



Diabetes Education Workbook

**TAKE HOME GUIDE FOR
EFFECTIVE MANAGEMENT**



**MAURY REGIONAL
MEDICAL CENTER**



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Long Term Complications from Diabetes

Poorly controlled diabetes will influence your quality of life. It will also lead to long term complications that cannot be reversed. If you experience any of these problems, report them to your doctor immediately to prevent further damage.

Blood Vessel Diseases



Heart Disease:

Coronary artery disease (CAD) is the term for the progressive closure of the arteries which supply blood to the heart muscle. When one or more of these arteries completely closes, the result is a heart attack. Symptoms of a heart attack can include chest pain; pain that radiates to the arms, neck, and/or jaw; nausea/vomiting; and/or sweating.

Cerebrovascular Disease:

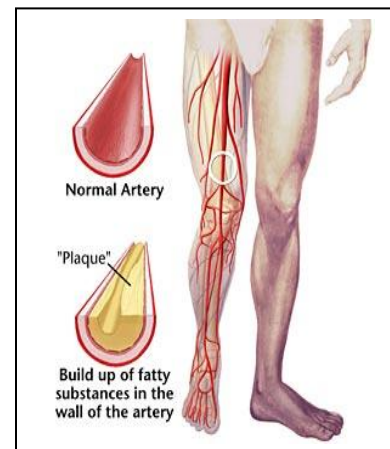
This is a disease of the arteries



that supplies the brain with oxygen and other nutrients. If a major artery to the brain completely closes, the person suffers a stroke. Symptoms of stroke can include one sided numbness or weakness, sudden confusion, sudden severe headache, trouble speaking, trouble seeing, sudden trouble walking or loss of balance and coordination, and facial droop.

Peripheral Vascular Disease (or PVD):

The same process that affects the arteries in the heart and brain can also affect the arteries to the rest of the body. After ten years of diabetes, a third of men and women no longer feel a pulse in their feet because of this disease. The most common symptom of PVD is pain in the calves, thighs, or buttocks that begins after some walking and stops with rest.



If you have any of these symptoms of blood vessel disease, notify your doctor immediately. Symptoms of heart disease or cerebral vascular disease are medical emergencies and need to be treated promptly.

In order to prevent damage to these blood vessels it is very important for you to control your:

- blood pressure
- cholesterol
- glucose
- weight

You should also exercise and not smoke or use other tobacco products.

To help prevent these complications:

- have your blood pressure checked each time you visit your doctor
- monitor your blood glucose at home daily; your doctor will do a hemoglobin A1c test (3 month average of blood glucose) every 3-6 months to see how well your glucose is being controlled
- check your weight at every doctor's appointment
- get your cholesterol checked yearly



Foot Care:

Diabetes is the leading cause of non-traumatic lower limb amputations.

Amputations and foot ulcers are the most common consequence of diabetic peripheral neuropathy (nerve damage caused by high blood glucose).

Wash your feet **daily** and dry your feet thoroughly—especially between the toes. Inspect your feet daily by looking at both feet (top, bottom, sides, and between the toes) for redness, swelling, and any other sign of skin problems. Look for cuts, calluses, blisters, and thick or ingrown toenails. If you're unable to bend over to see the bottom or sides of your feet, use a hand mirror to check for problems. Call your doctor **immediately** if you notice any problems.

Cut toenails straight across and file the sharp corners to match the contour of the toe. Make sure your shoes fit well and wear clean socks every day. Avoid going barefoot or sock-footed. Wear foot wear at the pool or beach. Inspect your shoes daily by feeling inside the shoe for torn linings, cracks, pebbles, nails, or other objects that may irritate the skin.



Eyes:

Diabetes is the leading cause of visual loss in the United States. The eyes are affected by diabetes over the long term. Although glaucoma (high pressure in the eye) and cataracts (a film over the lens in the eye) occur in non-diabetic patients, they appear sooner and more frequently in patients with diabetes.

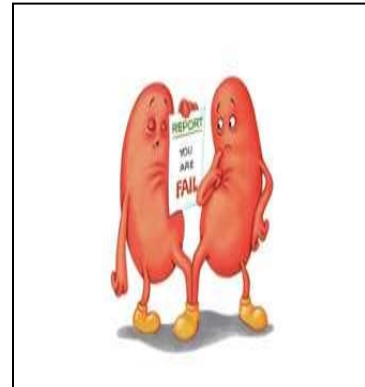
Retinopathy refers to changes seen on the retina of the eye indicating that the patient has had high blood glucose over time. If untreated, retinopathy can lead to blindness.

High blood pressure, tobacco products, and drinking alcohol may worsen retinopathy. See your eye doctor at least yearly for a dilated eye exam. If you notice sudden visual changes, sudden flashes of light in one or both eyes, a shadow or curtain on part of your visual field, or eye pain, contact your eye doctor immediately.

Kidneys:

Your kidneys have about a million tiny filters that rid your body of harmful waste products. These waste products are eliminated through the urine.

The kidneys regulate the salt and water content of your body. Glucose is also filtered through the kidneys.



Several years of high blood glucose will eventually lead to damage to this filtering system leading to kidney failure. When kidney disease (nephropathy) causes your kidneys to fail, you must either have a kidney transplant or go on dialysis.

In addition to high blood glucose, other factors that will contribute to the continuing destruction of the kidneys include high blood pressure, high cholesterol, and family history of kidney disease. If you experience kidney disease from diabetes, you increase your risk of developing other complications. These other complications include diabetic eye disease, diabetic nerve damage (neuropathy), high blood pressure, and edema.

To prevent damage (or further damage) to your kidneys, it is important to keep your blood glucose, blood pressure, and cholesterol under control. Your doctor will do a lab test called microalbumin every year to check for kidney damage.

Teeth:

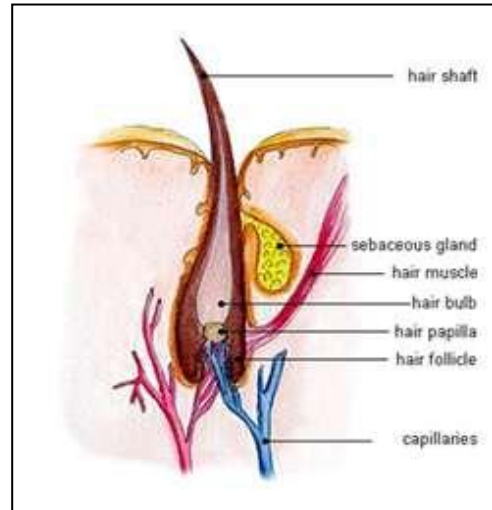
Diabetes is one of the leading causes of oral health problems like dry mouth and gingivitis which is the result of plaque and tartar buildup and is a major cause of tooth decay. Plaque and tartar inflame the gums and bacteria causes the gums to become infected, swollen, and tender.



