Managing Gestational Diabetes

A PATIENT'S GUIDE TO A HEALTHY PREGNANCY

U.S. Department of Health and Human Services
National Institutes of Health
Eunice Kennedy Shriver National Institute of Child Health and Human Development

Dear Patient,

The feelings that surround pregnancy—excitement, anxiety, and hope—often give way to many questions. Will my child's eyes be blue or brown? When will I have my baby? How big will my baby be? What does the future hold for my family?

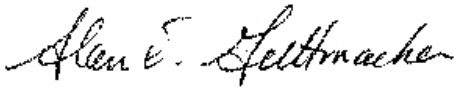
Finding out that you have a "condition," even a manageable one, can raise a different set of questions. Will my baby be healthy? Will the condition affect my ability to have other children? What can I do to ensure my own health and the health of my baby?

For the last 40 years, the *Eunice Kennedy Shriver* National Institute of Child Health and Human Development (NICHD) has been working to answer these types of questions through research and clinical practice to improve the health of mothers, children, and families.

Managing Gestational Diabetes: A Patient's Guide to a Healthy Pregnancy provides some general guidelines for keeping yourself healthy and for promoting the best outcomes for your baby if you have gestational diabetes. The booklet describes gestational diabetes, its causes, and its features and includes a general treatment plan to help control the condition.

Using this information, you and your family can make informed decisions about your care. You will also be better able to work with your health care provider to develop a treatment plan that addresses your specific needs situation to ensure that you and your baby are healthy.

I hope this booklet helps you meet the challenges of gestational diabetes that you will face over the next few months, and that you will enjoy the new addition to your family when he or she arrives.



Sincerely yours,

Alan E. Guttmacher, M.D.
Director, NICHD

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A Patient's Guide to a Healthy Pregnancy

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Managing Gestational Diabetes

A Patient's Guide to a Healthy Pregnancy

Gestational diabetes (pronounced jess-TAY-shun-ul die-uh-BEET-eez) is one of the most common health problems for pregnant women. It affects about 5 percent[1] of all pregnancies, which means there are about 200,000 cases each year. If not treated, gestational diabetes can cause health problems for mother and fetus.

The good news is that gestational diabetes can be treated, especially if it's found early in the pregnancy. There are some things that women with gestational diabetes can do to keep themselves well and their pregnancies healthy. Controlling gestational diabetes is the key to a healthy pregnancy.

This booklet gives women who have been diagnosed with this condition the information they need to talk to health care providers, dietitians, and family members and friends about gestational diabetes.

What is gestational diabetes?

Gestational Diabetes is a kind of diabetes that only pregnant women get. In fact, the word **gestational** means "during pregnancy." If a woman gets diabetes or high blood sugar when she is pregnant, but she never had it before, then she has gestational diabetes. Its medical name is *gestational diabetes mellitus* (pronounced MELL-eh-tiss) or GDM. To learn what gestational diabetes is, you need to know a few things about diabetes in general.

What is diabetes?

Diabetes means your blood sugar is too high. Diabetes is a disease of **metabolism**, which is the way your body uses food for energy and growth. Your stomach and intestines break down (or digest) much of the food you eat

After digestion, the glucose passes into your bloodstream, which is why glucose is also called **blood sugar**. This booklet uses the terms glucose and blood sugar to mean the same thing. Once in the blood, the glucose is ready for your body cells to use. But your cells need **insulin** (pronounced IN-suh-lin), a hormone made by your body, to get the glucose. Insulin "opens" your cells so that glucose can get in. When your metabolism is normal, your body makes enough insulin to move all the glucose smoothly from your bloodstream into your cells.

If you have diabetes, your insulin and glucose levels are out-of-balance. Either your body isn't making enough insulin, or your cells can't use insulin the way they should. Without insulin, the glucose that can't get into your cells builds up in your bloodstream. This is called **high blood sugar** or **diabetes**. After a while, there is so much glucose in the blood that it spills over into your urine and passes out of your body. The medical name for diabetes, *diabetes mellitus*, means "sweet urine."

If not treated, gestational diabetes can lead to health problems, some of them serious. The best way to promote a healthy pregnancy if you have gestational diabetes is to follow the treatment plan outlined by your health care provider.

Why didn't I have diabetes before?

Remember that only pregnant women get gestational diabetes. When you're pregnant, your body goes through a lot of changes. In this case, being pregnant changed your metabolism. Now that you're pregnant, the insulin in your body can't do its job. Your body can't get the sugar out of your blood and into your cells to use for energy.

