

This packet has important information to get you started on your journey with diabetes and to keep you healthy and safe. Each person's health is unique. If you have any questions about this information, please ask your health care providers.

In order to get the complete national standards for diabetes education, which includes 10 hours of comprehensive care, ask your doctor about attending a program at California Pacific Medical Center. You can also find a certified diabetes educator in your area by calling 1-800-TEAM-UP4 (1-800-832-6874).

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**An appointment has been made for you:**

with \_\_\_\_\_  
on \_\_\_\_\_ at \_\_\_\_\_ am / pm

**Go to: The Center for Diabetes Services**

3801 Sacramento Street, 7<sup>th</sup> floor  
San Francisco, CA 94118  
(415) 600-0506

- Please tell us if you are unable to keep this appointment.
- Please bring your blood sugar (glucose) records and meter if you have one. It also helps if you bring a 3-day food record and a list of all medications you are currently taking.

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**Or**

Call to make an appointment at:

**St. Luke's Hospital Diabetes Center**  
3555 Cesar Chavez Street, Room 230  
San Francisco, CA 94110  
(415) 641-6826

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**Or**

Ask your health care provider to refer you to a diabetes education program.

**Note:** This information is not meant to replace any information or personal medical advice you get directly from your health care provider(s). If you have any questions about this information, such as the risks or benefits of the treatment listed, please ask your health care provider(s).

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## What Is Diabetes?

Diabetes is a condition where the body is unable to use sugar (also called *glucose*) normally. Your body is made of millions of cells that need glucose for energy. Glucose comes from the foods you eat. Your blood carries glucose to the cells in your body. A hormone called *insulin* helps glucose enter the cells where it can be used or stored for energy. If the glucose can not get into the cells, it builds up in the blood.

When you have diabetes the amount of glucose in your blood becomes higher than normal. Your blood always has some glucose in it to provide your body with energy. However, too much glucose in the blood is not healthy.

### Diabetes occurs for one of the following reasons:

- The body does not make enough insulin (called *insulin deficiency*).
- The body can not use insulin properly (called *insulin resistance*).
- The body does not make enough insulin **and** can not use insulin properly.

## Different Hormones Affect Blood Glucose Levels

The body relies on many different hormones to keep blood glucose levels in balance.

**Hormones that lower blood glucose** include insulin, amylin and glucagon-like peptide-1 (GLP-1). Insulin and amylin are both made in the *pancreas*, a gland located behind the stomach. GLP-1 is made by the small intestine.

**Hormones that increase blood glucose** include glucagon, cortisol and epinephrine. Glucagon is made by the pancreas, while cortisol and epinephrine are both made by the adrenal glands (located above the kidneys). These hormones are often referred to as the “stress” hormones.

## Signs and Symptoms of Diabetes

Before being diagnosed with diabetes, you may or may not experience some of the signs and symptoms of high blood glucose. Symptoms may include:

- Frequent urination
- Increased thirst
- Increased appetite
- Unexplained weight loss
- Dry, itchy skin
- Tiredness
- Poor wound healing
- Tingling of the hands or feet
- Blurry vision
- Frequent infections

## Different Types of Diabetes

- **Type 1** diabetes develops when the body's immune system destroys the cells of the pancreas where insulin is made, causing insulin deficiency. People diagnosed with type 1 diabetes need insulin (shots) in order to live.
- **Type 2** diabetes is the most common form of diabetes. About 90% of people with diabetes have type 2. It usually starts with the cells not being able to use insulin properly. Eventually, the cells of the pancreas get tired and start to make less insulin. People diagnosed with type 2 diabetes may need medications (pills) and/or insulin.
- **Gestational** diabetes occurs in about 4% of all pregnancies. During pregnancy, the mother's blood carries glucose to the baby through the placenta. Hormones released by the placenta can increase insulin resistance which causes high blood glucose. Some women's bodies do not make enough insulin to control higher glucose levels. While it is the mother who has diabetes and not the baby, pills or insulin may be necessary to help control the glucose levels of the mother and fetus. Gestational diabetes usually goes away after birth when these hormones are no longer present. However, the risk is higher for these women to get diagnosed with type 2 diabetes within 10 years. For more information about diabetes and pregnancy, you can contact the CPMC Diabetes and Pregnancy Program (DAPP) at 415-600-6388.
- **Pre-Diabetes** occurs when the blood glucose is higher than normal but not high enough to be considered diabetes. A person with pre-diabetes is more at risk for developing type 2 diabetes. Increasing physical activity, losing weight, and eating a healthy diet may delay or prevent the onset of type 2 diabetes.
- **Other** forms of diabetes are less common. They may include medical conditions of the pancreas or be caused by medications that prevent the body from using insulin properly (for example, steroid use). Pills or insulin may also be required to control blood glucose levels.

Steroids (for example, Prednisone<sup>®</sup>, Solumedrol<sup>®</sup> and Decadron<sup>®</sup>) treat certain conditions, like asthma, skin conditions and inflammatory bowel disease, and are used with some surgeries (for example, to prevent rejection of transplanted organs). Steroids also increase insulin resistance and prevent the body's insulin from working properly. Over time, your doctor may decrease the amount of steroid medications you need. Therefore, it is important to be in close contact with your doctor to report your glucose levels so medications may be adjusted.

## Risk Factors for Type 2 Diabetes

It is not always clear why people get diabetes. Some things that may put you at greater risk for developing diabetes are:

- Not exercising / physical inactivity
- Having a close relative with diabetes (family history)
- Being overweight
- Being a member of a high-risk ethnic group — Hispanic/Latino, African American, Asian, Pacific Islander or Native American
- Having diabetes during pregnancy and/or giving birth to a baby weighing more than nine pounds
- Having high blood pressure, greater than 140/90 mmHg
- Having high blood levels of triglycerides, 250 mg/dL or more
- Having low blood levels of high density lipoproteins (HDL), under 35 mg/dL
- Being diagnosed with pre-diabetes
- Being older than 45 years
- Smoking



## Diagnosing Diabetes

Diabetes is diagnosed by measuring how much glucose is in your blood in one of two ways:

1. A **fasting** test measures the glucose in your blood first thing in the morning after no food or calorie-containing drinks for at least 8 hours.
2. A **non-fasting** (or random) test measures the glucose in your blood at any time during the day, regardless of what you eat or drink.

Fasting or non-fasting blood test results fall into one of three groups:

**Normal** blood glucose levels are:

- Less than 100 mg/dL, fasting
- Less than 140 mg/dL, non-fasting

**Pre-diabetes** blood glucose levels are:

- 100 - 125 mg/dL, fasting
- 140 - 199 mg/dL, non-fasting

**Diabetes** blood glucose levels are:

- 126 mg/dL or more, fasting, on more than one occasion
- 200 mg/dL or more, non-fasting with symptoms

As of 2008, about 24 million Americans have diabetes. Most people with diabetes have type 2. Talk to your health care provider about the type of diabetes you have.



## Your Hospital Stay and Beyond

Conditions such as stress, illness, injury, trauma, or surgery may make it more difficult to manage your blood glucose. While diabetes may not be the reason you were admitted into the hospital, keeping your blood glucose under control will help you recover.

In the following pages, we cover the basic skills needed to manage your diabetes both in the hospital and at home.

## Basic Skills for Managing Your Diabetes

Getting diagnosed or dealing with diabetes in the hospital can be overwhelming. With the right amount of information and support, you have the tools necessary to control the disease. Your health care providers and diabetes educators will work with you to maximize your health.

Diabetes is self-managed. Throughout this guide, you will find the seven self-care behaviors as defined by the American Association of Diabetes Educators, along with symbols to represent the behavior as described below. Each section has detailed self-care information.



**Healthy Eating**



**Being Active**



**Monitoring**



**Taking Medications** (includes all types)



**Problem Solving** (when blood glucose is too low or too high)



**Reducing Risks** (through routine preventative care measures)



**Healthy Coping**



# Healthy Eating

## What Can I Eat?

Many people think that having diabetes requires a special diet. The diabetes diet, however, is a healthy, enjoyable one, and suitable for the entire family. Learning what you can eat and how different foods affect your body is important. Although food is not the only factor that raises glucose, your food choices have a significant impact on your glucose, cholesterol, blood pressure and, of course, your overall health.

This section covers the basic principles of good nutrition. For a tailored plan, consult a dietitian-certified diabetes educator, or call the Center for Diabetes Services at 415-600-0506.

## What Foods Turn Into Glucose?

Carbohydrate turns into glucose. Sugars and starches are the carbohydrates in our diet. These foods are our main source of energy. Too much carbohydrate in the diet can raise your blood glucose levels too high. It is important to limit your total carbohydrate intake at each meal.

## What are Some Examples of Foods that Contain Carbohydrate?

Rice	Fruits	Pretzels/Popcorn	Potato*
Lentils	Fruit juices	Pasta/Noodles	Yams*
Dried beans	Sugar/honey	Crackers	Peas*
Milk	Desserts	Bread	Corn*
Yogurt	Sodas	Cereals	Lima beans*

\*These vegetables are starchy and raise blood glucose.

Note: High fiber food choices are encouraged (for example, whole grain breads and cereals; fresh fruits and vegetables; beans and legumes).



## General Nutrition Recommendations

1. Include carbohydrate in every meal and snack. Be sure to spread your carbohydrate intake evenly throughout the day. Use the **Sample Meal Plan** as your portion guide.
2. Do not skip meals. Even distribution of food helps prevent high and low blood glucose.
3. Eat 3 meals a day, plus snacks as needed. Eating at regular intervals helps control hunger and prevents overeating at the next meal.
4. Time your food intake to the action of your diabetes medication.

## What Other Things Can I Do to Improve My Healthy Eating?

1. **Eat a Well Balanced Diet with a Variety of Foods at Each Meal:** For example, there is no limit on vegetables and green salads. These foods are filling, nutritious, contain dietary fiber and raise blood glucose very little. Also, be sure to include moderate amounts of low-fat protein. Protein helps to control hunger between meals.