If left untreated, gingivitis progresses to periodontal disease. This is the breakdown of the structures that support the teeth—the gums and bone. Regular dental exams—at least twice a year—should be used as opportunities for prevention, early detection, and treatment of oral health problems.

Skin:

Certain skin ailments, such as bacterial and fungal infections, are more common in diabetes. Slow wound healing in diabetes is a frequent cause of developing infections. The best treatment for management of diabetic skin conditions is to bring blood glucose levels under control. Weight loss is also helpful for many of these conditions.



Be sure to test the temperature of baths and showers with an elbow before stepping in to avoid burns from water that is too hot. Moisturize dry skin (except between the toes) but avoid lotions that contain alcohol since this can dry the skin.

Controlling blood glucose, cholesterol, and weight will help to reduce the risk of many of these complications. Not using tobacco products is also very important for your long term health and use of alcohol should be limited.

Hemoglobin A1c



Red Blood Cell

How does it work?

Hemoglobin is found inside red blood cells. Its job is to carry oxygen from the lungs to all the cells in the body. When diabetes is uncontrolled, you end up with too much glucose in the bloodstream. This extra glucose enters your red blood cells and attaches to hemoglobin. The more excess glucose in your blood, the higher the hemoglobin A1c test result will be.

Checking your blood glucose at home with a meter tells you what your blood sugar levels is at any one time, but suppose you want to know how you're doing overall. The A1c test gives you a picture of your average blood glucose control for the past 2 to 3 months. The results give you a good idea of how well your diabetes treatment plan is working.

In some ways, the A1c test is like a baseball player's season batting average, it tells you about a person's overall success. Neither a single day's blood test results nor a single

game's batting record gives the same big picture.

How does the A1C test look backward?

This lab result changes as old red blood cells in your body die and new red blood cells (with fresh hemoglobin) replace them. The amount of A1c in your blood reflects blood sugar control for about the past 120 days, or the lifespan of a red blood cell.

For someone with diabetes and high blood glucose levels, the A1c level is higher than normal. How high the A1c level rises depends on what the average blood glucose level was during the past weeks and months.

You should have your A1c level measured when your diabetes is diagnosed or when treatment for diabetes was started. To watch your overall glucose control, your doctor should measure your A1c level at least twice a year. There are times when you need to have your A1c level tested about every 3 months such as if you change diabetes treatment, start a new medicine, or if you are not meeting your blood glucose goals. You and your doctor will

want to keep a close eye on your overall control.

What are the limitations?

Although the A1c test is an important tool, it can't replace daily self-testing of blood glucose for those who need it. A1c tests don't measure your day-to-day control. You can't adjust your insulin on the basis of your A1c tests. That's why your blood sugar checks and your log of results are so important for staying in effective control.

Points to remember:

- The A1c test measures your average blood glucose control for the past 2 to 3 months.
- Check your A1c twice year at a minimum, or more frequently when necessary.
- It does not replace daily self-testing of blood glucose.



If your nurse or physician has not communicated the results of your most recent A1c, please ask them for that information.

Hemoglobin A1c results are measured in percentages. Compare your results to the chart to determine your average blood glucose for the past 3 months.

Your hemoglobin A1c is: _____%.

How does your A1c compare for degree of control and health risk on the chart below?

A1c %	Average Blood Glucose (mg/dl)	Degree of control	Health Risk
≤ 6	135	Very excellent	Very low
7	170	Excellent	Low
8	205	Good	Good
9	240	Fair	Medium
10	275	Poor	High
11	310	Very poor	Very high
12	345	Extremely poor	Extremely high
>13	380	Extremely poor	Extremely high

- A1c—5.6% or less = normal
- A1c 5.7-6.4% = borderline or pre-diabetes
- A1c 6.5% or higher = diabetes

If your A1c is $\geq 9\%$, speak with the physician who manages your diabetes about how to get better control of your blood glucose to help lower your A1c. The lower your A1c number, the lower the risk for complications from diabetes such as kidney failure, blindness, amputations, strokes, and heart attacks.

10 SURVIVAL **SKILLS**

PREPARING YOU TO

LIVE

WITH DIABETES

1. What is diabetes?

Diabetes is a condition that affects how well your body uses food, particularly carbohydrates.



When you eat carbohydrates, your body breaks it into a sugar called glucose. Insulin, a hormone made by your **pancreas**



carries the glucose into the cell where it is used for energy.

Diabetes is a result of absent or reduced insulin, or insulin not used well by the body. This causes blood sugar, or glucose, to rise

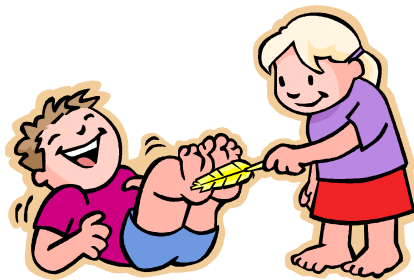
above normal. There are three main types of diabetes:

- **Type 1:**

The body does not make any insulin or makes very little insulin. These people **must** take 2 or more insulin shots everyday to live.



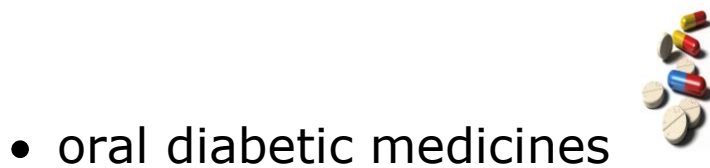
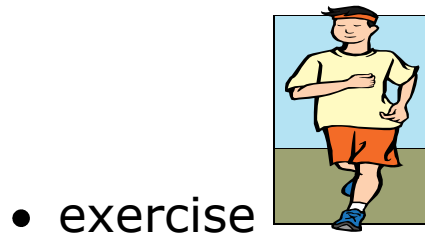
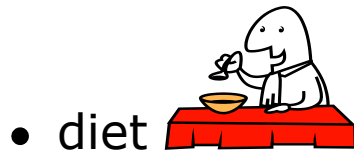
The cause of type 1 could be a history of diabetes in the family, a virus that injures the pancreas, or the body's immune system may mistakenly destroy the insulin-producing cells in the pancreas. Type 1, formerly known as "juvenile diabetes," usually occurs in children and young adults.