Why isn't the insulin doing its job?

The placenta, the system of vessels that passes nutrients, blood, and water from mother to fetus, makes certain hormones that prevent insulin from working the way it is supposed to. This situation is called **insulin resistance**. To keep your metabolism normal, your body has to make *three times* its normal amount of insulin or more to overcome the hormones made by the placenta.

For most women, the body's extra insulin is enough to keep their blood sugar levels in the healthy range. But, for about 5 percent of pregnant women, even the extra insulin isn't enough to keep their blood sugar level normal. At about the 20th to the 24th week of pregnancy, they end up with high blood sugar or gestational diabetes.

It takes time for insulin resistance to affect your body in a way that health care providers can measure, which is why tests for gestational diabetes are usually done between the 24th and 28th week of pregnancy.

Who can I go to for help with gestational diabetes?

Women who have gestational diabetes benefit most from a team approach to treatment, with each team member playing a specific role in the management and treatment of the condition. However, the specific members of the team will vary.

In general, women have a number of choices in how they get prenatal care. They might go to an **obstetrician/gynecologist (OB/GYN),** a **nurse-midwife**, a **family physician**, or another health care provider. These health care providers are usually the first line of defense against gestational diabetes because they do the initial testing for the condition.

Once you are diagnosed with gestational diabetes, these providers may decide to stay on your team, working with other providers to manage your care, or they may suggest that one of the following specialists leads your team:

- A maternal-fetal medicine specialist—a doctor who cares for a woman during pregnancy, labor, and delivery only; or
- Another doctor who specializes in treating pregnant women with high-risk conditions.

Should you need more extensive treatment and management to keep your gestational diabetes under control, it is likely that you will have to see one of these specialists to help ensure a healthy pregnancy.

You should also have a **registered dietitian**, a person with a bachelor's degree or higher in dietetics who is registered with the American Dietetic Association (ADA), on your team. Your health care provider can recommend a dietitian, or you can call the ADA at 1-800-366-1655 to find one.

In addition, you may have one or both of the following providers on your team:

- **A diabetes specialist**—a diabetologist (a doctor who specializes in diabetes care), endocrinologist (a doctor who specializes in treating hormone-related conditions, like diabetes), or another medical doctor who provides health services specifically for diabetics.
- **A diabetes educator**—a certified diabetes educator (CDE), nurse educator, registered nurse (RN), or another health care provider who can explain gestational diabetes and help you manage your condition during your pregnancy.

Keep in mind that your treatment and management team may include other members, too. This booklet uses the term ***health care provider*** to describe your doctor and the other members of your health care team.

Will gestational diabetes hurt my baby?

Most women who have gestational diabetes give birth to healthy babies, especially when they keep their blood sugar under control, eat a healthy diet, get regular, moderate physical activity, and maintain a healthy weight. In some cases, though, the condition can affect the pregnancy.

Keeping glucose levels under control may prevent certain problems related to gestational diabetes.

Below are some conditions that can result from your having gestational diabetes. Keep in mind that just because you have gestational diabetes does **not** mean that these problems will occur.

- **Macrosomia** (pronounced mak-row-SOHM-ee-uh)—Baby's body is larger than normal. Large-bodied babies sometimes get injured by natural delivery through the vagina; the baby may need to be delivered through cesarean section. The most common complication for these babies is *shoulder dystocia* (pronounced dis-TOE-shee-uh).
- **Hypoglycemia** (pronounced high-po-gl-eye-SEEM-ee-uh)—Baby's blood sugar is too low. You may need to start breastfeeding right away to get more glucose into the baby's system. If it's not possible for you to start feedings, the baby may need to get glucose through a thin, plastic tube in his or her arm that puts glucose directly into the blood.
- **Jaundice** (pronounced JAWN-diss)—Baby's skin turns yellowish; white parts of the eyes may also change color slightly. If treated, jaundice is not a serious problem for the baby.
- **Respiratory Distress Syndrome (RDS)**—Baby has trouble breathing. The baby might need oxygen or other help breathing if he or she has RDS.
- **Low Calcium and Magnesium Levels in the Baby's Blood**—Baby could develop a condition that causes spasms in the hands and feet, or twitching or cramping muscles. This condition can be treated with calcium and magnesium supplements.

Could gestational diabetes hurt my baby in other ways?