### Protein examples:

- **Poultry:** chicken or turkey (white meat, no skin)
  - **Fish:** cod, flounder, trout, tuna, salmon, catfish, sardines
  - **Lamb:** roast, chop, leg
  - **Shellfish:** clams, crab, lobster, scallops, shrimp
  - **Beef:** sirloin, round, flank steak, lean ground beef
  - **Other:** egg whites, low-fat cottage cheese, cheeses (less than 3 grams of fat per ounce), tofu, dried beans and lentils
  - **Alternative proteins:** nuts, nut butter (Note: these sources are high in fat)
2. **Limit Your Intake of Fat, Especially Animal Fat:** Fat does not raise blood glucose, but can lead to being overweight. Excess body weight can raise blood glucose. A high-fat diet also increases your risk of heart disease.

### High-Fat Foods

High-fat meats	Skin on poultry	Chips
Sausages, luncheon meats	Crackers	Whole milk
All fried foods	Refried beans	Cheeses
Pastries, cookies		

## Fats Added to Foods

Butter, margarine

Cream cheese

Cream, half & half

Salad dressings, oil

Gravies, cream sauces

Sour cream

**Use Healthful Fats:** Do not aim for a "fat free" diet. A small amount of fat at each meal makes it tastier and helps to control hunger between meals. Choose monounsaturated fats, such as olive oil, peanut oil, canola oil, olives, nuts, seeds and avocado.

- 3. Be Careful with Alcohol:** Drink alcohol only when your diabetes is controlled and with your health care provider's approval. Drink in moderation, not more than one drink a couple of times a week, and never on an empty stomach. Alcohol can interfere with some diabetes medications and insulin and put you at risk for low glucose.
- 4. Reduce Your Sodium Intake:** A low sodium diet may help to control your blood pressure. Be aware of foods with high sodium content such as canned goods, cured or pickled foods and seasonings (soy sauce, garlic salt). A 'low sodium' item has under 140 mg of sodium per serving. The American Heart Association recommends having less than 2300 mg of sodium total per day.



## Carbohydrates (CHO) Food Choices

The food choices listed below contain carbohydrate that turns into glucose during digestion. Be sure to check specific food labels as individual brands vary.

Foods with carbohydrate should be eaten in appropriate amounts and distributed throughout the day. **One carbohydrate choice equals 15 grams of carbohydrate (CHO).**

- For women, choose 2 - 3 carbohydrate choices (30 - 45 grams) per main meals.
- For men, choose 3 - 4 carbohydrate choices (45 - 60 grams) per main meals.

### Breads 15 grams CHO



French bread	1 oz
Matzo	¾ oz
White, whole wheat, rye (1 oz)	1 slice
Bread sticks (4 inch)	2
Bagel, English muffin (small)	½
Hot dog or hamburger bun	½
Croissant (small)	1
Muffin (small)	½
Pancake/waffle (4 inch)	1
Pita	½
Roll (plain)	1
Fruit breads (e.g., banana)	1 oz slice
Tortilla (6 inch)	1
Stuffing	⅓ cup
Croutons	1 cup

### Cereals 15 grams CHO



Bran cereal	½ cup
Granola	¼ cup
Cooked cereal	½ cup
Other unsweetened dry cereals	¾ cup
Sugar frosted cereal	½ cup
Puffed cereal	1 ½ cup

### Fruits 15 grams CHO



Apple, orange, tangerine, pear, peach (small)	1
Fruit juice (unsweetened)	½ cup
Applesauce (unsweetened)	½ cup
Apricots (medium, fresh)	4
Apricot (dried halves)	7
Banana	4 inches
Blackberries, blueberries	¾ cup
Cantaloupe (small)	⅓ melon
Honeydew (small)	⅙ melon
Watermelon	1 ¼ cup
Cherries (fresh)	14
Figs	2
Plums	2
Canned fruit (unsweetened)	½ cup
Grapefruit (large)	½
Grapes	15
Kiwi (large)	1
Pineapple (fresh)	¾ cup
Mango/papaya (small)	½
Prunes (medium)	3
Raisins	2 Tbsp
Strawberries	1 ¼ cup
Persimmon (medium)	½
Pomegranate (medium)	⅔
Cherimoya	⅙
Plantain	½ cup
Guava (medium)	1
Cactus fruit	1
Raspberry	1 cup

**S** = Check food label and check sodium content.

**NOTE:** For canned or boxed foods, read all food labels and check sodium content.

**Vegetables/Beans**  
15 grams CHO



Yams/sweet potatoes (fresh)	½ cup
Beans (kidney, pinto, black eyed peas, cooked)	½ cup
Baked beans (canned) <b>S</b>	⅓ cup
Corn, hominy, peas	½ cup
Potato (small)	1
Mashed potato	½ cup
Hash brown	½ cup
Winter squash	1 cup
Butternut squash	½ med.
Lima beans	½ cup
Taro/lotus root	⅓ cup
Hummus	⅓ cup
Mung beans	½ cup
Edamame (soybeans)	⅔ cup
Miso <b>S</b>	3 Tbsp

**Soups**  
15 grams CHO



Rice soup	¾ cup
Beef barley	¾ cup
Chicken & rice/noodle	1 cup
Bean, lentil, chickpeas	½ cup
Cream (with milk)	1 cup
Minestrone	½ cup
Tomato	½ cup
Pelmini	⅓ cup

**Crackers/Snacks**  
15 grams CHO



Animal crackers	8
Graham cracker squares	3
Popcorn <b>S</b>	3 cups
Round crackers <b>S</b>	4 - 6
Pretzels <b>S</b>	¾ oz
Snack chips (about 11 chips) <b>S</b>	1 oz
Saltine type crackers <b>S</b>	6
Rice cakes (4 inch)	2
Sandwich crackers (cheese/peanut butter)	3
Fortune cookies (small)	2

**Other Carbohydrates**  
15 grams CHO



Cake (no icing), 2 inches square	1 slice
Cookies (small)	2
Custard	½ cup
Doughnut (plain)	1
Frozen fruit yogurt (fat free)	⅓ cup
Energy bar (medium)	½
Ice cream/ice milk	½ cup
Fudgsicle	1
Fruit spread (100% fruit)	1 Tbsp
Gelatin (regular)	½ cup
Pudding (regular)	⅓ cup
Pudding (sugar-free)	½ cup
Spaghetti sauce (canned) <b>S</b>	½ cup
Sugar/honey	1 Tbsp

**Milk/Yogurt**  
13 - 17 grams CHO



Skim, 2%, whole, buttermilk	1 cup
Evaporated skim milk	½ cup
Dry milk, nonfat powder	½ cup
Yogurt (plain)	1 cup
Yogurt (artificially sweetened)	1 cup
Sweetened soy milk (with calcium)	1 cup

**Pasta/Grains**  
15 grams CHO



Cellophane noodles	½ cup
Sushi (California Roll)	4 pieces
Polenta	½ cup
Grits	½ cup
Gnocchi	2 small
Couscous	½ cup
Wonton	5
Pasta, macaroni	⅓ cup
Rice	⅓ cup
Millet, buckwheat, bulgar	⅓ cup
Udon	⅓ cup
Tortellini	⅓ cup

**S** = Check food label and check sodium content.

NOTE: For canned or boxed foods, read all food labels and check sodium content.

## Sample Menu

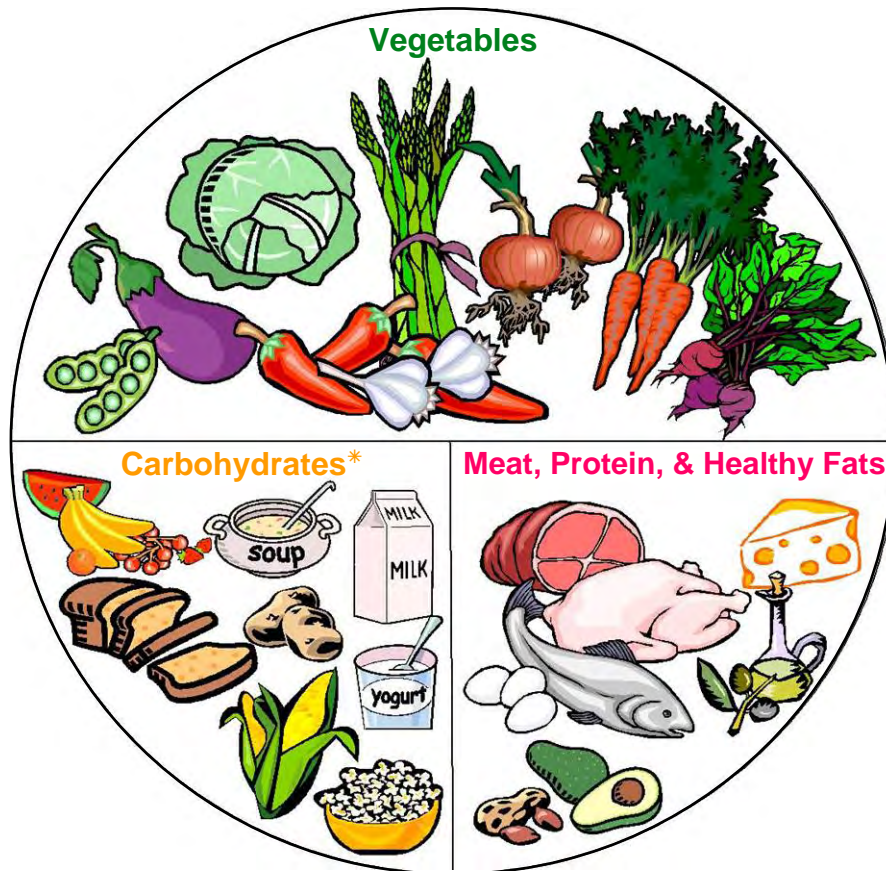
		<b>TOTAL CARBOHYDRATE</b>
<b><u>BREAKFAST</u></b>		
<b>7 AM</b>	1 small orange <u>or</u> ½ banana	15 gm
	2 slices whole grain bread <u>or</u> 1 whole English muffin	<u>30 gm</u>
	1 egg/egg substitute <u>or</u> 1 - 2 oz low-fat cheese/ham/turkey	<b>45 gm Total</b>
	1 Tbsp margarine	
	Coffee <u>or</u> tea <u>or</u> water	
<b><u>SNACK</u></b>		
<b>9:30 AM</b>	8 oz nonfat <u>or</u> low-fat milk <u>or</u>	<b>15 gm</b>
	1 small fruit <u>or</u> ½ sandwich	
<b><u>LUNCH</u></b>		
<b>12 PM</b>	2 slices bread <u>or</u> 2 corn tortillas <u>or</u> ⅔ cup rice <u>or</u>	30 gm
	1 medium potato	<u>15 gm</u>
	8 oz 1% low-fat milk <u>or</u> 1 small fruit	<b>45 gm Total</b>
	3 - 5 oz meat, chicken <u>or</u> fish (not fried or breaded)	
	Vegetable and/or green salad (no limit)	
	1 tsp mayonnaise <u>or</u> vinaigrette dressing (if desired)	
	Diet soda, coffee <u>or</u> tea <u>or</u> water	
<b><u>SNACK</u></b>		
<b>3 PM</b>	1 cup light yogurt (with sugar substitute) <u>or</u>	<b>15 gm</b>
	8 oz low-fat milk <u>or</u> 6 crackers or small fruit	
<b><u>DINNER</u></b>		
<b>6 PM</b>	⅔ cup pasta <u>or</u> ⅔ cup rice <u>or</u>	30 gm
	1 medium potato	<u>15 gm</u>
	8 oz low-fat milk <u>or</u> small fruit	<b>45 gm Total</b>
	3 - 5 oz fish, meat <u>or</u> chicken (not fried or breaded)	
	1 - 2 cups vegetables (carrots, broccoli, cauliflower, bok choy, pepper, spinach)	
	Salad greens with low-fat dressing (if desired)	
	Diet soda, coffee <u>or</u> tea <u>or</u> water	
	1 Tbsp sour cream or diet margarine	
<b><u>SNACK</u></b>		
<b>8:30-9 PM</b>	1 small fruit with ½ cup cottage cheese	<b>15 gm</b>
	<u>or</u> ½ sandwich <u>or</u> 8 oz low-fat milk <u>or</u> 1 cup light yogurt (with sugar substitute)	