- **Type 2:**

The body does not make enough insulin or the body is not using it properly and the cells have become resistant.

Ways to control type 2 diabetes include:

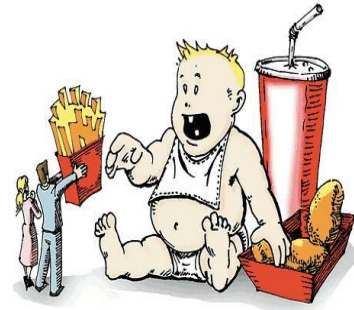


Risk factors include:

- a family history of type 2
- being overweight or obese
- physical inactivity
- a history of gestational diabetes or delivering a baby that weighs greater than 9 pounds
- being over 45 years old
- certain high-risk ethnic or racial groups such as:
 - African-American
 - Native-American
 - Hispanic

Children can also have type 2 diabetes because of their

diets,



obesity,

and/or lack of exercise.



Both type 1 and type 2 diabetes cannot be cured and do not go away, but both types can be managed to the point that you can live a normal life.



- **Gestational:**

This is a type of glucose intolerance during pregnancy. The hormones produced during pregnancy can cause the body to become less sensitive to insulin. Usually after delivering the baby, the blood glucose will return to normal for the mother.

The obstetrician should do a test for gestational diabetes around the 24th-28th week of pregnancy.

Having gestational diabetes can increase your risk for developing type 2 diabetes later.

2. Why check blood glucose?



Checking your blood sugar often allows the doctor to decide if the meal plan, exercise, and/or medications are working together to control your diabetes.

You should check blood glucose 2-4 times a day. Best times to check are:

- “Fasting” is before the first meal of the day—tells how your body has utilized the glucose during the night;
- 2 hours after meals—tells how your body is using the glucose from the meal just eaten;
- Sick or strange feeling—could signal a need to treat a high or low blood sugar, or the need to call your doctor for an illness;
- Before and after exercise—to see how much exercise will decrease your blood sugar;
- Before bedtime—blood glucose should be around 100 before bedtime.

If the doctor doesn't give a goal range, use the ADA's ranges:

- 70-130 fasting
(before the first meal of the day)
- <180—2 hours after eating

You do not need to use alcohol to clean your fingertips at home. Alcohol can cause a "false" reading (this is why we never use the first drop of blood in the hospital). Simply washing your hands with soap and water is adequate.



Diabetics have problems with dry skin and using alcohol at home can cause even drier skin.

3. Using a meter:

Testing with your blood sugar meter is very important for keeping track of day-to-day blood sugar levels. Meters are generally accurate and precise, but mistakes can come from the person doing the blood checks.

To avoid variations:

- Make sure you keep your meter clean.
- Don't use strips that are out of date.
- Keep the meter and strips at room temperature.

Record blood sugar readings in the logbook included in the kit. Take the logbook and meter to every doctor's visit. The doctor will review the logbook and adjust medicines or treatment if needed.



NEVER re-use a lancet. Staph is a bacteria that normally lives on the skin. Repeatedly using a lancet puts you at risk for this serious skin infection. The needle of the lancet also becomes dull which increases the amount of pain you may experience when sticking your finger to get the blood sample.

4. Preparing and giving insulin:



You cannot live without insulin. If your body does not make enough insulin, you will need to take insulin injections. Give insulin subcutaneously into fatty tissue just under the skin. Give insulin through an injection with a syringe or insulin pen, or an insulin pump. You will measure insulin in **units.**

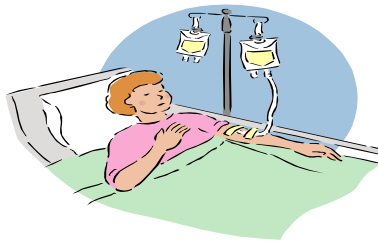
Insulin is not available in pill form.

Insulin affects different people in different ways, depending on factors such as:

- Fitness level
- Insulin sensitivity
- Activity level
- Injection site
- Food and/or beverage intake
- Other medications
- Emotions such as stress

Many different kinds of insulin are available with different onsets, peaks, and durations.

During your hospital stay, you will receive teaching for insulin drawing up and injecting.



Giving injections into the same spot can cause thickening of the skin. This makes it harder for the body to absorb the injected insulin. For this reason, you need to rotate the area (or site) you use for injection.

Sites should be about 1 inch apart. Do not inject into moles or scars. Use these sites for injections:



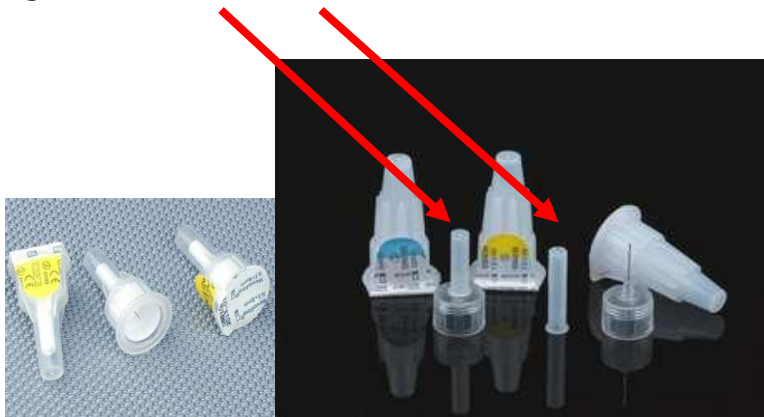
Do not change the amount of insulin you take without your doctor's approval.

Using an Insulin Pen



Insulin pens come in different doses and are made by several different companies. The pens are simple to use, and even young children or patients with vision problems (such as blindness) can use them with ease. The basics of using an insulin pen include:

1. Screw on a new needle each time you give an injection. Remove the **needle cover**.



2. Prime the pen to remove any air from the pen. Air will not hurt you but you may not get an accurate amount of insulin if you fail

to prime the pen correctly each time. As you're holding the pen away from your face, turn the dial (or plunger) on the end of the pen to "2" and press the button (or "dial") on the end of the pen.

You should see a squirt, stream, or perhaps a drip of insulin come from the end of the needle. If you do not see this after pressing the button, dial the pen to "2" again and press the button on the end of the pen. Watch for the insulin.



