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
1/2 cup frozen yogurt ------------------- +15 g carb

= 72 g of total carbohydrate

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

72 g ÷ 15 = 4.8 units of insulin (those on multiple daily injections can round up to 5.0 units)
**YOUR INSULIN-TO-CARB RATIO(S):**

<table>
<thead>
<tr>
<th></th>
<th>Breakfast</th>
<th>Lunch</th>
<th>Supper</th>
<th>AM Snack</th>
<th>PM Snack</th>
<th>Bedtime Snack</th>
</tr>
</thead>
</table>

**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:**

<table>
<thead>
<tr>
<th>Food/Drink</th>
<th>Grams of Carb</th>
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<tbody>
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   **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:**

<table>
<thead>
<tr>
<th>Age</th>
<th>Blood Glucose Before Meal (mmol/L)</th>
<th>Blood Glucose 2 Hours After Meal (mmol/L)</th>
<th>If blood glucose is above target 2 hours after eating:</th>
</tr>
</thead>
<tbody>
<tr>
<td>≥ 18 years</td>
<td>4-7</td>
<td>5-10</td>
<td>Use a smaller insulin-to-carb ratio to give more insulin. Example: was 1:20; try 1:18 or 1:15</td>
</tr>
</tbody>
</table>

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

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