**Note:** Meals and snacks should be at least 2 ½ - 3 hours apart.

*This is an example only. Individual needs vary greatly and are influenced by many factors.*

# Planning Your Meal with the Plate Method

The Plate Method is a visual method designed to make meal planning easy. Use this diagram with the **Food Guide for Meal Planning** on the next page.



## Vegetables

Fill half ( $\frac{1}{2}$ ) of your plate with salad, leafy greens (raw or cooked)

## Carbohydrates\*

Fill a quarter ( $\frac{1}{4}$ ) of your plate with carbohydrates

- For women: include 2 - 3 choices = 30 to 45 grams of carbohydrate
- For men: include 3 - 4 choices = 45 to 60 grams of carbohydrate

\* For snacks between meals, choose 1 carbohydrate choice (for example, 1 medium apple, or 1 artificially sweetened yogurt, or 3 cups popcorn)

## Protein

Fill a quarter ( $\frac{1}{4}$ ) of your plate with protein: include 3 - 6 ounces  
(3 ounces = 1 deck of poker cards)

## Fats and Oils

Include 1 - 3 teaspoons of healthy fats and oils. Choose mono-unsaturated (olive, peanut or canola oil) or fats high in Omega 3s (fish oils).

# Food Guide for Meal Planning

## Carbohydrates

Carbohydrates are the main source of energy for your body.

Foods with carbohydrate raise your blood glucose levels the most. Do include \_\_\_\_\_ carbohydrate choices (see list below) at each main meal (breakfast, lunch & dinner) and 1 carbohydrate choice for between-meal snacking: 1 carb choice = 15 grams of carb

### Starch/Bread Group

1 slice (1 oz) bread	2 (4 inch) breadsticks
½ cup oatmeal, cooked	½ English muffin
½ cup rice, cooked	3 oz (small) potato
½ cup noodle, macaroni	½ cup yams
½ cup corn or peas	1 - 4 inch pancake
½ cup dry cereal	1 - 6 inch tortilla
1 cup kidney beans	1 cup croutons
½ small muffin	3 graham crackers
	3 cups popcorn

### Fruit Group

1 small orange	1 cup strawberries
½ medium grapefruit	½ cup canned fruit
1 medium apple/pear/peach	¾ cup pineapple
12 grapes	2 Tbsp raisins
4 inches banana	½ small mango
½ cup applesauce	4 kumquats
1 small peach	½ medium papaya
⅓ small cantaloupe	1 ¼ cup watermelon
6 medium red dates	14 cherries
1 large kiwi	3 medium prunes
2 plums	2 figs

### Milk Group

8 oz milk	
8 oz soymilk	1 cup yogurt, artificially sweetened

## Protein

Protein helps build tissues and muscles.

These do not raise blood glucose.

Meats should be baked/ broiled and visible fats removed.

Do include about 3 oz lean protein into each main meal:

cheese	fish	seafood	tofu
chicken	nuts	soybeans	turkey
eggs	pork	sirloin beef	

## Fats and Oils

These do not raise blood glucose, but may raise cholesterol:

butter	oil
mayonnaise	margarine

These may lower cholesterol:

avocado	nuts	seeds
canola oil	olive oil	

## Vegetables

Vegetables are usually high in fiber and have little effect on your blood glucose. Include in every meal:

artichoke	eggplant	salad greens
asparagus	kale	spinach
beets	lettuce	summer squash
broccoli	mushrooms	tomatoes
cabbage	mustard green	turnip or daikon
carrots	okra	watercress
cauliflower	onions	zucchini
cucumber	peapods	

# Understanding a Food Label

The **two** most important pieces of information for the carbohydrate-controlled diet are:

1. The serving size.
2. The grams of total carbohydrate.

Nutrition Facts	
Serving Size 1 cup (228g)	
Servings Per Container 2	
Amount Per Serving	
Calories 90	Calories from Fat 30
% Daily Value*	
<b>Total Fat</b> 3g	5%
Saturated Fat 0g	0%
<b>Cholesterol</b> 0mg	0%
<b>Sodium</b> 300mg	13%
<b>Total Carbohydrate</b> 13g	4%
Dietary Fiber 3g	12%
Sugars 3g	
<b>Protein</b> 3g	
<b>Vitamin A</b> 80%	<b>Vitamin C</b> 60%
<b>Calcium</b> 4%	<b>Iron</b> 4%
* 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
<b>Total Fat</b>	Less than 65g 80g
<b>Sat Fat</b>	Less than 20g 25g
<b>Cholesterol</b>	Less than 300mg 300mg
<b>Sodium</b>	Less than 2,400mg 2,400mg
<b>Total Carbohydrate</b>	300g 375g
<b>Dietary Fiber</b>	25g 30g
<b>Calories per gram:</b>	
Fat 9 • Carbohydrate 4 • Protein 4	

## First: Check Serving Size

- The serving size for this food is 1 cup.
- There are 2 servings or 2 cups in this container.

## Second: Count Total Carbohydrate Content

- The Total Carbohydrate tells how many grams of carbohydrate are in 1 serving size. 15 grams of carbohydrate is equal to 1 carbohydrate choice (so 1 serving of this is equal to about 1 carbohydrate choice).
- Fiber is also included in the total carbohydrate amount.
- Sugar is already included in the total carbohydrate amount. This value shows the total amount of both natural and added sugars.



# Being Active

## Why is Exercise so Important for People with Diabetes?

Exercise can lower blood glucose levels. It also helps to control weight, blood pressure and cholesterol. In addition, exercise can reduce stress and depression, and help improve sleep. If you are in the hospital, you may not be able to exercise until after you recover. Being active is the cornerstone of diabetes management and overall health.

Most of your body's resistance to the available circulating insulin occurs at the muscular level. By working your muscles, you will reduce insulin resistance; this helps you use insulin more efficiently (whether it is your own insulin or insulin taken by injection). Keep in mind that every little bit helps. Walking 30 minutes a day, in addition to a healthy diet, has shown positive results in preventing and controlling diabetes.

## Before You Start

Check with your health care provider if you have any activity restrictions (for example, those with uncontrolled high blood pressure are cautioned not to lift weights). Choose an exercise routine you enjoy. Set realistic goals and make a plan. Start slowly, build up, and monitor how it affects your blood glucose. Make it a family or friend event and go together!

## What are Safety Issues I Need to Know About?

If you are taking certain diabetes medications, including insulin, you will need to carry a form of fast-acting sugar with you to prevent low blood glucose. Also, make sure you:

- wear comfortable socks and shoes
- stay hydrated
- bring your cell phone if you have one
- consider wearing a medical alert bracelet (call 1-888-633-4298 to request a catalogue)
- have a snack available if you plan to exercise more than 30 minutes

## Why is it Important to Maintain or Attain Optimal Weight?

Reducing body fat improves blood glucose control. Weight control also decreases your risk for heart disease and high blood pressure. If you are overweight, set a realistic weight loss goal (about 10 - 15 pounds to begin with, over the course of three months). Allow a reasonable time to reach your goal. Do not lose more than 2 pounds per week.



# Monitoring

Regularly checking your blood glucose tells you how food, exercise, medication or illness affects your diabetes. Knowing this helps you better control your blood glucose levels.

There are two different tests to check your blood glucose:

- Self-monitoring blood glucose test
- A1C blood test

## Self-Monitoring Blood Glucose

In order to test your blood glucose you need a blood glucose meter, test strips, and lancets (needles used to poke your finger). Using a small drop of blood from your finger, the meter tells you how much glucose is in your blood at the time of the test. Health insurance plans usually cover glucose testing supplies with a prescription signed by your doctor. You can generally find these items at any pharmacy. Depending on your health plan, you may need to get them through a mail-order pharmacy.

### Steps for Testing Your Blood Glucose:

1. Make sure you review the instructions that come with the meter.
2. Wash your hands in warm, soapy water and dry them.
3. Insert a test strip into the meter.
4. Poke your finger with a lancet to get a blood drop.
5. Apply the blood drop to the strip.
6. The meter then gives you your blood glucose result.