3. Now, turn the knob on the end of the pen to the number of units that you will be injecting.



4. Hold the insulin pen in the palm of your hand (as seen in the picture) with your thumb on the 'dial' end of the pen. Insert the needle into your injection site.



5. Press the button on the end of the pen. If you hold the pen with the numbers facing toward you, you will see the pen dial back down to "0" as you're giving the injection.
6. Count to five.
7. Remove the pen and dispose of the needle in a container. Most counties now allow the use of a plastic container with a lid that screws on. If you aren't sure what's allowed in your area, check with your local health department.

You will hear a 'click' from the pen as you're priming the pen or dialing up the dose you will

be taking. This is normal. Each 'click' is 1 unit of insulin.

After your injection, you may notice a **slight** amount of dampness on the skin at the injection site. This will be normal. However if you notice a large puddle or if you see insulin running down your arm, leg, or abdomen from the injection site, you might not have given the injection correctly. Do not give another injection but realize your blood sugar may be high or higher than normal the next time you check it. If so, make sure you're following all the steps listed above. If you continue to have trouble using the insulin pen, contact either your doctor's office or the drug store where you got your pen for further instructions.

Drawing Up Insulin:



1. Wash hands with soap and water.
2. Wipe the top of the insulin bottle with alcohol.

3. Fill the empty syringe with air equal to the amount of insulin you will take.
4. Push the needle into the bottle. Keep the bottle in an upright position. Push the air from the syringe into the insulin bottle. This makes it easier to draw out the insulin.
5. Keep the needle in the bottle. Turn the bottle upside down. Pull the plunger back. Fill the syringe with the number of units of insulin you need.
6. Look at the insulin in the syringe. If you see air bubbles, push the insulin back into the bottle and slowly draw it up again. Pull the needle out of the bottle.



Injecting insulin:

1. Clean the injection site with soap and water or an alcohol swab. Let the area dry.
2. Remove the needle cover from the syringe. Hold the syringe like a pencil. Gently pinch up a fold skin at the injection site.

3. Position the needle at a 90 degree angle (straight up and down). Insert the entire length of the needle into the fold of skin.
4. Let go of the pinched skin. Push the plunger all the way down.
5. After injecting the insulin, slowly count to 5 and pull the needle out.
6. Put your needles in a covered puncture proof container.



Check with your local waste authority or health department about the proper way to dispose of your used needles and lancets.

(For more information about diabetes medications, see pages 73-76.)

5. Low blood sugar (hypoglycemia) symptoms and treatment:

Consider a blood sugar of less than 70 too low. You may feel symptoms before your blood sugar reaches 70. The reasons for low blood glucose are:

- Missed or delayed meal; or eating less than usual.
- More physical activity than usual.
- Taking too much insulin or other diabetic medications.

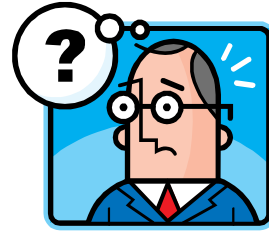
Early warning symptoms can include:

- numbness or tingling around the mouth or lips
- sweaty or clammy feeling

- hunger



- confusion



- dizziness or shaky feeling



- faster than normal heartbeat

- headache



- nervousness or irritability



Untreated low blood sugar can lead to seizures, unconsciousness, or coma. If low

blood sugar occurs more than twice a week, you should notify your doctor.

When treating a low blood sugar, remember the **RULE OF 15**.

1. Check the blood sugar. If less than 70, eat or drink 15 grams of **fast acting carbohydrates** such as:

- 3-4 glucose tablets
- 7-8 Lifesavers
- 4-5 pieces of hard candy (not sugar free)
- 4 ounces of juice or regular soft drink (not diet)



2. Wait 15 minutes and re-check the blood glucose.

3. If the symptoms have not gone away and/or the blood sugar is still less than 70, eat or drink another serving from the list.
4. Repeat until blood sugar is more than 70.

If it is going to be more than 30 minutes before your next meal, you need a snack with carbohydrates and protein, such as ½ sandwich or crackers with peanut butter or cheese. Do not give snacks until the blood sugar is **greater than 70** because the blood sugar will not increase until the snack has digested.



6. High blood sugar (hyperglycemia) symptoms and treatment:

High blood sugar is any number above your target blood sugar range and can occur for many reasons such as:

- Lack of exercise
- Skipping diabetic medications and/or insulin
- Not taking the right amount of medication
- Stress
- Illness
- Over eating
- Not following the meal plan

Because high blood sugar usually happens slowly, the signs are not always easy to notice. Some of the symptoms include:

- feeling very thirsty



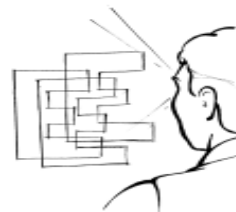
- having to go the bathroom often



- feeling very tired or weak



- having blurred vision or problems seeing



What should you do if you're having a high blood sugar?

1. Test your blood sugar every couple of hours.
2. Eat your regularly planned meals.
3. Keep taking your diabetes medicines at the usual times.
4. Drink plenty of sugar free liquids.



Call your doctor if:

1. You have vomiting or diarrhea for more than 6 hours.
2. Your blood sugar is greater than 240 before meals and stays there for more than 24 hours.
3. You have a fever for a couple of days and aren't getting any better.
4. You just aren't certain of what to do to take care of yourself.

7. Meal/Carbohydrate plan:



The old suggestions of just limiting foods that contain sugar have changed. There are no longer any forbidden foods for a person with diabetes.

The American Diabetes Association recommends an eating plan for diabetes based on MyPlate (see page 43 for example) for a well-balanced diet. Selecting foods from all food groups gives you the nutrients needed to stay healthy. The meal plan should work well with your lifestyle and routine.

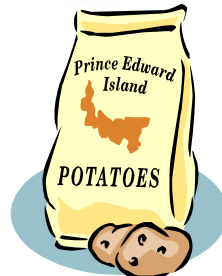
When you have diabetes, you need a **consistent carbohydrate diet** to maintain blood sugar control. A consistent carbohydrate diet means you should have approximately the same amount of carbohydrates each day.

Carbohydrates are the nutrient that affects the blood sugar the most. Many of the foods

you eat contain carbohydrates. They are an important part of the diet since they give you the glucose your body and brain need to function. Many of these foods also contain important vitamins and minerals the body needs to work well.

