

# Calculation Sheet for Insulin Doses



University of Michigan  
C.S. Mott Children's Hospital

Do **NOT** calculate correction dose if:

- Blood glucose less than target
- It has been less than 3 hours since your last dose of rapid-acting insulin
- It has been less than 1 hour since vigorous exercise
- It is bedtime or overnight unless directed to do so

***Don't forget to double check your calculations!***

Date: \_\_\_\_\_ Meal \_\_\_\_\_

1. Calculate Carbohydrate Dose:

$$\frac{\text{Carb to Eat}}{\text{Carbohydrate Ratio}} = \text{Carb Dose}$$

2. Calculate Correction Dose:

$$\frac{\text{Blood Glucose} - \text{Correction Target}}{\text{Correction Factor}} = \text{Amount to Correct} \div \text{Correction Factor} = \text{Correction Dose}$$

3. Calculate Total Insulin Dose:

$$\text{Carb Dose} + \text{Correction Dose} = \text{Total Insulin Dose}$$

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## University of Michigan Pediatric Endocrinology

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## Sources of Sugar (Glucose) for Hypoglycemia

FOOD (Measured in grams carbohydrate)	3 to 5 years (10 g)	AGE 6-10 years (10-15 g)	Over 10 years (15-20 g)
Glucose Tabs (4 g each – check label as some = 5 g)	2	3-4	4-5
Dex4® Glucose Bits (1 g each)	10 bits	10 – 15 bits	15 - 20 bits
Glucose Gel * (check label – 15 g or 24 g/tube or packet)	2/3 tube or packet ½ tube	2/3 or 1 tube or packet ½ to 2/3 tube	1 tube or packet 2/3 to 1 tube
Glucose Liquid/Gluco Shots (15 g per bottle)	2/3 bottle	2/3 to 1 bottle	1 bottle
Cake gel (1 small tube may be 12 g, but check label)	1 tube	1 tube	1-2 tubes
Apple or orange or cranberry juice (1/2 cup = 15 g)	1/3 cup	1/3 to ½ cup	½ to 2/3 cup
Grape juice (1/3 cup = 15 g) check label	1/4 cup	¼ to 1/3 cup	1/3 to ½ cup
Sugar (1 teaspoon = 4 g)	2 tsp	3-4 tsp	4-5 tsp
Honey (1 teaspoon = 5 g; Do not use if child is less than 2 years old)	2 tsp	2-3 tsp	3-4 tsp
Regular pop (soda) (1 ounce = 3 g)	3 ounces	4-5 ounces	5-6 ounces
Milk – skim, ½% or 1% (12 g/cup)	¾ cup	1 cup	1 ½ cup
LIFE-SAVERS®	4	4-6	6-8
Skittles®	10 pieces	10-15 pieces	15-20 pieces
Sweet Tarts® (1.7 g each)	6 pieces	6-8 pieces	8-12 pieces
Raisins (1 Tbsp = 7 ½ g)	1-2 Tbsp	2 Tbsp	2 ½ Tbsp
Smarties® (6 g per roll)	1 ½ rolls	1 ½ to 2 ½ rolls	2 ½ to 3 rolls

g = gram; tsp = teaspoon; Tbsp = Tablespoon

\* Glucose15™ has 15 g carb/tube; Insta-Glucose® has 24 grams carb per tube; and  
 GlucoBurst® has 15 g carbohydrate per packet

Adapted from *Understanding Diabetes: A handbook for people who are living with diabetes*, 12<sup>th</sup> edition by H Peter Chase, MD and  
 David M Maah, MD, PhD

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 Final July 2013 Reviewed at DC/TR meeting 6/18/13



# Hypoglycemia (Low Blood Glucose)

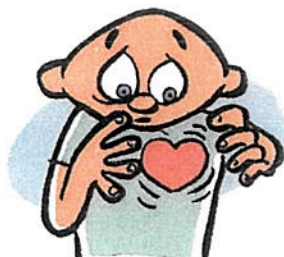
## Some Symptoms:

**Causes:** Too little food or skipping a meal; too much insulin or diabetes pills; more active than usual.

**Onset:** Often sudden.



SHAKY



FAST  
HEARTBEAT



SWEATING



DIZZY



ANXIOUS



HUNGRY



BLURRY VISION



WEAKNESS OR FATIGUE



HEADACHE



IRRITABLE

IF LOW BLOOD GLUCOSE IS LEFT UNTREATED, YOU MAY PASS OUT AND NEED MEDICAL HELP.

## What Can You



**CHECK** your blood glucose, right away. If you can't check, treat anyway.



**TREAT** by eating 3 to 4 glucose tablets or 3 to 5 hard candies you can chew quickly (such as peppermints), or by drinking 4-ounces of fruit juice, or 1/2 can of regular soda pop.



**CHECK** your blood glucose again after 15 minutes. If it is still low, treat again. If symptoms don't stop, call your healthcare provider.

For more information, call the Novo Nordisk Tip Line at 1-800-260-3730 or visit us online at [ChangingDiabetes-us.com](http://ChangingDiabetes-us.com).

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Concept developed by Rhonda Rogers, RN, BSN, CDE



# Hyperglycemia (High Blood Glucose)

**Causes:** Too much food, too little insulin or diabetes pills, illness, or stress.

**Onset:** Often starts slowly.

## Some Symptoms:



EXTREME THIRST



NEED TO  
URINATE OFTEN



DRY SKIN



HUNGRY



BLURRY  
VISION



DROWSY



SLOW HEALING WOUNDS

HIGH BLOOD GLUCOSE MAY LEAD TO A MEDICAL EMERGENCY IF NOT TREATED.