Note: Use a different finger each time and adjust the lancet device to the lowest setting that will still allow you to get enough blood. You may use all ten fingers. This minimizes pain from the lancets.



### **If You Are Not Getting Enough Blood:**

- When washing hands, use warm water to increase blood flow to your hands.
- Gently shake your arm down to get more blood into your fingers.
- Press the lancet firmly against the side, not the center, of your fingertip and push the button to poke your finger.
- Massage your finger after you poke it to get a bigger drop of blood.

### **Taking Care of Your Glucose Meter and Test Strips**

- If you have questions, call the toll-free number on the back of the meter.
- Glucose meters run on batteries. Have spare batteries available.
- Keep test strips covered, dry and in the packaging until you use them.
- Do not use test strips after the expiration date.
- Keep test strips at room temperature, below 86° Fahrenheit. Do not refrigerate.
- Do not put used lancets in the garbage! Throw them away in a sharps container.

### **Quality Control**

To check if your meter is working correctly, use the control solution that comes with your meter to do a control test. You can get more information on how to do this by reading the instruction book, or by calling the 24-hour, toll-free number printed on the back of the meter.

### **Keep a Log Book of Your Blood Glucose Results**

Tracking your blood glucose levels over time tells you how well your diabetes plan is working for you. Many meters come with a log book to track your results. Every time you check your blood glucose, record the result in your log book. Bring your log book and meter to all of your health care appointments.

### **Other Things to Track:**

- Any changes in how you feel, including illness or stress.
- Unusually low or high blood glucose readings.
- Your diabetes pills and/or insulin.

## When to Check Your Blood Glucose

There are recommended routine times during the day to check your blood glucose. Each plan listed below shows different times when blood glucose should be checked. Your health care provider will decide which plan is best for you. Also, be sure to test if you feel symptoms of low or high glucose.

- ❑ **Plan 1**
  - Every morning on an empty stomach
  - Before main meals
  - Bedtime
  - 3:00 AM, as needed
  
- ❑ **Plan 2**
  - Every morning on an empty stomach
  - Before dinner
  - 2 hours after a meal (do this twice a week)
  
- ❑ **Plan 3** Choose one meal for the day and check your glucose:
  - Before the meal
  - 2 hours after the meal

Note: Choose a different meal each day.

❑ **Other** \_\_\_\_\_  
\_\_\_\_\_

### Examples of when to do which plan:

- **Plan 1** if on insulin
- **Plan 2** if on pills
- **Plan 3** if on a controlled diet

## Target Blood Glucose Values\*

Your health care provider defines your target blood glucose values. The goal is to keep your blood glucose level as close to your target value as possible to achieve or maintain overall health.

**Target home blood glucose values**  
recommended by the Center for Diabetes Services are:

- Fasting and before meals: 70 - 120 mg/dL
- Two hours after the start of a meal: under 160 mg/dL

Your individualized target blood glucose values are\*:

- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_

\* During your hospital stay, glucose targets may differ. Certain populations may have individualized targets (for example, children, the elderly, people with kidney disease, pregnant women). Discuss your target glucose values with your health care provider.

It is important to know what to do if your blood glucose is outside your target range. Refer to **Problem Solving** to treat low and high blood glucose values.



## A1C Blood Test

The A1C is a laboratory test that measures your average blood glucose levels over the last 2 - 3 months. It measures overall control and shows if a person is at risk for complications. This is an important test for people with diabetes.

The usual goal for this test is a value below 6.5 - 7%. This is the range shown to prevent, delay, and in some cases, reverse complications. The normal value for people without diabetes is less than 6%.

The American Diabetes Association (ADA) recommends an A1C blood test at least two times a year for people who have reached target goals. For people with uncontrolled diabetes, the ADA recommends the A1C test four times a year.

	A1C (%)	Average Glucose (mg/dL)
<b>ADA Goal</b>	<b>6</b>	<b>135</b>
	<b>7</b>	<b>170</b>
<b>Action Suggested</b>	<b>8</b>	<b>205</b>
	<b>9</b>	<b>240</b>
<b>Immediate Action Suggested</b>	<b>10</b>	<b>275</b>
	<b>11</b>	<b>310</b>
	<b>12</b>	<b>345</b>

What was your last A1C test result? \_\_\_\_\_ Date: \_\_\_\_\_

Ask your doctor for a copy of your lab tests.

## Blood Pressure, Cholesterol and Weight

Many people are unaware of the importance of monitoring blood pressure, cholesterol and weight, and their impact on diabetes health. They are just as important as your glucose values. You can protect yourself against the most common complications of uncontrolled diabetes (heart attacks and strokes) by knowing these targets and working with your health care provider to meet your goals.

### Your Goals:

- Blood pressure: less than 130/80 mmHg
- Total cholesterol: less than 200 mg/dL
- HDL (high-density lipoprotein):
  - For women: more than 50 mg/dL
  - For men: more than 40 mg/dL
- LDL (low-density lipoprotein): less than 100 mg/dL (ideal is less than 70 mg/dL)
- TG (triglycerides): less than 150 mg/dL
- Weight: A healthy weight can help reduce your risk of high blood pressure, coronary heart disease and stroke. It can also help improve your blood glucose control. Speak with your health care provider about a healthy weight target value.



## Sharps Containers

Lancets and syringe needles are called *sharps*. Used sharps must be put into special sharps containers and then taken to a safe needle disposal site. This helps protect people from needle-sticks that can infect them with diseases like hepatitis or HIV/AIDS.

**It is illegal to throw needles in the garbage!**

### San Francisco Safe Needle Disposal Program

San Francisco has a Safe Needle Disposal Program at Walgreens pharmacies. If you do not have a sharps container, you can get one free at Walgreens.

1. Put all of your used sharps in this container.
2. Close and lock the lid when the container is full.
3. Bring the full container back to Walgreens to get a new one.

### Other Programs

- Call your local pharmacist, garbage service or public health department and ask about safe sharps disposal.
- The Centers for Disease Control web site has information on safe community needle disposal in most states. Go to [www.cdc.gov/needledisposal](http://www.cdc.gov/needledisposal).
- The Coalition for Safe Community Needle Disposal is a nationwide program. Visit their web site at [www.safeneedledisposal.org](http://www.safeneedledisposal.org) or call 1-800-643-1643 for information on disposal sites near you. They also have information on companies that offer “mail-back” programs for used sharps.
- Earth 911 is a web site that lets you search for sharps disposal sites in your area. Visit [www.earth911.org](http://www.earth911.org) and use the search box at the top of the page.



## Your Blood Glucose Monitoring Record

	<b>Fasting</b> (before breakfast)	<b>2 Hours</b> <b>After Breakfast</b>	<b>Before</b> <b>Lunch</b>	<b>2 Hours</b> <b>After Lunch</b>	<b>Before</b> <b>Dinner</b>	<b>2 Hours</b> <b>After Dinner</b>	<b>Other</b>
<b>Mon</b>							
<b>Tues</b>							
<b>Wed</b>							
<b>Thur</b>							
<b>Fri</b>							
<b>Sat</b>							
<b>Sun</b>							

**Target Blood Glucose:** Before meals: 70 - 120 mg/dL or \_\_\_\_\_

2 hours after meals: less than 160 mg/dL or \_\_\_\_\_

This is a sample template of a glucose record. You may use the logbook that came with your glucose monitor.

This information helps you and your health care provider make adjustments to your treatment plan.



# Taking Medications Safely

## Pills for Diabetes

Your doctor may order one or more medications in pill form to control your diabetes.

**These medications do not contain insulin.** These medications are divided into 5 different groups. Each section below lists the group of medication and how it works.

**Insulin Secretagogues** make the pancreas release insulin.

Brand Name (Generic Name)	Dose Range	When to Take	Considerations
Micronase <sup>®</sup> , Glynase <sup>®</sup> , DiaBeta <sup>®</sup> (glyburide)	1.5 - 20 mg	1 - 2 times a day with meals	<ul style="list-style-type: none"><li>• Risk of hypoglycemia</li><li>• May cause prolonged hypoglycemia in elderly patients or those with kidney disease</li><li>• Do not crush or break Glucotrol<sup>®</sup> XL pills</li><li>• Possible weight gain</li><li>• Possible rash</li><li>• Do not take if you skip a meal</li></ul>
Glucotrol <sup>®</sup> (glipizide)	5 - 40 mg	1 - 2 times a day, 30 minutes before a meal	
Glucotrol <sup>®</sup> XL (long-acting glipizide)	2.5 - 20 mg	Take once a day with breakfast	
Amaryl <sup>®</sup> (glimepiride)	1 - 8 mg	Take once a day with a meal	
Prandin <sup>®</sup> (repaglinide)	0.5 - 2 mg	Take up to 3 times a day right before a meal	
Starlix <sup>®</sup> (nateglinide)	60 or 120 mg		

**Alpha-Glucosidase Inhibitors** slow the absorption of carbohydrates in the intestines.

Brand Name (Generic Name)	Dose Range	When to Take	Considerations
Precose <sup>®</sup> (acarbose)	25 - 300 mg	With first bite of a meal, up to 3 times a day	<ul style="list-style-type: none"> <li>• If used with insulin or insulin secretagogues, treat hypoglycemia with pure glucose as Precose<sup>®</sup> can interfere with absorption of carbohydrates</li> <li>• May cause bloating, gas and diarrhea</li> </ul>
Glyset <sup>®</sup> (miglitol)	50 - 300 mg		

**Thiazolidinediones** decrease insulin resistance.

Brand Name (Generic Name)	Dose Range	When to Take	Considerations
Actos <sup>®</sup> (pioglitazone)	15 - 45 mg	Once a day, same time every day, with or without food	<ul style="list-style-type: none"> <li>• Risk of swelling and weight gain</li> <li>• When used with insulin or with people who have congestive heart failure, these medications may increase risk of heart issues</li> <li>• May take 6 weeks to reach full effect</li> </ul>
Avandia <sup>®</sup> (rosiglitazone)	4 - 8 mg	1 - 2 times a day, same time every day, with or without food	

**DPP-4 Inhibitors** lower blood glucose when it is high, especially after a meal.

Stops working when glucose is normal. Decreases glucose production in liver.