Some examples of 1 serving (approximately 15 grams) of carbohydrate are:

- Bread (1 slice)
- Crackers (4 to 6)
- Cereals (unsweetened, $\frac{3}{4}$ cup)
- Pastas (1/3 cup)
- Grains (1/2 cup)
- Milk (1 cup)
- Fresh fruits (1 small)
- Fruit juices (1/2 cup)
- Peas/Corn (1/2 cup)
- Mashed Potatoes (1/2 cup)
- Baked Potato (1 small, 3 ounces)
- All Desserts (portion sizes vary)



Your weight, age, and activity level help to decide the total number of carbohydrates that you will need to eat at a meal or snack.



A dietitian can help you decide the amount of carbohydrates that may be right for you. A general rule is that active women need about 45 grams of carbohydrates at each meal and active men need 60 grams at each meal.



The food label can provide you with the information you need for meal planning. Look at the grams of total carbohydrate



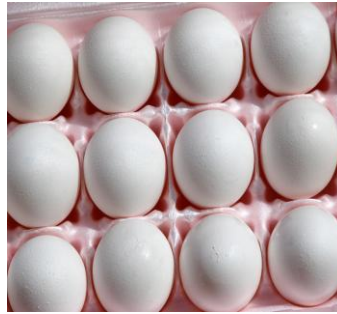
Nutrition Facts	Amount/serving	%DV*	Amount/serving	%DV*
Serv. Size 1 cup (249g)	Total Fat 12g	18%	Sodium 940mg	39%
Servings About 2	Sat. Fat 6g	30%	Total Carb. 24g	5%
Calories 250	Polyunsat. Fat 1.5g		Dietary Fiber 1g	4%
Fat Cal. 110	Monounsat. Fat 2.5g		Sugars 1g	
*Percent Daily Values (DV) are based on a 2,000 calorie diet.	Cholest. 60mg	20%	Protein 10g	20%
	Vitamin A 0% • Vitamin C 0% • Calcium 6% • Iron 8%			

INGREDIENTS: WATER, CHICKEN STOCK, ENRICHED PASTA (SEMOLINA WHEAT FLOUR, EGG WHITE SOLIDS, NIACIN, IRON, THIAMINE MONONITRATE [VITAMIN B1], RIBOFLAVIN [VITAMIN B2] AND FOLIC ACID), CREAM (DERIVED FROM MILK), CHICKEN, CONTAINS LESS THAN 2% OF: CHEESES (GRANULAR, PARMESAN AND ROMANO PASTE [PASTEURIZED COW'S MILK, CULTURES, SALT, ENZYMES], WATER, SALT, LACTIC ACID, CITRIC ACID AND DISODIUM PHOSPHATE), BUTTER (PASTEURIZED SWEET CREAM [DERIVED FROM MILK] AND SALT), MODIFIED CORN STARCH, SALT, WHOLE EGG SOLIDS, SUGAR, DATEM, RICE STARCH, GARLIC, SPICE, XANTHAN GUM, CHEESE FLAVOR (PARTIALLY HYDROGENATED SOYBEAN OIL, FLAVORINGS AND SMOKE FLAVORING), MUSTARD FLOUR, ISOLATED SOY PROTEIN AND SODIUM PHOSPHATE.

rather than the grams of sugar. “Total carbohydrate” on the label includes sugar, complex carbohydrate, and fiber. If you look only at the sugar number, you may end up excluding healthy foods such as fruits and milks thinking they are too high in sugar. You might also eat too many foods such as cereals and grains that have no natural or added sugar, but do contain a lot of carbohydrate.

Fiber can help control blood sugar because it slows digestion of food. After eating high fiber carbohydrates, there is a gradual increase in blood sugar. A lower fiber carbohydrate choice will cause blood sugar to increase more

quickly. If a food has 5 grams or more fiber in a serving, subtract half the fiber grams from the total grams of carbohydrate for a more accurate estimate of the carbohydrate content.

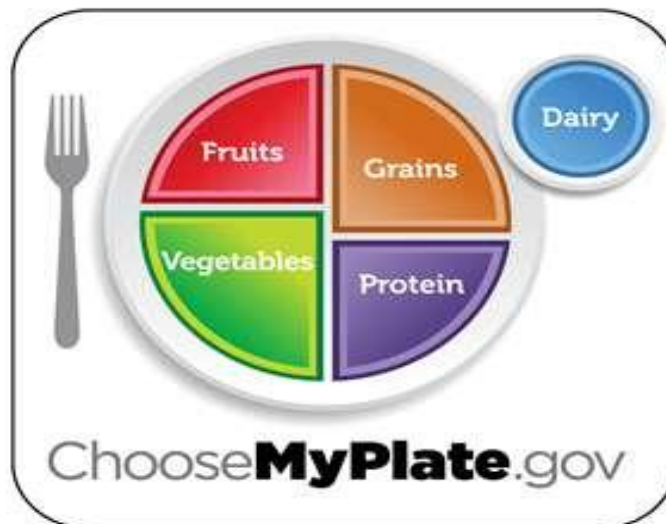


Protein is also very important in your diet. Protein takes longer to digest and will prevent blood sugars from “spiking” then dropping too quickly. Some examples of protein are beef, pork, fish, poultry, seafood, eggs, milk, cheese, and peanut butter. It’s best to choose lean and low fat protein foods in order to limit harmful saturated fat and unnecessary calories.



Many foods claim to be “sugar free” or “diabetic foods”. Just because foods have these labels does not mean they don’t contain carbohydrates.

Read the food label noting the serving size and total carbohydrates for that serving size. People with diabetes were once taught to look for the “sugar content” on the label, this is unnecessary because the sugar content is included with total carbohydrates.



As a guide, use the plate model to make meals:

- at least $\frac{3}{4}$ of the plate with whole grains, vegetables, and fruit;
- no more than $\frac{1}{4}$ of the plate with meat, poultry, fish, or other sources of protein.

If you notice that a food consistently causes a high reading, reduce the portion size or omit that food item.

Some important tips to remember:



- Eat 3 meals a day
- Do not skip meals
- Eat at the same time each day
- Watch portion sizes
- Limit high sugar foods and drinks
- Eat meals 4-5 hours apart
- Check your blood sugar 2 hours after meals

8. Why do you need to exercise if you have diabetes?



Exercise is important for overall health but for people with diabetes it can be especially helpful. Usually diabetics have a host of other problems along with their high blood glucose including high blood pressure, high cholesterol, obesity, stress, depression, and often times cardiac diseases.

