

# what is an insulin:carb ratio?

Your insulin:carb (i:c) ratio tells you how many grams of carbohydrate 1 unit of insulin will cover.

For example, if your insulin:carb ratio is 1:10 that means that you need to take 1u of insulin for every 10g of carbs that you eat. Some people need a different insulin:carb ratios for each meal because their insulin sensitivity changes throughout the day.

*Remember → basal rates need to be accurate before any adjustments are done to i:c ratios!*

## testing i:c ratios

### test your ratio when:

- you have not had a low blood sugar or hypoglycemia symptoms in the last 4 hrs
- your blood sugar is between 5-10 mmol/L before a meal and you have not eaten in the last 3 hrs or given yourself a bolus in the past 4 hrs
- you are eating a low fat meal that you can reasonably predict the carb content for – try to avoid mixed meals (i.e. casseroles, pasta dishes)

BG before breakfast	carbs (g)	check BG 2 hours later	check BG 4 hours later

BG before lunch	carbs (g)	check BG 2 hours later	check BG 4 hours later

### 3 steps for testing your ratio:

1 | eat enough carbs to challenge your ratio (grams of carbs should be around 1/2 your weight in lbs)

2 | test your blood sugar, enter the grams of carbs into your pump and take the carb bolus no more than 20 min before eating

3 | test your blood sugar **2 hours after** the meal, and **4 hours after** the meal

BG before dinner	carbs (g)	check BG 2 hours later	check BG 4 hours later

*\*stop the test if your blood sugar goes below 4 mmol/l and treat as usual*

## assessing test results

### your i:c ratio is adequate if:

- your blood sugar rises 2 - 3 mmol/L 2 hrs after eating
- 4-5 hours after eating, your blood sugar is within 1.7 mmol/L of your pre-meal blood sugar

### if your blood sugar rises by more than 2-3mmol/L 2 hours after eating:

- you need to use a smaller i:c ratio to give more insulin (decrease the grams of carbs in the ratio)

### if your blood sugar rises by less than 2 mmol/L 2 hours after eating:

- you need to use a larger i:c ratio to give less insulin (increase the grams of carbs in the ratio)

### reasons for unexplained highs or lows:

- was the carb count accurate (or close enough)?
- was the meal an unusually high or low glycemic index meal? (ask your educator about using a combination bolus)
- was it a higher fat or protein meal than usual?
- were you more or less active than usual that day?
- did you have any recent hypoglycemia?
- are your basal rates set properly?
- was the bolus taken early enough before eating?
- were you more or less stressed that day?

*\*Allow 4-7 days to see the effects of a change to your i:c ratio before making another change!*