Brand Name (Generic Name)	Dose Range	When to Take	Considerations
Januvia <sup>®</sup> (sitagliptin)	25 - 100 mg	Once a day with or without food	<ul style="list-style-type: none"> <li>• Risk of hypoglycemia if <u>combined</u> with a sulfonylurea</li> <li>• Risk of headache or stomach discomfort and diarrhea</li> <li>• Possible side effects of stuffy/runny nose, sore throat, upper respiratory infection, headache</li> </ul>

**Biguanides** decrease glucose production from the liver.

Brand Name (Generic Name)	Dose Range	When to Take	Considerations
Glucophage <sup>®</sup> (metformin)	500 - 2,500 mg	Take with a meal	<ul style="list-style-type: none"> <li>You may not experience the full effect for about 2 weeks</li> <li>Take with food to minimize risk of diarrhea and nausea. Tell your health care provider if these symptoms do not go away</li> <li>If you drink alcohol or have kidney or liver disease, ask your health care provider about the safety of taking metformin in any form</li> </ul>
Glucophage <sup>®</sup> XR (metformin long-acting)			

### Combination Drugs

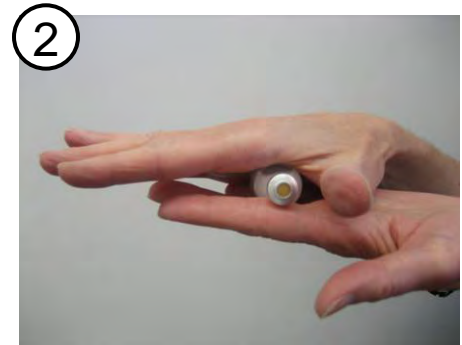
Brand Name (Generic Name)	Dose Range	When to Take	Considerations
Glucovance <sup>®</sup> (glyburide/metformin)	20/2,000 mg	Before a meal	<ul style="list-style-type: none"> <li>Refer to individual medications listed above</li> </ul>
Metaglip <sup>®</sup> (glipizide/metformin)	20/2,000 mg		
Avandamet <sup>®</sup> (rosiglitazone/metformin)	8/2,000 mg	With a meal	
Janumet <sup>®</sup> (sitagliptin/metformin)	100/2,000 mg		

## Insulin Injection

Insulin is a hormone that lowers blood glucose. Insulin can not be taken as a pill because stomach enzymes destroy it before it can work. This section is about using insulin safely. This means knowing how to draw up and inject insulin as well as knowing how different insulins work (specifically, action and timing).

### How to Draw up Insulin (Vial and Syringe)

1. Wash your hands and gather your supplies.
2. **Never shake a bottle of insulin.** If you take cloudy insulin, roll the bottle between your hands until the insulin is evenly cloudy.



3. Clean the top of the bottle with an alcohol wipe.

4. Note the amount of insulin you will need. Pull the plunger until you fill the syringe with that amount of air.



5



5. With the bottle right side up, push the needle into the rubber stopper on top of the bottle and push the air in the syringe into the bottle.

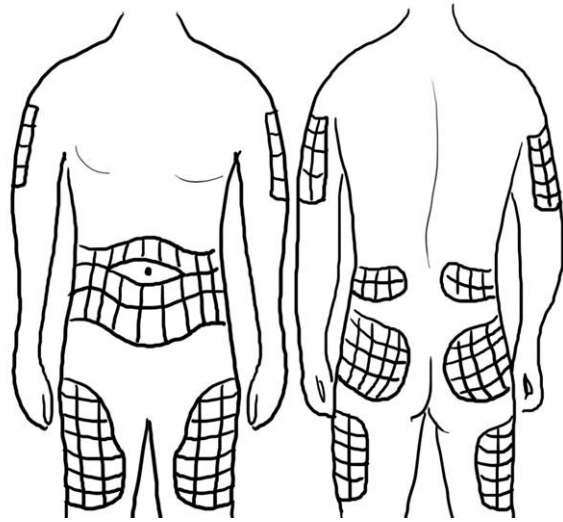
6



6. Turn the bottle upside down with the syringe still in the rubber stopper.
7. Slowly pull the plunger to fill the syringe with insulin. To get the right number of units, make sure that the top of the black plunger is lined up to match the number of insulin units needed.
8. Look for air bubbles. If there are air bubbles in the syringe, that means you will not be getting the right amount of insulin. If you see air bubbles in the syringe, push the insulin back into the bottle (do not pull out the needle) and start over from Step 7.
9. When you have the correct number of units in the syringe, pull the needle out of the rubber stopper.

## How to Inject Insulin

1. Clean your skin where the injection is to be made. You may use soap and water or an alcohol wipe. Make sure your skin is completely dry before you inject. Use the abdominal area (unless otherwise advised) as insulin is most evenly absorbed in this area. Change the site on the abdomen for each injection. Stay an inch or more away from your navel with each injection. (See Figure A below, *Where to Inject Insulin Safely*.)
2. With one hand, pinch your skin up.
3. Pick up the syringe with the other hand and hold it the same way as you would hold a dart. Do not let the needle touch anything. Insert the needle straight into the skin. Be sure to insert the needle all the way. It is best for most people to use a 90 degree angle to inject insulin
4. To inject the insulin, push the plunger all the way down and hold for five seconds.



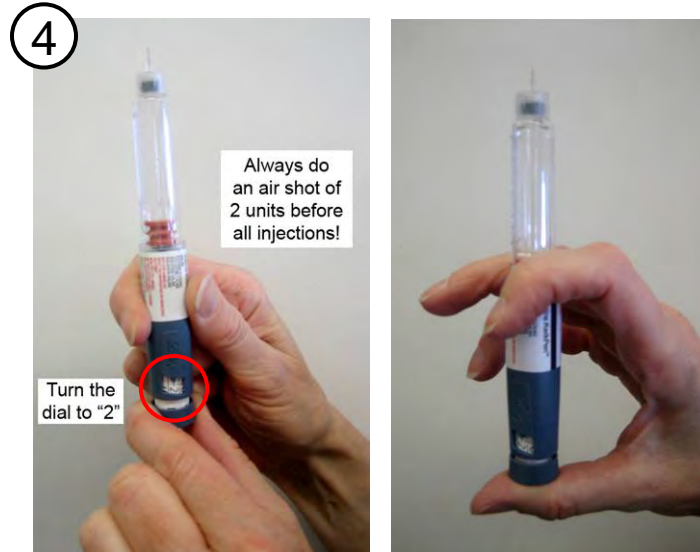
**Figure A**  
***Where to Inject Insulin Safely***



5. Pull the needle straight out of the skin.
6. If necessary, you may press your finger or an alcohol swab over the spot where you gave your injection, but do not rub the area.
7. Place the syringe with the needle into a sharps container according to the instructions in **Monitoring**. Never recap a needle!

## How to Use an Insulin Pen

1. Wash your hands and gather your supplies.
2. Clean your skin (see Step 1 of **How to Inject Insulin** above).
3. Peel back the paper cover on the needle, and attach the needle to the pen by screwing it into place.



4. Do an "air shot" to make sure the pen works. Turn the dial to 2 units. Push the bottom of the dial (end of the pen) all the way in. Check that the insulin has come out of the needle tip. If not, repeat the air shot.
5. Make sure the dial goes back to zero ("0"). It is very important to do this step each time you take a shot and to use a new needle each time.

6. Dial the pen to the amount of units needed.
7. Follow the steps on **How to Inject Insulin** above (only press the dial to deliver your injection). See manufacturer recommendations for how long to hold the plunger down and how to store the pens.
8. Remove the needle from the pen and place it in a sharps container. Do not store the pen with the needle attached. This may cause insulin to leak out, and you may not get the correct dose.



## Action and Timing of Different Types of Insulin

The point at which insulin starts working is called the *onset*. The time when insulin is working the strongest is called the *peak*. The *duration* is how long the insulin works in the body before it is gone. Knowing when insulin is working in your body helps you to reduce your risk for low blood glucose by taking proactive steps (for example, carrying a snack with you when away from home).

Insulin Type	Color	Length of Action		
		Onset	Peak	Duration
<b>Rapid Acting</b> Humalog <sup>®</sup> (lispro) Novalog <sup>®</sup> (aspart) Apidra <sup>®</sup> (glulisine)	Clear	0 - 15 minutes	30 - 90 minutes	Up to 5 hours
<b>Short Acting</b> Novolin R <sup>®</sup>	Clear	30 minutes	2 - 5 hours	Up to 8 hours
<b>Intermediate Acting NPH</b> Humulin N <sup>®</sup> Novolin N <sup>®</sup>	Milky white when mixed (rotate vial to mix)	2 - 4 hours	6 - 10 hours	Up to 20 hours
<b>Long Acting</b> Lantus <sup>®</sup> (glargine) Levemir <sup>®</sup> (detemir)	Clear	1 - 2 hours	no peak	Up to 24 hours
<b>Premixed: Short and Intermediate Acting</b> Humulin <sup>®</sup> 70/30 Novolin <sup>®</sup> 70/30 Humulin <sup>®</sup> 50/50	Milky white	30 minutes - 1 hour	2 - 10 hours	Up to 20 hours
		30 minutes - 1 hour	1 - 6 hours	14 hours
<b>Premixed: Rapid and Intermediate Acting</b> Humalog-Mix <sup>®</sup> 75/25 Novolog-Mix <sup>®</sup> 70/30 Humalog <sup>®</sup> 50/50	Milky white	0 - 15 minutes	30 minutes - 12 hours	Up to 20 hours

Name: \_\_\_\_\_

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

## My Insulin Plan

**Basal Insulin**    Lantus<sup>®</sup> (glargine)    Levemir<sup>®</sup> (detemir)    NPH    Other: \_\_\_\_\_

1 Take \_\_\_\_\_ units at \_\_\_\_\_ (time of day)

Take \_\_\_\_\_ units at \_\_\_\_\_ (time of day)

**Mealtime Set Dose**    Humalog<sup>®</sup> (lispro)    Apidra<sup>®</sup> (glulisine)    Novolog<sup>®</sup> (aspart)    Regular

2 Take \_\_\_\_\_ minutes before your meal:

Breakfast \_\_\_\_\_ units      Lunch \_\_\_\_\_ units      Dinner \_\_\_\_\_ units

**Mealtime Scale**    Humalog<sup>®</sup> (lispro)    Apidra<sup>®</sup> (glulisine)    Novolog<sup>®</sup> (aspart)    Regular

Take \_\_\_\_\_ minutes before your meal according to the scale below.