## What Can You Do?



CHECK BLOOD GLUCOSE

If your blood glucose levels are higher than your goal for three days and you don't know why,

**CALL YOUR  
HEALTHCARE PROVIDER**



For more information, call the Novo Nordisk Tip Line at 1-800-260-3730 or visit us online at [ChangingDiabetes-us.com](http://ChangingDiabetes-us.com).

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# Reading Food Labels

Nutrition Facts on food labels can help you with food choices. Food labels are based on standard serving sizes. However, standard serving sizes may not always be the same as the serving choices in this booklet.

- Check the serving size on the label. Is it about the same size as the food choice in this booklet? If not, change the size of your serving to fit your meal plan.
- Look at the grams (g) of total carbohydrate in 1 serving size. You may need to change the size of your serving so it has the number of carbohydrate choices you have planned for a meal or a snack. (One starch, fruit, milk, or carbohydrate choice has about 15 grams of carbohydrate.) The grams of dietary fiber and sugars are part of the total carbohydrate.
- Look at the grams of total fat in 1 serving. (One fat choice has 5 grams of fat.)
- Look at the number of calories and grams of total carbohydrate in 1 serving. A free food has less than 20 calories and 5 grams or less of carbohydrate per serving. If a food has 20 or more calories per serving, count the food choice.
- Ask your registered dietitian for help using information on food labels.

In the label example shown here, 1 serving of chili with beef and beans counts as 1½ carbohydrates (or 1 starch + 1 vegetable) + 2 lean meats + 1 fat.

If a food contains more than 5 grams of fiber, subtract half the grams of fiber from the total carbohydrate grams to get the grams of carbohydrate that count in 1 serving.

If a food contains more than 5 grams of sugar alcohols, subtract half the grams of sugar alcohol from the total carbohydrate grams to get the grams of carbohydrate that count in 1 serving.

Ingredients: water, tomato puree (water, tomato paste), seasoned beef crumbles (beef, salt, spice extracts), diced tomatoes in tomato juice, red kidney beans, kidney beans. Contains less than 2% of the following ingredients: concentrate (caramel color added), jalapeno peppers, salt, dehydrated onions, sugar, dehydrated garlic, paprika, red pepper, soybean oil, soy lecithin, mono and diglycerides, mixed tocopherols, ascorbic acid, flavoring.

Nutrition Facts			
Serving Size 1 cup (240 mL)			
Servings Per Container about 2			
Amount Per Serving			
Calories 230		Calories from Fat 70	
		% Daily Value*	
Total Fat	8g		12%
Saturated Fat	3.5g		18%
Trans Fat	0.5g		
Cholesterol	30mg		10%
Sodium	870mg		36%
Total Carbohydrate	25g		8%
Dietary Fiber	8g		32%
Sugars	11g		
Sugar Alcohol	0		
Protein	15g		
Vitamin A	10%	Vitamin C	2%
Calcium	4%	Iron	10%
*Percent Daily Values are based on a 2,000 calorie diet. Your Daily Values may be higher or lower depending on your calorie needs.			
	Calories:	2,000	2,500
Total Fat	Less than	65g	80g
Sat Fat	Less than	20g	25g
Cholesterol	Less than	300mg	300mg
Sodium	Less than	2,400mg	2,400mg
Total Carbohydrate		300g	375g
Dietary Fiber		25g	30g
Calories per gram:			
Fat	9	Carbohydrate	4 • Protein 4



# Reading Food Labels

## Nutrient Content Claims

The health claims printed on food and drink packaging are regulated by the Food and Drug Administration and must meet certain guidelines. Here are definitions of some popular claims:

- **Reduced-fat** means the food or drink has at least 25% less fat per serving than a comparable regular food or drink.
- **Low-fat** means the food or drink has 3 grams or less fat per serving.
- **Fat-free** means the food or drink has less than  $\frac{1}{2}$  gram fat per serving.
- **Light** can mean the food or drink has at least  $\frac{1}{3}$  fewer calories per serving than a comparable regular food or drink. **Or**, it can mean the food or drink has at least 50% less fat per serving than a comparable regular food or drink.
- **Sugar-free** means the food or drink has less than  $\frac{1}{2}$  gram sugar per serving.
- **Reduced-calorie** means the food or drink has at least 25% fewer calories per serving than a comparable regular food or drink.
- **Trans fat-free** means the food or drink has less than  $\frac{1}{2}$  gram *trans* fat per serving. (Note: The Nutrition Facts label will list 0g [zero grams] *trans* fat for any food with less than  $\frac{1}{2}$  gram *trans* fat per serving. To know whether a food has any *trans* fat, check the ingredients list. If the ingredients include hydrogenated or partially hydrogenated oil, the food contains some *trans* fat—regardless of the labeling claim.)

## Tips for Sugar Alcohols

Read food labels carefully to find out if a product contains sugar alcohols. Look for the words maltitol, lactitol, sorbitol, xylitol, mannitol, hydrogenated starch hydrolysate, isomalt, and glycerol.

- Foods with sugar alcohols can affect blood glucose. Check your blood glucose when consuming foods with sugar alcohols to note their effect on you.
- Sugar alcohols may have a laxative effect, especially in children.