

INSULIN-TO-CARB RATIOS

Using an insulin-to-carb ratio to dose the amount of rapid-acting insulin you take with meals and snacks gives you more flexibility to eat according to your appetite.

WHAT IS AN INSULIN-TO-CARB RATIO?

- **An insulin-to-carb ratio tells you how much rapid-acting insulin your body needs to “cover” a certain amount of carbohydrate.** This allows you to dose the amount of rapid-acting insulin you need based on the amount of carbohydrate you eat or drink at each meal and sometimes with snacks.
- For example, an insulin-to-carb ratio of **1:20 means that 1 unit of rapid-acting insulin “covers” 20 grams of carbohydrate.**
- **Insulin-to-carb ratios are different for each person with diabetes.** In other words, different people will have different insulin-to-carb ratios. Also, some people might have different insulin-to-carb ratios for different meals and snacks throughout the day. Like other insulin doses, a person’s insulin-to-carb ratio changes over time.

HOW DO I KNOW WHAT MY INSULIN-TO-CARB RATIO IS?

- Your insulin-to-carb ratio will depend on your total daily dose of insulin and/or on how much insulin you currently take with meals.
- **Your diabetes team will help you work out your insulin-to-carb ratio.**

HOW DO YOU USE AN INSULIN-TO-CARB RATIO?

Step 1: Count up the total amount of carbohydrate in your meal or snack.

Step 2: Divide the total amount of carbohydrate eaten by your insulin-to-carb ratio to determine your insulin dose.

Example using an insulin-to-carb ratio of 1:15:

Step 1: (count up the total grams of carbohydrate)

1 cup brown rice -----	45 g carb
½ cup cooked broccoli -----	0 g carb
3 oz pork chop -----	0 g carb
1 cup (250 ml) milk -----	12 g carb
½ cup frozen yogurt -----	+15 g carb
	= 72 g of total carbohydrate

Step 2: (divide by the **insulin-to-carb ratio**)

$$72 \text{ g} \div 15 = 4.8 \text{ units of insulin (those on multiple daily injections can round up to 5.0 units)}$$

YOUR INSULIN-TO-CARB RATIO(S):

Breakfast	_____	Lunch	_____	Supper	_____
AM Snack	_____	PM Snack	_____	Bedtime Snack	_____

PRACTICE USING YOUR INSULIN-TO-CARB RATIO:

Meal: _____ Insulin-to-carb ratio: _____

1. Count up the total amount of carbohydrates you would eat at that meal:

Food/Drink	Grams of Carb
	+
	+
	+
	+
	+
Total Carb:	=

2. Divide the total amount of carbohydrates by your insulin-to-carb ratio to determine the dose of rapid-acting insulin: _____ (total carb) ÷ _____ (insulin-to-carb ratio) = _____ (dose of rapid-acting insulin)

TESTING YOUR INSULIN-TO-CARB RATIO:

- Testing your blood glucose 2 hours after eating will tell you how well your insulin-to-carb ratio is working. See *blood glucose targets below*. Test when the pre-meal blood glucose is in the target range.
- Remember, your insulin-to-carb ratio can change with changes in your body weight and activity levels.
- Allow 2 to 3 days to see the effect of a change to one of your insulin-to-carb ratios before making another.

BLOOD GLUCOSE TARGETS:

Age	Blood Glucose Before Meal (mmol/L)	Blood Glucose 2 Hours After Meal (mmol/L)	
0 – 5 years	6-12	8-12	If blood glucose is above target 2 hours after eating: Use a smaller insulin-to-carb ratio to give more insulin Example: was 1:20; try 1:18 or 1:15 If blood glucose is below target 2 hours after eating: Use a bigger insulin-to-carb ratio to give less insulin Example: was 1:20; try 1:22 or 1:25
6 – 12 years	4-10	7-12	
13 or older	4-7	5-10	

If you have any questions, please call the Diabetes Centre at (902) _____