Note: If you are on a set dose of mealtime insulin, add this extra amount of insulin to your set dose. (Before:    breakfast    lunch    dinner)

Blood Glucose (mg/dL)	Insulin for all Meals
<b>Less than 70 → Do not take insulin.</b>	
<i>Treat low glucose and recheck after 15 minutes.</i>	
70 - 100	_____ units
101 - 150	_____ units
151 - 200	_____ units
201 - 250	_____ units
251 - 300	_____ units
301 - 350	_____ units
351 - 400	_____ units
More than 400	_____ units

**Bedtime Correction Scale** (to correct high blood glucose before bedtime\*)

Humalog<sup>®</sup> (lispro)    Apidra<sup>®</sup> (glulisine)    Novolog<sup>®</sup> (aspart)    Regular

Blood Glucose (mg/dL)	Units of Insulin
Under 250	None
250 - 350	_____ units
Over 350	_____ units

\* If blood glucose is less than \_\_\_\_\_ mg/dL at bedtime, eat a bedtime snack (for example, a ½ sandwich, 8 ounces low-fat milk or a cup of light yogurt).

Completed by: \_\_\_\_\_

Name: \_\_\_\_\_

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

## My Insulin Plan

**Basal Insulin**    Lantus® (glargine)    Levemir® (detemir)    NPH    Other: \_\_\_\_\_

1 Take \_\_\_\_\_ units at \_\_\_\_\_ (time of day)

Take \_\_\_\_\_ units at \_\_\_\_\_ (time of day)

**Mealtime Set Dose**    Humalog® (lispro)    Apidra® (glulisine)    Novolog® (aspart)    Regular

2 Take \_\_\_\_\_ minutes before your meal:

Breakfast \_\_\_\_\_ units      Lunch \_\_\_\_\_ units      Dinner \_\_\_\_\_ units

**Mealtime Scale**    Humalog® (lispro)    Apidra® (glulisine)    Novolog® (aspart)    Regular

Take \_\_\_\_\_ minutes before your meal according to the scale below.

Note: If you are on a set dose of mealtime insulin, add this extra amount of insulin to your set dose. (Before:    breakfast    lunch    dinner)

3

Blood Glucose (mg/dL)	Insulin for all Meals
<b>Less than _____ → Do not take insulin.</b>	
<i>Treat low glucose and recheck after 15 minutes.</i>	
	units
	units
	units
	units
	units
	units
	units
	units

**Bedtime Correction Scale** (to correct high blood glucose before bedtime\*)

Humalog® (lispro)    Apidra® (glulisine)    Novolog® (aspart)    Regular

4

Blood Glucose (mg/dL)	Units of Insulin
Under 250	None
250 - 350	_____ units
Over 350	_____ units

\* If blood glucose is less than \_\_\_\_\_ mg/dL at bedtime, eat a bedtime snack (for example, a ½ sandwich, 8 ounces low-fat milk or a cup of light yogurt).

Completed by: \_\_\_\_\_

## General Insulin Tips

- Insulin lowers blood glucose.
- Insulin can not be taken orally as a pill because stomach enzymes destroy it before it can work.
- Each kind of insulin has its own characteristic onset, peak and duration.
- Check with your doctor before changing the amount, type or brand of insulin.
- Your insulin dosages are based on your blood glucose levels, meal plan and activity. They will probably change over time. This does not mean your diabetes is getting worse!
- Double check the dose. If you overdraw, start over.
- Use the insulin by the expiration date on the bottle. An open bottle of insulin can be kept in the refrigerator or at room temperature, but once it is open it is only good for 30 days. Keep unopened vials of insulin in the refrigerator.
- Ask your diabetes educator to show you ways to get rid of air bubbles.
- Lantus<sup>®</sup> (glargine) and Levemir<sup>®</sup> (detemir) can not be mixed with other insulins.
- If the needle bends while you draw up the insulin, do not straighten it. Place the bent needle in a sharps container and start over with a new needle.
- If you notice a bump or bruise at the site of an injection, avoid using that site again until it returns to normal.
- If you need to use two types of insulin for an injection, refer to “Mixing Insulins” in your insulin start kit or ask to see a diabetes educator.



## Other Injectables

There are other injectable medicines such as Byetta® (exenatide) and Symlin® (pramlintide) that help lower blood glucose levels. Your health care provider may prescribe one of these depending on your need and the type of diabetes you have.

<b>“Mimetics” (not insulin)</b> act like gut hormones to slow digestion. Decreases glucose production in liver. Increases mealtime fullness.			
<b>Brand Name (Generic Name)</b>	<b>Dose Range</b>	<b>When to Take</b>	<b>Considerations</b>
Byetta® (exenatide)	5 - 10 mcg	2 times a day, 60 minutes or less before breakfast and dinner	<ul style="list-style-type: none"> <li>• Nausea common at first</li> <li>• Nausea decreases after meal</li> <li>• Do not take if you skip a meal</li> <li>• Do not take after a meal (may cause vomiting)</li> <li>• Low glucose can occur when taken with medications listed in “Insulin Secretagogues”</li> <li>• Exenatide is not recommended for people with severe kidney problems, high triglycerides, or digestion problems</li> </ul>
Symlin® (pramlintide acetate)	15 - 120 mcg	Before meals, up to 3 times a day	<ul style="list-style-type: none"> <li>• Considerations as above</li> <li>• Only used for people on insulin (type 1 and 2)</li> <li>• Reduce short-acting, mealtime insulin by 50% when starting pramlintide</li> <li>• Pramlintide is not recommended for people with digestion problems</li> </ul>



# Problem Solving

## Blood Glucose Values

It is important to know what to do if your blood glucose is outside your target range. See the guidelines below.

## Low Blood Glucose (Hypoglycemia)

Low blood glucose, also called *hypoglycemia*, is a true emergency. It can happen suddenly and progress rapidly to a coma. It is important to know how to prevent, recognize and treat low blood glucose.

**Low blood glucose is** a reading under 70 mg/dL with or without symptoms, or between 70 - 100 mg/dL with symptoms.

### Symptoms of low blood glucose:

#### Early symptoms

- Shakiness
- Sweaty, cold or clammy skin
- Dizziness or lightheadedness
- Anxiousness or nervousness
- Fast heart beat
- Hunger
- Headache
- Irritability
- Weakness or fatigue
- Vision changes

#### Late symptoms

- Tingling around the mouth
- Mental dullness
- Personality changes
- Seeing spots in front of your eyes or vision changes

You may have low blood glucose even if you do not have all of these symptoms. If you have symptoms of low blood glucose, do a test right away. If you can not test, treat as if you have low blood glucose.

To treat low blood glucose, follow the **15/15 Rule** (see next page).

## Low Blood Glucose Treatment: 15/15 Rule

1. Treat low blood glucose by taking one serving of fast-acting sugar from the following list (each serving below contains about 15 grams of fast-acting sugar):

- 3 square or 4 round glucose tabs
- ½ cup (4 oz) fruit juice
- ½ cup (4 oz) of regular (not diet) soda
- 1 Tablespoon of honey or sugar
- 5 small sugar cubes
- 8 Lifesavers® candies
- 2 Tablespoons of raisins (mini box size)
- 1 cup of non-fat milk



2. **15 minutes** after treating the symptoms, test your blood glucose:

- If your blood glucose is still less than 70 mg/dL, or between 70 - 100 mg/dL with symptoms, take another 15-gram serving of fast-acting sugar from the list above.
- Repeat until your blood glucose is over 70 mg/dL and the symptoms are gone.
- If low blood glucose has not resolved after two servings of fast-acting sugar (in 30 minutes), get medical help.
- If your next meal or snack is more than 30 minutes away, eat a snack once your blood glucose returns to normal. The snack should include protein and carbohydrate.

### Examples of Snacks:

- 8 oz of milk
- a ½ sandwich with protein, cheese, or peanut butter
- 6 crackers with meat, cheese, or peanut butter

**If you take insulin or pills that make you produce more insulin, always carry fast-acting sugar!**

## Driving and Low Blood Glucose

If your blood glucose is below 70 mg/dL, your driving skills will be impaired and put you and others at risk for injury. To be safe, check your blood glucose before driving. Always carry your blood glucose meter, glucose tabs and a small snack with you. That way, if you get stuck in traffic or your blood glucose gets low, you can treat it.

### Do not drive if:

- Your blood glucose is below 70 mg/dL
- Your blood glucose was below 70 mg/dL earlier in the day (must be above 100 mg/dL to drive)
- You have symptoms of low blood glucose



## Low Blood Glucose Emergency: Glucagon

If your blood glucose level gets so low that you can not safely swallow food or drink or you pass out, you need to raise it quickly. Glucagon is a medicine that raises your blood glucose immediately. It is given by injection (shot). Someone else must give you the injection because you may not be fully conscious. Tell your caregiver to read the following guidelines with you. Your health care provider gives you a prescription for a glucagon rescue kit which contains the following:

- A small bottle of dry glucagon
- A syringe filled with liquid
- Simple instructions – please refer to these in addition to reading the guidelines below

### If You Can Not Safely Swallow, or You Pass Out from Low Blood Glucose:

1. Your caregiver must give you the glucagon injection.
2. Someone must call 911.

If you do not wake up in 15 minutes, your caregiver must give you another glucagon injection.

A diabetes educator can teach a family member, friend or co-worker how to give a glucagon injection. Call the Center for Diabetes Services at 415-600-0506 to make an appointment.