Gestational diabetes usually does not cause birth defects or deformities. Most developmental or physical defects happen during the first trimester of pregnancy, between the 1st and 8th week. Gestational diabetes typically develops around or after the 24th week of pregnancy. Women with gestational diabetes usually have normal blood sugar levels during the first trimester, allowing the body and body systems of the fetus to develop normally.

The fact that you have gestational diabetes will not cause diabetes in your baby. But, your child is at higher risk for developing type 2 diabetes later in life. As your child grows, things like eating a healthy diet, maintaining a healthy weight, and getting regular, moderate physical activity may help to reduce that risk.

If your baby was macrosomic, or large-bodied at birth, then he or she is at higher risk for childhood and adult obesity (being extremely overweight). Large-bodied babies are also at greater risk for getting type 2 diabetes and often get it at an earlier age (younger than 30) than those who were small-bodied babies.

Will gestational diabetes affect my labor or delivery?

Most women with gestational diabetes can make it to their due dates safely and begin labor naturally. In some cases, though, gestational diabetes could change the way you feel or how your baby is delivered. Again, keep in mind that just because you have gestational diabetes does not mean that you will have any change in delivery. **Talk to your health care provider about ANY concerns you have about labor or delivery.**

If you have gestational diabetes, there are some things you should keep in mind about delivery:

- **Blood Sugar and Insulin Balance**—Keeping your blood sugar level under control during labor and delivery is vital to your own health and to your baby's health. If you do not take insulin during your pregnancy, you probably won't need it during labor or delivery. If you do take insulin during your pregnancy, you may receive an insulin shot when labor begins, or you may get insulin through a thin, plastic tube in your arm that goes into your bloodstream during labor.

- **Early Delivery**—Gestational diabetes puts women at higher risk than women without the condition for developing *preeclampsia* (pronounced pree-ee-KLAMP-see-uh), late in their pregnancies. Preeclampsia is a condition related to a sudden blood pressure increase; it can be serious. (For more information on preeclampsia, go to the ***Your health care provider might also tell you to: Have your blood pressure checked as indicated*** section of this booklet.) The only way to cure preeclampsia is to deliver the baby; but delivery may not be the best option for your health or for the health of the baby. Your health care provider will keep you under close watch, possibly at the hospital, and will run multiple tests to determine whether early delivery is safe and needed. Your health care provider will give you more information about early delivery, should it be necessary.

- **Cesarean Delivery**—This is a type of surgery used to deliver the baby, instead of natural delivery through the vagina. Cesarean delivery is also called a cesarean section, or "C" section. Simply having gestational diabetes is not a reason to have a C section, but your health care provider may have other reasons for choosing a cesarean delivery, such as changes in your health or your baby's health during labor.

Will I have diabetes after I have my baby?

Once you have the baby, your body should be able to use its insulin more effectively. Shortly after the baby is born, the placenta is "delivered." (This is sometimes called the afterbirth.) Because the placenta causes insulin resistance, when it's gone, gestational diabetes usually goes away, too.

If you have gestational diabetes, **you are at higher-than-normal risk for developing type 2 diabetes later in your life.** Type 2 diabetes, like gestational diabetes, occurs when the body doesn't use its insulin properly. Keeping your weight within a healthy range and keeping up regular, moderate physical activity after your baby is born can help lower your risk for type 2 diabetes. Following a healthy diet and physical activity program, maintaining a healthy weight, or taking certain medicines can help people control type 2 diabetes.

What should I do if I have gestational diabetes?

Many women with gestational diabetes have healthy pregnancies and healthy babies because they follow the treatment plan that their health care providers set up for them.

This booklet gives you **general guidelines** for how to stay healthy with gestational diabetes. Your health care provider can build a treatment program to meet your specific needs. Remember that the most important person in the treatment plan is **YOU**. You are the one who will be doing the work to keep yourself healthy. Make sure you feel comfortable asking questions and talking to your health care provider about any worries that you have.

One of the most important things you can do to help ensure a healthy pregnancy is to make regular health care appointments and to keep them. In this way, your health care provider can catch any problems before they become major health issues.

A general treatment plan to control gestational diabetes may include these items:

- Knowing your blood sugar (also called glucose) level and keeping it under control
- Eating a healthy diet, as outlined by your health care provider
- Getting regular, moderate physical activity
- Maintaining a healthy weight gain
- Keeping daily records of your diet, physical activity,
- Taking insulin and/or other medications as pres

Your health care provider might al

- Test your urine for ketones, if needed.
- Have your blood pressure checked as indicated.