Exercise can:

- Lower and help control blood sugar
- Lower blood pressure
- Help to lower LDL cholesterol levels
- Keep heart and blood vessels healthy
- Possibly reduce medications
- Help with weight loss
- Reduce stress

Some general suggestions:

1. Start slowly, even 5-10 minutes a day can make a difference.
2. Pick an enjoyable activity.
3. Check blood sugar before and after exercise.
4. Don't exercise if blood sugar is over 240 or below 100.
5. Watch for signs of low blood sugar.



9. Wearing medical ID:

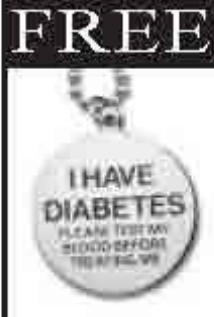
Millions of people have medical conditions which medical staff needs to be aware of. Medical alert bracelets can alert health care providers to any obvious causes of unresponsiveness or a decreased level of consciousness. The benefits of having medical identification are:

- Speaks for you if you're unable to speak for yourself.
- Alerts medical professionals about your medical history, helping to speed proper treatment.



- Can provide notice to your family in an emergency.
- Provides you and your family peace of mind.
- Can save your life!



	DIABETES EMERGENCY NECKLACE		
	In case of Emergency, the attending physician or paramedic needs to know you have diabetes.		
	Name _____		
	Address _____		
	City _____	State _____	Zip _____
Send a Self-Addressed, Stamped Envelope To: Free Diabetes Necklace Diabetes Research and Wellness Foundation™ • P.O. Box 96046, Washington, DC 20090-6046			

- For the free necklace, fill out this coupon
- Remember to provide a self-addressed stamped envelope
- Send to:
 - Free Diabetes Necklace
 - Diabetes Research and Wellness Foundation
 - P O Box 96046
 - Washington, DC 20090-6046
- Or you can order online at <http://www.diabeteswellness.net/shop/products.asp?cat=10>
- Online orders are charged \$2.95 shipping and handling fees to be paid at time order is placed
- Please allow 4-6 weeks for delivery

10. Sick day rule:



During illness, diabetes is harder to control. Even a cold can cause blood sugar to get out of control.

Some key points to remember are to call the doctor if you:

1. have diarrhea or vomiting that last 6 hours or longer;
2. have blood sugars greater than 240 for 24 hours;
3. have fever greater than 100 degrees F for 48 hours;
4. just aren't sure about what to do to take care of yourself.

High blood sugar along with sweating, vomiting, or diarrhea can lead to dehydration.

Remember:

1. Diabetes medicines are used to lower blood sugar and are usually given with meals, however if you're sick, having high blood sugar, and not eating, call your physician before discontinuing use of these medicines.
2. Test your blood sugar more often, perhaps every 2-4 hours.
3. Try to eat the same amount of carbohydrates in your meal plan. If vomiting or nauseated, try to drink regular—not diet—sodas, ginger ale, Gatorade, Kool-Aid, or juices. Even though blood sugars will be high, you need to continue to take in the same amount of carbohydrates to mend and keep up your body.
4. Drink plenty of water or non-caffeinated beverages to prevent dehydration.

Family Risk Assessment

Could you have diabetes and not know it?

There are almost 26 million Americans with diabetes—nearly 7 million people have diabetes and don't know it! Take this test to see if you are at risk for having diabetes.

Diabetes is more common in African Americans, Latinos, Native Americans, Asian Americans, and Pacific Islanders. If you are a member of one of these ethnic groups, you need to pay special attention to this test.

To find out if you are at risk, write in the points next to each statement that is true for you.

Write your score
in the box.

1. How old are you?

Less than 40 years (0 points)

40-49 years (1 point)

50-59 years (2 points)

60 years or older (3 points)

2. Are you a man or woman?

Man (1 point)

Woman (0 points)

3.If you are a woman, have you ever been diagnosed with gestational diabetes?

Yes (1 point)

No (0 points)

4.Do you have a mother, father, sister, or brother with diabetes?

Yes (1 point)

No (0 points)

5.Have you ever been diagnosed with high blood pressure?

Yes (1 point)

No (0 points)

6.Are you physically active?

Yes (0 points)

No (1 point)

7.What is your weight status?
(see chart on page 52)

Total points

Height	Weight (lbs)		
4' 10"	119-142	143-190	191 +
4' 11"	124-147	148-197	198 +
5' 0"	128-152	153-203	204 +
5' 1"	132-157	158-210	211 +
5' 2"	136-163	164-217	218 +
5' 3"	141-168	169-224	225 +
5' 4"	145-173	174-231	232 +
5' 5"	150-179	180-239	240 +
5' 6"	155-185	186-246	247 +
5' 7"	159-190	191-254	255 +
5' 8"	164-196	197-261	262 +
5' 9"	169-202	203-269	270 +
5' 10"	174-208	209-277	278 +
5' 11"	179-214	215-285	286 +
6' 0"	184-220	221-293	294 +
6' 1"	189-226	227-301	302 +
6' 2"	194-232	233-310	311 +
6' 3"	200-239	240-318	319 +
6' 4"	205-245	246-327	328 +
	(1 point)	(2 Points)	(3 Points)
If you weigh less than the amount in the left column (0 points)			

If you scored 5 or higher:

You are at increased risk for having type 2 diabetes. However, only your doctor can tell for sure if you do have type 2 diabetes or prediabetes (a condition that precedes type 2 diabetes in which blood glucose levels are higher than normal). Talk to your doctor to see if additional testing is needed.

Lower your risk:

The good news is that you can manage your risk for type 2 diabetes. Small steps make a big difference and can help you live a longer, healthier life.

The information contained in this assessment is not a substitute for medical advice or treatment, and the American Diabetes Association recommends consultation with your doctor or health care professional.

For more information, visit www.diabetes.org or call 1-800-DIABETES.

If you scored 5 or more, how do you get tested for diabetes?

1. **Individual or group private health insurance**—See your health care provider. If you don't have a provider, ask your insurance company about providers who take your insurance. Deductibles and co-pays will apply.
2. **Medicaid**—See your health care provider. If you don't have a provider, contact a state Medicaid office or contact your local health department.
3. **Medicare**—See your health care provider. Medicare will pay the cost if the provider has a reason for testing. If you don't have a provider, contact your local health department.
4. **No insurance**—Contact your local health department for more information about where you could be tested or call your local health clinic.

Diabetes Facts You Should Know:

Diabetes is a disease that requires you to take ownership. You will make decisions every day that affect your life and your health. These decisions include the foods you chose to eat, whether you monitor your blood glucose, and if/when you take your diabetes medicines.

