



Carbohydrate Counting

Why Count Grams of Carbohydrates?

Ninety-100% of the carbohydrate (**CHO**) you eat converts to sugar (glucose) within 15 minutes to 1.5 hours of ingestion. Only 58% of the protein you eat and less than 10% of the fat you eat are converted into sugar within several hours after consumption. By knowing how much CHO you eat, you can help control your blood sugar [BS] levels.

This technique is helpful even if you are not using insulin. Keeping the CHO intake consistent from meal to meal can help stabilize BS levels.

Even though the amount of CHO you eat and the portion size is important for BS control, eating too much CHO can lead to weight gain, especially if you are taking insulin. Eating a variety of low calorie foods is important for good health and weight control.

Helpful Tips

- If the food label indicates **5g of fiber or more** per serving, deduct this from the total CHO amount since fiber does not directly affect BS values.
- If a **snack** includes 15g or more of CHO, you may need insulin (possibly 1/2 the amount you would normally take). This depends on your BS values.
- Sweet **alcoholic beverages** may require additional insulin. Dry wine, light beer, etc. may be better choices than sweet wine. It is preferable to drink alcohol with food to avoid a low BS. **Avoid alcohol if you are pregnant !**
- **Glycemic Index** for a food - indicates how quickly/how much your BS increases after eating the food. Keep a record of your food intake/BS. This will help you identify which foods are more likely to make your BS levels climb quickly. Other foods consumed, the fiber content, & method of cooking can also affect the glycemic index of a particular food.

Easy Steps to Carbohydrate Counting*1

1. **Identify which foods have carbohydrate:**

Starches Fruits/Juices Vegetables
Milk/Yogurt Sweets

2. **Determine portions of foods you plan to eat:**

For example, measure by volume (1 cup), eight (3 oz) or count (2 each)

3. **Determine grams of CHO of food you plan to eat:**

Review food labels, carbohydrate counting books, exchange lists, etc.

4. **Total the grams of CHO you plan to eat for each meal.**

5. **Start with the factor 15 or use a factor according to your weight.**

Divide the total CHO grams at each meal by your factor. This is how much Regular/Humalog [rapid acting] insulin you will take before you eat. The factor is the number of grams of CHO one unit of Regular/Humalog insulin will cover.

6. **ALWAYS check your BS before you eat.**

If your pre-meal BS is over 150 mg/dl consider 1 additional unit of Regular/Humalog for every 50 points over 150. **If you are pregnant and your pre-meal BS is over 100** use the sliding scale your physician or nurse gives you. You will probably need more insulin for elevated BS.

7. **Give the appropriate amount of insulin for the grams of CHO you plan to eat at the meal plus/minus extra insulin needed based on your BS.**

8. **Record your BS in your log prior to eating the next meal.**

9. **Make any needed adjustments in the factor based upon this blood sugar.**

If your BS is still too high, reduce your factor by several points (more insulin).
If your BS is too low, increase your factor by several points (less insulin).

*1 Examples on Page 3

Easy Steps to Carbohydrate Counting

2 - 4. **FOR EXAMPLE, if you plan to eat:**

	CHO g
2 sl bread (starch)	30
ham, cheese (meat)	0
1 c peach (fruit)	30
1 c pasta (starch)	30
<u>1 c low-fat milk</u>	<u>12</u>
TOTAL	102

2- 5. **102g CHO ÷ 15 [factor] - you should take 6.8 units Regular/Humalog insulin.**

Even if you do not take insulin, being aware of how much CHO you eat at a meal can help control your blood sugars.

2-6. **For example, if your BS is 200 mg/dl you may need 1 additional unit of rapid acting insulin to take care of the pre-meal elevated BS.**

If you are pregnant, consult with your physician or nurse. You will probably need to add more insulin according to a sliding scale designed for you !

2-7. **Give 6.8 units Regular/Humalog insulin for the CHO you plan to eat + 1 unit for the high pre-meal BS. A total of 7.8 units.**

2-8. **Your BS before your next meal should range between 80-140**

If you are pregnant, your pre-meal BS should be <100 and/or <120mg/dl 1 hr after meals.

2-9. **Your factor may vary from meal to meal. You may need more insulin with breakfast.**

FOOD LABEL

e.g. Food Label

Nutrition Facts	
Serving Size 1 cup (252 g)	
Serving Per Container about 2	
<hr/>	
Amount Per Serving	
<hr/>	
Calories 160 Calories from Fat 25	
<hr/>	
% Daily Value	
Total Fat 2.5g	4%
<hr/>	
Saturated Fat 1 g	5%
<hr/>	
Cholesterol 5mg	2%
<hr/>	
Sodium 470mg	20%
<hr/>	
Total Carbohydrate 26g	9%
<hr/>	
Dietary Fiber 4 g	16%
<hr/>	
Sugar 2 g	
<hr/>	
Protein 8g	
<hr/>	

ESTIMATED INSULIN TO CARBOHYDRATE RATIO (FACTOR)
 Based on Weight

WEIGHT IN POUNDS	UNITS: GRAMS CHO
100 - 109	1:16
110-129	1:15
130-139	1:14
140-149	1:13
150-169	1:12
170-179	1:11
180-189	1:10
190-199	1:9
200-219	1:8
220-239	1:7
240+	1:6

E.g.: If you weigh 140 lbs.; 1 unit of Regular/Humalog insulin will cover about 13 grams carbohydrate. Your factor is 13.

Recommended References:

American Diabetes/American Dietetic Associations, 1995, Exchange Lists for Meal PlanningHolzmeister, Lea Ann, 1997, The Diabetes Carbohydrate and Fat Gram Guide. Kraus, Barbara, 1995, Calories and Carbohydrates, 12th Ed.Borushek, Allan, 1999. Gram Guide, The Doctor's Pocket Calorie, Fat & Carbohydrates Counter

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AM MEAL:

FOOD	AMOUNT	CHO GRAMS
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

BS__R/HL INSULIN__FACTOR__ TOTAL____ g

AM SNACK:

NOON MEAL:

FOOD	AMOUNT	CHO GRAMS
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

BS__ R/HL INSULIN__ FACTOR__ TOTAL____g

PM SNACK:

PM MEAL:

FOOD	AMOUNT	CHO GRAMS
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

BS__R/HL INSULIN__FACTOR__ TOTAL____ g

BEDTIME BS _____

BEDTIME SNACK: