 :			
Day 3 :			

To calculate my ratio:

$$\frac{\text{Amount of carbs (g)}}{\text{Number of units of insulin (u)}} = \text{Ratio}$$

1u : _____ **g**