Steps for Matching Rapid-insulin to Carbohydrate Intake

Living Well with Your Health Conditions

Step 1: Identify carbohydrate containing foods you will be eating at your meal.

Step 2: Count the available carbohydrate (carbohydrate – fibre) of your meal. See page 3 for Carbohydrate Counting Resources.

Step 3: Calculate your meal bolus. This is the amount of rapid-acting insulin you will need to match the available carbohydrate you are eating. You will need an ICR (insulin to carbohydrate ratio) to figure this out.

⇨ My ICR is __ unit of _____ for ___ grams of available carbohydrate OR each meal may have different ICR:

Breakfast	**1 unit**	**___ g carbohydrate**
Lunch	**1 unit**	**___ g carbohydrate**
Dinner	**1 unit**	**___ g carbohydrate**

Example: If the total carbohydrate at the meal is 60 g, your meal bolus is 60g ÷ _____ (ICR) = _____ units of _____

Step 4: Check your blood glucose before eating (pre-meal blood glucose).

Step 5: Calculate your correction bolus (or correction factor or insulin sensitivity factor).

⇨ My correction bolus is 1 unit of _____ for every _____ mmol/L over my target pre-meal blood glucose

⇨ My target pre-meal blood glucose is _____ mmol/L

Example: If your blood glucose is 13 mmol/L, your correction bolus is 13 – ____ (target) = ____ ÷ ____ (correction bolus) = ____ units of _____

OR my correction scale is:

Pre-meal blood glucose is:	Adjust insulin by:
	- 1 unit
	0 unit
	+1 unit
	+2 units
	+3 units
	+4 units
	+5 units

Step 6: Calculate total rapid insulin dose for the meal
Example: Meal bolus ____+ correction bolus ____ = ____ units of _____

Step 7: Adjust for activity: If you will be exercising within 2 hours after injecting rapid acting insulin, reduce bolus by 50%. If you will be exercising 2 - 3 hours after injecting, reduce bolus by 25%.

Step 8: Inject insulin and eat.

Step 9: Check blood glucose 2 hrs after eating. If blood glucose is _____ mmol/L then the meal bolus and correction bolus taken were correct.

Carbohydrate Counting Resources

Count available carbohydrate in meals using Carbohydrate Choices, Beyond the Basics, food package labels, carbohydrate counting books, recipes that provide nutrition information, restaurant fact sheets or internet sites.

Websites:

1. **British Columbia Children's Hospital, Food and Nutrition Information:** http://www.bcchildrens.ca/Services/SpecializedPediatrics/EndocrinologyDiabetesUnit/ForFamilies/DiabetesHandouts.htm
2. **Calorie King:** http://www.calorieking.com
3. **Canadian Diabetes Association, Beyond the Basics:** http://www.diabetes.ca/for-professionals/resources/nutrition/beyond-basics
4. **Canadian Nutrient File:** http://www.hc-sc.gc.ca/fn-an/nutrition/fiche-nutri-data/cnf_downloads-telechargement_fcen-eng.php
5. **US Department of Agriculture (USDA) Agricultural Research Services, Nutrient Data Laboratory Home Page**: http://www.ars.usda.gov/ba/bhnrc/ndl

Books

1. Borushek, Allan. **The Calorie King Calorie, Fat & Carbohydrate Counter**, 2010.
2. **Canadian Diabetes Association. Beyond the Basics: Meal Planning for Healthy Eating, Diabetes Prevention and Management** (book and poster), www.diabetes.ca, 2007.
3. **Health Canada. Nutrient Value of Common Foods** (order or download): http://www.hc-sc.gc.ca/fn-an/nutrition/fiche-nutri-data/nutrient_value-valeurs_nutritives-eng.php, 2008.
4. Holzmeister, Lea Ann. **The Diabetes Carbohydrate and Fat Gram Guide**, American Diabetes Association, McGraw-Hill, 2010.
5. Natow, Annette and Heslin, Jo-Ann. **The Diabetes Carbohydrate and Calorie Counter**, 3rd ed., Pocket Books, a division of Simon & Schuster, Inc, New York, NT., 2006.
6. Netzer, Corrine. 2005, **The Complete Book of Food Counts**. Dell Publishing. New York.
7. Nolan, Karen and Heslin, Jo-Ann. **The Ultimate Carbohydrate Counter**, Pocket Books, 2010.