Diabetes is a serious disease that can lead to:

- blindness
- heart disease
- stroke
- kidney failure
- amputation

Uncontrolled blood glucose along with not following your physician recommendations can lead to these conditions.

Diabetes kills almost 210,000 people each year.

Education is the key to controlling your diabetes.

For more information about our education services, see pages 63-64.

For more information on diabetes, call 1-800 DIABETES or visit www.diabetes.org.

Nutrition Management Plan

It is important to decide what improvements you would like to make in your eating plan in order to improve blood sugar control. Also, for type 2 diabetes weight control is very helpful in controlling blood sugar levels. Even a small amount of weight loss will usually improve blood sugar readings.

Use the diet recall on page 47 to help you evaluate your current habits and decide on your plan. Goals should be **I-SMART**: **I**nspiring, **S**pecific, **M**easureable, **A**chievable, **R**elevant, and **T**ime specific. You may want to choose from the following list of goals or make your own. Remember your health care team is always available to help.

Ideas to Control Weight and Improve Blood Sugar Control

Be sure to circle at least one goal.

1. Eat breakfast.
2. Increase vegetable intake to ____ servings per day.

3. Limit intake of fried foods to ____times per month.
4. Limit/avoid regular soft drinks and sweet tea. Specify amount _____.
5. Measure food portions ____ times per week.
6. Record food intake ____ times per week. Review for meal timing, portion size, carbohydrate content.
7. Look at food labels on ____ number of foods for portion size and carbohydrate content.
8. Eat ____ meals per week at the table without watching television.
9. Do not skip meals and aim to eat every 4-5 hours. Write down the specific times you are aiming for. Set a phone alarm or find another reminder to eat your set times.
10. Contact favorite restaurants or fast food establishments to learn about food options. Change food choices for

____ meals to control carbohydrate and calorie intake.

11. Write in your own goal:

Typical meal re-call for 1 day:

Breakfast:

Lunch:

Dinner/Supper:

If your doctor writes an order for you to attend the outpatient diabetes education class, please bring this book with the information you have entered to the class.

If your doctor has not spoken to you about the class, please read the information on the following pages. If you are interested in attending, please speak with your doctor about how to get enrolled.

OUTPATIENT DIABETES PROGRAMS

Diabetes Self-Management—This is a day-long, informal course in a relaxed environment with a team of a registered nurse, a registered dietitian, and an exercise physiologist. It is taught twice a month at Maury Regional Medical Center and is accredited by the American Diabetes Association. Topics covered include defining diabetes, medications, meal planning, proper exercise, stress reduction, prevention of long-term complications, and ongoing care for diabetes.

Medical Nutrition Therapy—This service is one-on-one instruction with a registered dietitian on nutrition management of diabetes.

Gestational Diabetes—This course provides information about self-management of diabetes during pregnancy.

Diabetes Education Group—This free program is held monthly—the first Tuesday of every month at 11:30—at Maury Regional Medical Center. Topics and speakers vary.

Additional classes may be offered, based on demand. Costs for these services vary and may be covered by your insurance plan. You are encouraged to consult with your insurance provider regarding coverage. If you are uninsured, we will work with you in making financial arrangements. For more information about our services, call 931-540-4324.

Speak Up



DIABETES: Five ways to be active in your care in the hospital.

Living with diabetes can make you good at managing the ups and downs of the disease. You can handle sick days, a trip to the store, or a trip across the country. Going to the hospital, however, presents new challenges. Do not let your diabetes care take a back seat while you are in the hospital. You should always be an active participant in your care.

Before you go to the hospital, talk with your doctor or diabetes educator. If you have to go to the emergency room, make sure hospital staff knows how to get in touch with your diabetes team. While in the hospital, ask a trusted family member or friend to be your advocate. An advocate can ask questions that you may not think about or be able to ask.

Here are five things that you can do to take care of your diabetes while you are in the hospital.

1. Find out how your diabetes will be managed.

Do not assume that hospital nurses or other caregivers will know how to manage your diabetes. Your diabetes care team should work closely with them to help care for you. In addition:

- Do not be afraid to remind your caregivers that you have diabetes.
- Always wear your diabetes ID. This tells hospital staff that you have diabetes. You may need to take it off for treatment or a test. Remember to put it back on.
- Ask what changes will be made to your current diabetes care plan.
- Ask how often and when your blood sugar will be checked.
- If you take insulin at home, ask the doctor taking care of you in the hospital to write insulin orders. The nurses will follow these orders during your stay.
- If you wear an insulin pump, ask if you can leave it on during your hospital stay.
- Tell the nurse if you think you are having symptoms of low or high blood sugar.

2. Ask what will happen with your medicines.

People with diabetes can be affected by new medicines. Speak up if you have had any problems or reactions to medicines in the past.

Also ask:

- Which medicines to stop taking before your hospital stay.
- What medicines are being given to you each time and why. If you are forgetful, keep a log. Often medicines are given twice or forgotten.
- What to do if you are sick to your stomach or cannot keep medicine down. Your doctor may need to make changes in your diabetes medicines.
- What to do if medicines are not given on time or before your meal. Do not let anyone give you rapid acting insulin if your meal has not arrived.
- If you have surgery, will your blood sugar be affected by the medicines used to put you to sleep.

- If your blood sugar will be affected by new medicines given to you after surgery or for your illness.
- If you will be given insulin, ask what type you will be given and when. You may not normally take insulin, but you may be given it in the hospital.

3. Know what will happen with your diet.

Talk to the hospital dietitian about what you like to eat. You need to know:

- Will your food and meals be adjusted to help you achieve blood sugar levels in your target range.
- What you should do if meals are not on time, if your blood sugar has not been checked, or your medicines do not arrive before your meal.
- How your blood sugar will be managed if you cannot eat.
- When you will be able to eat normal meals.
- To alert the nurse if a visitor brings you food. You may need to have your insulin adjusted.

4. Avoid getting an injection.

People with diabetes have a higher risk of getting an infection while in the hospital. You should:

- Watch to see if caregivers wash their hands. Speak up if they do not.
- Make sure caregivers wear clean gloves. Do not be afraid to remind them.
- Tell your nurses about any cuts, sores, or bruises that have not healed.
- Remember to wash your hands.
- Ask sick relatives or friends to stay home until they feel better.

In addition, make sure you get a flu shot every year and that your pneumonia vaccine is still current.