## Preparing Glucagon for Injection\*

1. You must mix the dry glucagon with the liquid in the syringe before giving the injection.
2. Remove the flip-off seal from the bottle of glucagon. Wipe the rubber stopper with alcohol.
3. Remove the needle cover from the syringe. Do not remove the plastic clip from the syringe. This clip prevents the plunger from being pulled out of the syringe.
4. Inject all of the liquid in the syringe into the bottle of glucagon, then remove the syringe from the bottle.
5. Swirl the bottle gently until the dry glucagon dissolves completely. The mixture will look clear like water. Do not use the medicine if it looks cloudy or thick.
6. Hold the bottle upside down and insert the syringe into the bottle. Pull the plunger back until the syringe fills with the mixture.
7. For adults, fill the syringe to the 1 mg mark.

### Now you can give the injection:

1. Clean a spot on the buttock, arm or thigh with an alcohol swab.
2. Inject the glucagon mixture, then withdraw the syringe. Press an alcohol swab on the injection site.
3. Turn the person on his or her side. This helps prevent the person from choking if he or she vomits.
4. Call 911.
5. **As soon as the person is awake enough to safely swallow food and drink, he or she must drink (regular soft drink or juice) to prevent a rebound low glucose, and then eat (crackers and cheese or a 1/2 sandwich).**
6. If the person does not wake up within 15 minutes, give another dose of glucagon.

Always tell your doctor if you have had a low blood glucose emergency, even if you feel fine afterwards.

---

\* Adapted from the Eli Lilly™ glucagon instruction sheet. Other kits are available on the market.



# 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 Do?



**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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Concept developed by Rhonda Rogers, RN, BSN, CDE

## High Blood Glucose (Hyperglycemia)

High blood glucose, also called *hyperglycemia*, is when your blood glucose is over 160 mg/dL or **over** your target range.

It is unhealthy if your blood glucose is high for long periods of time because it can increase the risk of complications to your organs and blood vessels. In the long-term, it may lead to damage to your eyes, heart and kidneys. It may also put you at more risk for heart attack and stroke. High blood glucose can lead to health problems in the short-term as well. Your treatment plan may need to be changed if your blood glucose values are frequently high.

### Call your health care provider when your blood glucose is:

- Over 250 mg/dL for several tests or several days in a row
- Over 300 mg/dL one time
- Consistently over your target range

### Symptoms of high blood glucose include:

- Increased thirst
- Increased urination
- Dry mouth or dry or itchy skin
- Drowsiness or fatigue
- Blurred vision
- More frequent infections
- Sores or cuts that heal slowly
- Hunger
- Unexplained weight loss

### Symptoms of severe high blood glucose include\*:

- Heavy, labored breathing
- Nausea and vomiting
- Pains in stomach
- Loss of appetite
- Severe weakness
- Aching all over
- Presence of ketones



\* If you have any of these symptoms, contact your health care provider immediately.

### **Causes of high blood glucose include:**

- Too much food
- Too little exercise or decreased physical activity
- Stress, illness, injury, infection or surgery
- Certain medications such as steroids (for example, Prednisone® or Decadron®)
- Too little diabetes medication
- Too little insulin, or insulin that has spoiled or been exposed to extreme temperatures (extreme heat or cold)
- Insulin pen or pump malfunction

Note: Make sure your blood glucose meter is working accurately.

### **What should you do if your blood glucose is too high?**

- Drink plenty of sugar-free fluids (water is best). If you have a fluid restriction, ask your health care provider before drinking more fluids.
- If your blood glucose is over 250 mg/dL twice in a row or you are sick and on insulin, check your urine or blood for ketones. If you have ketones, follow your **Sick Day Plan** and call your health care team.
- Ask yourself what may have caused the high glucose and take action to correct it. Check with your health care team if you are unsure what to do.
- Try to figure out if there is a pattern to your high blood glucose levels. Speak with your health care team about possible changes to your diabetes management plan.



## What is Diabetic Ketoacidosis (DKA)?

Diabetic Ketoacidosis (DKA) is a serious condition that occurs most often in people with type 1 diabetes. The body burns fat for energy when it does not have enough insulin and blood glucose levels are too high. The fat breakdown causes the formation of ketones (acids) which may show up in the blood and urine. High ketone levels are very dangerous and can lead to DKA. Although DKA is most common in people with type 1 diabetes, it can also affect people with type 2 diabetes.

DKA can develop quickly, especially if you have a fever or are sick with a cold or flu. DKA is a serious illness that can advance to a severe illness and even death.

### Common Symptoms of DKA

- Unusual thirst and hunger
- More frequent urination
- Throwing up or feeling sick to the stomach
- Stomach pain
- Fruity smell on your breath
- Breathing fast and deep

### When you are sick and on insulin it is very important to test your ketones if:

- Your blood glucose is above 240 mg/dL
- You can not keep food or liquids down (this includes vomiting even one time)
- You have the common symptoms of DKA

## How to Check Your Urine for Ketones

1. Purchase Ketostix<sup>®</sup> or Keto-Diastix<sup>®</sup> (reagent strips) at any pharmacy.
2. Place a small amount of urine in a clean cup.
3. Dip the strip into the urine.
4. Remove the strip from the urine and wait 15 seconds. The strip will change color if there are ketones in the urine.
5. Match the color of the strip to the color chart that comes on the side of the bottle or inside the package of strips.



## How to Interpret Urine Ketones Results and When to Call for Help

If you have moderate or large ketones, get immediate medical attention. If you can not speak to your health care provider right away, go to the emergency room or call 911.

If you have small or trace ketones, contact your health care provider for treatment recommendations.

Anytime you have ketones, make sure you:

- Check your blood glucose every 2 - 3 hours
- Drink more water or sugar-free, uncaffeinated drinks

## How to Check Your Blood for Ketones

As of 2008, only one meter tests for blood ketones: the Precision Xtra<sup>®</sup>. You can get this at any pharmacy. Your diabetes educator can show you how to use this meter. It is similar to using a blood glucose meter. You can only use the fingertips for blood ketone testing.

## How to Interpret Blood Ketones Results

- **Normal** blood  $\beta$ -ketone (beta ketone) levels are less than 0.6 mmol/L.
- **High** blood  $\beta$ -ketone levels are more than 8.0 mmol/L. Do a second test. If the result is still over 8.0 mmol/L, **go to the emergency room immediately or call 911.**
- **At risk** blood  $\beta$ -ketone levels are 1.5 mmol/L or higher. This means you may be at risk for developing DKA. Call your health care provider immediately. If you can not reach your health care provider, go to the emergency room.
- **Call your health care provider for instructions** if your blood  $\beta$ -ketone results are between 0.6 and 1.5 mmol/L with a glucose level above 250 mg/dL.

## How to Prevent DKA

Early detection and treatment is the key to preventing DKA.

**Call your health care provider if you test positive for ketones.** Getting the right treatment from your health care provider lowers the chance that you could develop DKA.

Make sure you:

- Drink more fluids. The extra fluids help to flush ketones out of your body.
- Do not exercise if you have ketones. Exercise may increase the ketone level.



## Sick Day Plan - When You Have Diabetes

The stress of illness can make controlling your blood glucose more difficult. When you are sick, it is very important that you:

- Take your diabetes medications (including insulin) as you normally do, even if you can not eat your usual meals, unless your doctor tells you otherwise.
- Test and record your blood glucose at least every **2 - 4 hours**.
- If you have type 1 diabetes, test your urine or blood for ketones every 4 - 6 hours. If you have type 2 diabetes and take insulin, you may also need to test for ketones.
- You may replace your regular meals with one small serving (15 grams) of carbohydrates every 1 - 2 hours. Some carbohydrates that are easy to digest are:
  - ½ cup fruit juice
  - ½ cup regular soda (not diet)
  - ½ cup Jell-O®
  - 1 cup Gatorade®
  - 1 double popsicle
  - ½ cup regular ice cream
  - ¼ cup sherbet
  - 1 slice bread/toast
  - ½ cup cooked cereal
  - 6 saltine crackers
  - 3 graham crackers
- Drink plenty of sugar-free, uncaffeinated fluids such as water, diet soda, broth or tea (uncaffeinated). To avoid dehydration, take sips often or drink at least ½ cup every half hour. For people with fluid restrictions, follow your primary care provider's instructions.
- Check your temperature every 4 - 6 hours for fever.



### When to Call Your Health Care Provider if You Are Sick

- Your blood glucose is over 250 mg/dL twice in a row if on insulin or over 250 mg/dL for 2 days in a row.
- You can not eat or drink.
- You have ketones in your urine or blood.
- You vomit more than once or have severe abdominal pain.
- You have diarrhea for more than 6 hours.
- You have a fever of 100° F or more.
- You have trouble breathing.
- You have **any other unusual symptoms!**

### Make a “Sick Day Kit”

It is best to be prepared. Keep these items in a small box so they are ready if you get sick:

- Jell-O<sup>®</sup> packets, crackers, a few cans of regular soda
- Thermometer
- These **Sick Day Plan** instructions
- Your health care provider’s phone number: \_\_\_\_\_
- Urine Ketostix<sup>®</sup> or Precision Xtra<sup>®</sup> to monitor ketones (if needed)

If you live alone, try to have someone check on you every few hours. Otherwise, you may set a timer to remind yourself to attend to your diabetes sick day needs.

## Diabetes Care During a Disaster

A disaster is a sudden occurrence that inflicts widespread destruction, hardship and distress, and can be a serious threat to your diabetes health. Water and food may be limited and/or contaminated, and diabetes supplies may be very difficult to get.