What are these things? Why are they important? How do you do them? When do you do them? How do you know if you're doing them right? To answer these questions, let's look at each one more closely.

Know your blood sugar level and keep it under control

What is it?

The first step in this general treatment plan has two parts: 1) *Knowing your blood sugar level*—means you test to see how much glucose is in your blood; and 2) *Keeping your blood sugar level under control*—means you keep the amount of glucose within a healthy range at all times, by eating a healthy diet as outlined by your health care provider, getting regular physical activity, and taking insulin, if needed.

Why do I have to do it?

Your blood sugar level changes during the day based on what foods you eat, when you eat, and how much you eat. Your level of physical activity and when you do physical activities also affect your blood sugar levels.

By getting to know your body and how it uses glucose during the day, you can help your health care provider to adjust your treatment program. Measuring your glucose level every day, and many times during the day, helps pinpoint when you need to eat, how much you should eat, and what kinds of foods are best for you. Knowing if your glucose level is in the healthy range also tells you whether or not it is safe for you to do physical activity.

As you get closer to your due date, your insulin resistance could increase. If that happens, you might need to take insulin shots to help keep your glucose level under control. Knowing your glucose levels at specific times of the day will allow your health care provider to figure out the right amount of insulin for you.

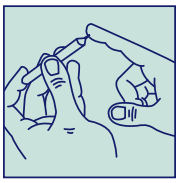
Measuring your blood sugar will give you information about…	For example…
The amount of food you can eat	Can you have that extra 1/2 bagel at breakfast?
Foods that affect your glucose level	Does your body process different foods differently?
Times when your glucose level is high or low	You might have high blood sugar in the morning after breakfast. Other women's levels are highest after dinner.
Times that physical activity is more likely to keep your glucose level in the target range	Does walking for 20 minutes after breakfast or dinner help to keep your glucose level within the healthy range?

How do I do it?

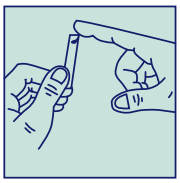
Your health care provider will show you how to test your glucose level and will give you detailed information about glucose testing. The steps below are only meant to give you a basic idea of what is involved in testing:

1. Wash your hands with warm water and soap.

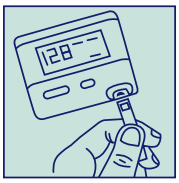
2. Prick your finger with a small needle called a **lancet** (pronounced LAN-sett). Squeeze out a drop of blood. (Note: The illustration above shows someone getting blood from an index finger, but you can prick any finger to get a drop of blood.)



3. Place the drop of blood on the target spot of a special testing device called a **glucose meter**, or onto the paper strip that fits into the meter. Because each glucose meter is different, your health care provider will show you how to use your specific meter and will explain how the meter works.



4. Wait a few minutes (Note: How long you have to wait depends on the type of meter you have). The meter will give you a number for your blood sugar level, like 128.



Use each lancet only once and be careful when you throw away used lancets. Ask your health care provider how to safely throw away testing supplies, like lancets.

Your health care provider will watch you do the test before you do it by yourself or try it at home. Take your glucose testing items with you when you go for health care appointments.

You can get supplies for testing your glucose level, like lancets and glucose meters, in most drug stores, pharmacies, and medical supply stores. Your health insurance plan might cover the cost of these supplies. You might also be able to rent a glucose meter from a medical supply store. Renting might be a better option for you because you will probably need the device only while you're pregnant. Ask your pharmacist for more information.

When do I do it?

Follow your health care provider's advice about when to test your glucose level. You might have to test four times a day:

- *Fasting* glucose level—first thing in the morning, before you eat
- 1 or 2 hours after breakfast
- 1 or 2 hours after lunch
- 1 or 2 hours after dinner

You might also need to test your glucose level before you go to bed at night. This test is called your **nighttime** or **nocturnal** (the word *nocturnal* means nighttime) glucose level.

How do I know that I'm doing it right?

Even though your glucose level changes during the day, there is a healthy range for these levels. The goal is to keep your glucose level within this range. The following chart shows the healthy "target" range for each time you test.

HEALTHY TARGET RANGE FOR GLUCOSE LEVELS[2,3]

Time of Blood Sugar Test	Healthy Target Levels (in mg/dl)#
Fasting glucose level	No higher than 95
One hour after eating	No higher than 140
Two hours after eating	No higher than 120

Talk to your health care provider about what to do if your glucose level is outside the healthy target listed here. You may have to adjust your treatment plan to get your levels back in range.