5. Find out what will happen when you go home.

Have your doctor explain what you can expect after leaving the hospital. Ask about the follow-up care that you will need. Make

sure that you or your advocate understand the instructions. Find out:

- What will happen to your blood sugar while you are getting better.
- The signs and symptoms of low and high blood sugar and how to treat them at home.
- What signs and symptoms should cause you to call the doctor.
- When you should see your doctor for follow up care.
- If you are going home on insulin. If you do not usually take insulin, make sure you get instruction and show the nurse that you can give yourself an insulin shot. Ask how long you will need to take insulin at home.
- If you have a wound, how long it will take for it to heal. Healing can take longer for people with diabetes.
- When you can go back to your normal exercise, medicines, and diet.

The goal of the Speak Up program is to help patients and their advocates become more informed and involved in their health care.

Diabetes: Five ways to be active in your care at the hospital is supported by:

American Association of Diabetes Educators

www.diabeteseducator.org

American Diabetes Association

www.diabetes.org

Juvenile Diabetes Research Foundation

www.jdrf.org

The Joint Commission

www.jointcommission.org

The Joint Commission is the largest health care accrediting body in the United States that promotes quality and safety



MAURY REGIONAL MEDICAL CENTER

Diabetes Medications Fact Sheet

(for patient education purposes ONLY – check with your physician or pharmacist before starting any new medications or if you experience any side effects after starting a new medication)

****This is NOT an all-inclusive list**

Drug Class (Oral)	What it's for	Things to remember	What to watch for
Biguanides: Metformin (Glucophage®) Metformin ER (Glucophage XR®)	Decreases the amount of sugar your body makes	<ul style="list-style-type: none"> Take with meals (Metformin ER with evening meals) Drink plenty of water Discuss alcohol use with your doctor while taking this drug 	<ul style="list-style-type: none"> Upset stomach (diarrhea, nausea, cramps, vomiting) Call your doctor if you have decreased appetite, rapid, shallow breathing, muscle pain/cramping, tiredness or weakness, or a general sense of not feeling well
Sulfonylureas: Glyburide (Diabeta®, Glynase®) Glipizide (Glucotrol®) Glimepiride (Amaryl®)	Increases the amount of insulin your body makes	<ul style="list-style-type: none"> Take with the first meal of the day 	<ul style="list-style-type: none"> May cause weight gain Signs of low sugar levels (weakness, confusion, sweating, hunger) Rash (call your doctor if this happens)
Thiazolidinediones: Pioglitazone (Actos®) Rosiglitazone (Avandia®)	Makes your body more sensitive to insulin	<ul style="list-style-type: none"> May take a few weeks to a few months to see full benefit of this medication 	<ul style="list-style-type: none"> Signs of weight gain, swelling of the feet/ankles, or difficulty breathing (Call your doctor if this happens)

Meglitinides: Repaglinide (Prandin®) Nateglinide (Starlix®)	Increases the amount of insulin your body makes	<ul style="list-style-type: none"> Take 15-30 minutes before each meal (if you skip a meal, you need to skip the dose!) 	<ul style="list-style-type: none"> Weight gain Headache Upset stomach (nausea or diarrhea) Signs of low sugar levels (weakness, confusion, sweating, hunger)
DPP-4 Inhibitors: Sitagliptin (Januvia®) Saxagliptin (Onglyza®)	Increases the amount of insulin your body makes and decreases the amount of sugar your body stores	<ul style="list-style-type: none"> If you miss a dose, skip it and take the next dose at the correct time. Do not double up on doses! 	<ul style="list-style-type: none"> Signs of low sugar levels (weakness, confusion, sweating, hunger) Report signs of nausea, vomiting, stomach pains or anorexia

Drug Class (Injections)	What it's for	Things to Remember	What to watch for
GLP-1 Receptor Agonists: Exenatide (Byetta® twice daily or Bydureon® weekly) Liraglutide (Victoza® once daily)	Increases the amount of insulin your body makes and decreases the amount of sugar your body stores Keeps you feeling fuller longer after eating	<ul style="list-style-type: none"> Injections can be in the thigh, abdomen or upper arm, but rotate your injection site every time Take Byetta® 60 minutes before your morning and evening meals Take Bydureon® once a week Victoza® can be taken at any time of the day Keep in the refrigerator 	<ul style="list-style-type: none"> Upset stomach (diarrhea, nausea, vomiting, heartburn) Report signs of severe stomach pains to your doctor May cause weight reductions Redness at the injection site
Rapid Acting Insulins: Insulin Aspart (Novolog®)	Replaces insulin to help control your blood	<ul style="list-style-type: none"> Take your rapid-acting insulin 0-15 minutes before eating. Do not let 	<ul style="list-style-type: none"> Signs of low sugar levels (weakness, confusion, sweating, hunger)

Insulin Lispro (Humalog®)	sugars	<p>too much time go between the injection and eating or your blood sugars will drop too low!</p> <ul style="list-style-type: none"> • Don't use the same site for your injections every time 	<ul style="list-style-type: none"> • Weight gain
<p>Long Acting Insulins: Insulin Detemir (Levemir®) Insulin Glargine (Lantus®)</p>	Replaces insulin to help control your blood sugars	<ul style="list-style-type: none"> • Administer your long-acting insulin at the same time every day • Don't use the same site for your injections every time 	<ul style="list-style-type: none"> • Signs of low sugar levels (weakness, confusion, sweating, hunger)

Checking your blood sugars every day as directed by your doctor is very important!
 Look out for signs that your sugars may be too low or too high.

Signs your sugars may be too HIGH:	Signs your sugars may be to LOW:	If your sugar is < 70, eat or drink:
<ul style="list-style-type: none"> • Extra thirsty • Urinating more than usual • Feeling tired or achy • Nausea • Weight loss • Blurred vision 	<ul style="list-style-type: none"> • Weakness • Confusion • Hunger • Sweating • Feeling anxious • Shaky • Dizziness 	<ul style="list-style-type: none"> • 3-4 Glucose tablets <i>or</i> • ½ cup of fruit juice or soda <i>or</i> • 4-5 pieces of hard candy <i>or</i> • 7-8 Lifesavers <p><i>Wait 15-20 minutes and check your levels again. Repeat if sugars are still too low!</i></p>

Resources Used:

1. <http://www.diabetes.org/living-with-diabetes/treatment-and-care/medication/insulin/insulin-storage-and-syringe.html>
2. <http://www.uptodate.com>

Sources and for more information:

American Diabetes Association

<http://www.diabetes.org/home.jsp>

The Joint Commission

www.jointcommission.org

Up-To-Date

<http://www.uptodate.com>