### Routine diabetes care supplies

Have two weeks' worth of your routine diabetes care supplies, or have them ready to add to your diabetes disaster kit (see below) at a moment's notice:

- Diabetes pills, insulin and all daily medication
- Insulin syringes, alcohol swabs and tissue
- Glucose monitor kit with extra batteries
- Test strips, lancet device and lancets
- Cellular phone
- Fast-acting sugar (glucose tabs, small box of raisins, juice box)
- Snacks (peanut butter crackers, nuts)
- Glucagon rescue kit (if you use insulin)
- Sharps container

### Diabetes disaster kit

Prepare an easy-to-carry diabetes disaster kit that is both insulated and waterproof. You can store the following:

- Extra comfortable clothing including undergarments
- Small first aid kit to treat minor cuts or abrasions
- Notepad and pencil to write down any glucose values
- List of your health care providers and phone numbers
- List of all medications, medical conditions and past surgeries
- Space to add the items from your routine diabetes care supplies

You will need to prepare and store several food items. This includes at least three days' supply of non-perishable foods (for example, crackers, peanut butter, nuts, powdered milk, cheese and crackers, canned tuna), and one gallon of water per person, per day, with several cans of juice and diet soda.

### Tips to remember

- Protect your feet. Wear shoes at all times and examine your feet often for cuts or infection. Debris can increase your risk for injury.
- Stress can cause your glucose to rise.
- Wear a medical alert bracelet or necklace.
- Stay hydrated!
- Consider choosing a designated meeting place in case you are separated from your family or are unable to reach them by phone.



# Reducing Risks

## How to Stay Healthy After You Leave the Hospital

This is your formula for successful diabetes management.



**Monitoring:** Regularly checking your blood glucose tells you how food, exercise, medication or illness affects your diabetes. Knowing this helps you better control your blood glucose levels.



**Taking Medication Safely:** Carefully follow your doctor's and pharmacist's instructions.



**Healthy Eating:** Eating the right foods at the right times helps you keep your blood glucose in a safe range. Follow the meal plan provided by your dietitian.



**Being Active:** Speak to your health care provider before you start an exercise program. Learn about the benefits of regular exercise. Ask for guidance from your health care provider on what type of exercise program might be best for you.



**Healthy Coping:** Accepting the diagnosis of diabetes can be difficult. Speak to family members or close friends, or try joining a support group. Set aside time to enjoy stress-relieving activities such as listening to music, walking with friends, or reading a good book. Stress, lack of sleep and depression may impact your blood glucose levels and how you take care of yourself. Get help if you need it!

**Learning More About Your Diabetes:** Knowledge about your diabetes can give you a sense of control in your daily life. Speak to your health care provider about taking educational classes.



## Healthy Coping

Apart from the stress of being hospitalized, diabetes is a challenge. How you perceive the impact diabetes has on your body, and how you prepare your mind for your new journey, has an effect on your ability to manage your diabetes. With the right amount of information and support, you will have the tools to stay healthy.

This guide is a good place to start. If you have not had a formal diabetes education, consider attending a local program recognized by the American Diabetes Association (see **Other Resources** below).

The certified diabetes educators will work with you and your family to learn all about diabetes and the things you can do day-to-day to have a healthy life. The national standard of diabetes education is generally covered under insurance in the State of California and includes 10 hours of comprehensive instruction with a referral from your health care provider. This small investment of time can get you on the road to staying healthy and out of the hospital.

Once you recover from your hospitalization, you can start, restart, or continue your diabetes program. You choose how actively involved to be, given life's everyday situations and distractions. Whenever the time is right, your diabetes care team is your ultimate go-to resource. You may find other helpful resources in your community, such as the diabetes support groups offered at CPMC and many other medical centers.

### **Make an Appointment to Learn More about Diabetes**

Call the Center for Diabetes Services at 415-600-0506  
3801 Sacramento Street, 7<sup>th</sup> Floor

### **Other Resources**

- The American Diabetes Association at [www.diabetes.org](http://www.diabetes.org) or 1-800-232-6733.
- The American Association of Diabetes Educators at [www.diabeteseducator.org](http://www.diabeteseducator.org) or call 1-800-832-6874 to find a local educator.
- National Diabetes Education Program (NDEP) at [www.ndep.nih.gov](http://www.ndep.nih.gov) or 1-800-438-5383.
- For information about Medicare's coverage of diabetes supplies, contact the Health Care Financing Administration (HCFA) Center for Beneficiary Services at 1-800-MEDICARE or 1-800-633-4227 (in English and Spanish) or go online to [www.medicare.gov](http://www.medicare.gov).
- dLife at [www.dlife.com](http://www.dlife.com) for information on how to live well with diabetes.

# Home Care Instructions

Name: \_\_\_\_\_ Date: \_\_\_\_\_

## 1. Blood Glucose Testing

Plan: When to check your blood glucose	Target Blood Glucose Values
<input type="checkbox"/> Fasting <input type="checkbox"/> Before meals <input type="checkbox"/> 2 hours after start of meal <input type="checkbox"/> Bedtime <input type="checkbox"/> Other	Fasting: _____ Before meals: _____ 2 hours after start of meal: _____

Remember to make sure you are using test strips that have not expired. Check that your meter is coded correctly when you open a new bottle of strips (if applicable). Write down your blood glucose values and bring the log to your medical appointments.

## 2. Meal Plan

Number of Carbohydrate Choices per Meal					
Breakfast	Snack	Lunch	Snack	Dinner	Bedtime

- Avoid excess simple sugars.
- Eat regular meals. Do not skip meals or snacks.
- Eat the same amount of carbohydrate at each meal.
- If blood glucose at bedtime is less than \_\_\_\_\_ mg/dL, eat a bedtime snack.
- Make an appointment with a dietitian to find the meal plan that is best for you.

## 3. Exercise/Driving

- Do not begin an exercise program until checking with your health care provider.
- Check your blood glucose before exercising. Eat a snack, if needed.
- Check your blood glucose before driving. Make sure it is over \_\_\_\_\_ mg/dL before driving.

#### 4. Oral Diabetes Medications

Oral Medication Type	Timing				
	Breakfast	Lunch	Dinner	Bedtime	Other

- Do not stop or change your medication without consulting your health care provider.

#### 5. Treat Low Blood Glucose (Hypoglycemia)

If you have symptoms of low blood glucose, check your blood glucose, if possible.

- If your blood glucose is less than 70 mg/dL at any time, or 70 - 100 mg/dL with symptoms, or you are unable to check and you are having symptoms, drink 4 ounces of fruit juice, or 4 ounces of regular soda, or chew 3 square or 4 round glucose tabs.
- Wait 15 minutes and check your blood glucose again. If it is still less than 70 mg/dL with or without symptoms, or less than 100 mg/dL with symptoms, repeat the instructions above.
- If you are unable to bring your blood glucose over 70 mg/dL after two treatments, get medical attention.
- Once your blood glucose is over 70 mg/dL and your symptoms are gone, and if your next meal or snack is more than a half hour away, eat a snack.
- If you have ever been unconscious from hypoglycemia, make sure a friend or relative knows how to give glucagon.

#### 6. Sick Day Management

When you are sick your blood glucose may be higher than usual. Test your blood glucose more often (every 2 - 4 hours). Continue to take your usual doses of diabetes medication or insulin and eat your usual meals at the usual times. If you can not eat due to an upset stomach, drink liquids or eat foods with carbohydrates containing one carbohydrate choice (15 gm) every 1 - 2 hours.

- To avoid dehydration, drink at least 8 ounces of calorie-free fluids (for example, water, broth, diet soda) every hour.
- If you take insulin and your blood glucose is over 250 mg/dL, check ketones every 4 - 6 hours.

## **7. Call Your Health Care Provider for the Following Conditions**

- Frequent low blood glucose (less than 70 mg/dL twice in one week, or less than 60 mg/dL one time).
- Low blood glucose with loss of consciousness or requiring glucagon.
- Unexplained high blood glucose values over 250 mg/dL for several tests or several days in a row or over 300 mg/dL (one time).
- Moderate or large ketones (urine or blood).
- You can not keep fluids down, you vomit more than once, or you have frequent diarrhea.
- You feel very ill, have dizziness or shortness of breath.
- You have a fever over 100° F.
- You have any type of foot sore.
- Any sudden changes in your vision.

## **8. Prevent Problems**

- Do not smoke. If you smoke, there are resources that can help you to quit. Call 1-800-NO-BUTTS (1-800-662-8887), or ask your health care provider for information.
- Be sure to dispose of lancets and syringe needles in a sharps container.
- Call the Center for Diabetes Services at 415-600-0506 for more information.

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Note: This information is not meant to replace any information or personal medical advice which you get directly from your doctor(s). If you have any questions about this information, such as the risks or benefits of the treatment listed, please ask your doctor(s).

## Health Maintenance

		Visit 1	Visit 2	Visit 3	Visit 4	
Every Visit	<b>Review Blood Glucose Records</b> 120 mg/dL <u>before</u> meals less than 160 mg/dL 2 hours <u>after</u> meals	Date				
		Value	before meal after meal	before meal after meal	before meal after meal	before meal after meal
	<b>Blood Pressure</b> ADA Goals: less than 130/80 mmHg	Date				
		Value				
	<b>Weight</b> Goal: Body Mass Index less than 25	Date				
		Value				
2 - 4 Times per Year	<b>A1C</b> is a blood test that measures the past 3 months of blood glucose levels ADA Goal: less than 7.0%	Date				
		Value				
	<b>Dental cleaning</b> recommended 2 times per year	Date				
Once a Year	<b>Cholesterol</b> (every 1 - 2 years based on risk)	Date				
		Value				
	<b>Triglycerides</b> (every 1 - 2 years based on risk) ADA Goal: less than 150 mg/dL	Date				
		Value				
	<b>HDL and LDL</b> (every 1 - 2 years based on risk) HDL Goal: above 40 mg/dL (men) above 50 mg/dL (women) LDL Goal: less than 100 mg/dL	Date				
		Value	HDL LDL	HDL LDL	HDL LDL	HDL LDL
	<b>Microalbumin</b> is a urine kidney test ADA Goal: less than 30 mg/g	Date				
		Value				
	<b>Foot Exam</b> (thorough exam annually and visual exam every visit)	Date				
		Value				
<b>Dilated Eye Exam</b>	Date					
	Value					
<b>Complete Physical Exam</b>	Date					

**Ask your health care team about getting the flu shot, pneumonia vaccine, taking aspirin and how to quit smoking. Also, tell your health care team if you have unusual symptoms.**