Eat a healthy diet, as outlined by your health care provider

What is it?

A healthy diet is one that includes a balance of foods from all the food groups, giving you the nutrients, vitamins, and minerals needed for a healthy pregnancy. For women with gestational diabetes, such a diet also helps to keep blood sugar levels in the healthy target range.

Women with gestational diabetes have special dietary needs. Because eating a healthy diet is such an important part of a treatment plan for gestational diabetes, women should **not** try to create their own diets. To promote health throughout your pregnancy, it is essential that you work with your health care provider to create a plan for your healthy diet. It is also important that you follow the plan as outlined by your health care provider.

The information in this booklet is specific to women who have been diagnosed with gestational diabetes. These guidelines are not appropriate for all pregnant women, nor do they apply to women who are not pregnant or who have other types of diabetes.

Carbohydrates are often at the center of a healthy diet for a woman with gestational diabetes.

- Carbohydrates are nutrients that come from certain foods, like grain products, fruits, and vegetables. During digestion, your body breaks down most carbohydrates into simple sugars, like glucose, which is your body's main source of energy.

- Eating carbohydrates affects your blood sugar level. For instance, if you eat a small amount of carbohydrate at a meal, your blood sugar level goes up a small amount. If you eat a large amount of carbohydrate at a meal, your blood sugar level goes up a large amount.
- You and your health care provider will need to find a balance between eating enough carbohydrates to get the energy and glucose you need, and limiting the carbohydrates you eat to control your blood sugar level.

There are a few things you should know about carbohydrates and your healthy diet:

- Your health care provider will come up with a healthy diet for you that includes the proper amount of carbohydrates to maintain a healthy pregnancy.
- Some women who have gestational diabetes may need to eat fewer carbohydrates than they did before they were pregnant to lower their total amount of carbohydrates.
- Some women with gestational diabetes may need to avoid high-sugar foods, like sweets and desserts, to keep their carbohydrate levels in line. But, even though these foods have more carbohydrates and sugars in each serving than other foods do, they can still be worked into a plan for healthy eating in most cases.
- Not getting enough carbohydrates can also cause problems. So, you should only limit your carbohydrate intake if advised to do so by your health care provider.

Most women with gestational diabetes follow a meal plan to make sure they are getting the nutrients they need. Types of meal plans may include:

- **Carbohydrate counting**—For this meal plan, you count the number of grams of carbohydrates that you eat at each meal and snack to make sure you are within a certain range, as determined by your health care provider. Your meal plan may be specific, giving you definite amounts for each meal or snack, or it may be more general, with a daily carbohydrate total. A slightly different version of this meal plan changes the grams of carbohydrates into "points." Then you have to make sure you stay within a certain range of carbohydrate points for each meal or each day.
- **The exchange system**—The exchange system has food groups that are slightly different than the food groups in the U.S. Department of Agriculture

Food Guide Pyramid: breads/starches, fruits, vegetables, proteins, milk, and fats. Each food within an exchange group has about the same amount of carbohydrate, fat, protein, and calories, but the amounts of vitamins and minerals may vary among foods within each group. To follow the plan, you count the number of items from a food group that you eat at each meal. You can "exchange" one food item in a group with another item in a group without changing your plan. For instance, you can choose one (1) meat exchange (a protein) or one (1) tofu exchange (also a protein) without changing the amount of carbohydrate or calories in your meal.

Your health care provider may also tell you to get more fiber in your diet. Fiber is the part of plant foods that your body can't digest, like skins, seeds, and bran. Because fiber slows down digestion and absorption of nutrients, it can also help to control your blood sugar level. Foods that are part of a healthy diet, like fruits, vegetables, and legumes (beans and peas), are also good sources of dietary fiber. Some foods that are high in fiber, like whole grain products, such as cereals and some breads, also help prevent constipation. (See ***Appendix A: High-Fiber Foods*** for a list of foods that contain high fiber.)

Why do I have to do it?

All pregnant women need to eat healthy diets, as laid out by their health care providers, to help them get the right nutrients, in the right amounts. When you have gestational diabetes, a healthy diet also helps to keep blood sugar in the healthy range. Following a healthy diet is one of the best ways to promote a healthy pregnancy.

How do I do it?

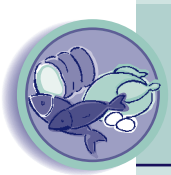
Women who have gestational diabetes should not try to create a healthy diet on their own. They should work closely with their health care provider to make sure they are getting proper nutrition.

The table on the next page describes the Food Groups that your health care provider will use to build your diet. He or she will tell you how many servings of each group you should have in a day.

If one of the foods that you normally eat does not appear on this table, ask your health care provider what group that food belongs to. You should also ask about the serving size, so that you know how much of that food you can eat. **Every question you have is important, so don't be afraid to ask.**

Food Groups[4]

Please note that this booklet presents only **general guidelines** for a healthy diet for women with gestational diabetes. Use the chart below to talk to your health care provider about eating. This chart is not meant to take the place of your health care provider's recommendations.

Food Group	Description and Tips	What are Some Foods in This Group?	How much is one (1) serving?*
Fats and Oils 	These foods give you essential fatty acids and vitamins. Choose a diet that is low in saturated fat, trans-fats, and cholesterol and moderate in total fat. Use vegetable oils rather than solid fats (such as those in meat or dairy foods and shortening).	• **Salad dressing** • **Butter/ margarine** • **Mayonnaise** • **Vegetable oil, canola oil, olive oil, soybean oil, sunflower oil** • **Spray vegetable oil**	• **1 tsp butter, margarine, or oil** • **1 TBSP regular salad dressing or mayonnaise** • **2 TBSP low-fat or light salad dressing**
Milk, Yogurt, and Cheese 	Milk and milk foods give you carbohydrates, proteins, and vitamins and minerals. Choose milk, cheese, and yogurt products that are fat free or low fat (1%).	• **Milk, powdered milk, condensed milk, buttermilk** • **Lactose-free milk** • **Cheese** • **Plain yogurt** • **Frozen yogurt**	• **1 cup fat-free or low-fat (1%) milk** • **2 ounces fat-free or low-fat cheese** • **1 cup lactose-free milk** • **1 cup fat-free plain yogurt** • **1/3 cup powdered, non-fat milk**
Meat, Poultry, Fish, Dry Beans, and Nuts 	These foods provide protein, vitamins, and minerals. Trim extra fat off meats, including the skin. Use broiling, grilling, and roasting to cook meats without adding fat or cholesterol.	• **Lean beef, poultry, pork, seafood, lamb, meat substitute** • **Eggs, egg substitute** • **Tofu** • **Peanut butter and peanuts**	• **3 ounces cooked lean meat, chicken, fish, or pork** • **1/2 cup tofu** • **1 egg** • **2 TBSP peanut butter**
Vegetables 	Vegetables, either raw or cooked, give you carbohydrates, vitamins, minerals, and fiber. They are usually very low in fat, unless they are cooked with butter, margarine, salad dressing, cream sauce, or other high-fat ingredient.	• **Carrots, celery, okra, Brussels sprouts, asparagus, cauliflower, broccoli, mushrooms, peppers, squashes, tomatoes, onions, cucumbers** • **Leafy vegetables: lettuce, spinach, cabbage**	• **1 cup raw vegetables** • **1/2 cup cooked vegetables** • **1 cup leafy, raw vegetables** • **1/2 cup tomato or vegetable juice**

Food Group	Description and Tips	What are Some Foods in This Group?	How much is one (1) serving?#
Fruits	Fruits give your body carbohydrates, vitamins, minerals, and fiber. Choose fresh fruits, fruits canned in their own juices or in water, or frozen fruits.	• Bananas, apples, berries, mango, plums, peaches, figs, pears, grapes, prunes • Citrus fruits: oranges, tangerines, grapefruit, kiwi, pineapple • Melons: watermelon, cantaloupe, honeydew	• 1 piece small-to-medium whole fruit (about 1/2 cup of cut pieces) • 1 slice of melon • 1/2 cup canned or fresh fruit pieces • 1/2 cup or 4 fl.oz. fruit juice • 1/2 banana 
Bread, Cereal, Rice, and Pasta	This group gives your body carbohydrates, vitamins, minerals, and fiber. Whole grain products are high in these nutrients. Avoid high-fat or fried starchy vegetables and grain products. Use seasonings and fat-free or low-fat toppings and sauces to add flavor.	• Bread: sandwich and dinner breads, bagels, flour tortillas, pita, rolls, pizza crust, cornbread, taco shells • Starchy vegetables: white or sweet potatoes • Legumes (peas, corn, beans) • Rice, noodles, pasta (spaghetti/macaroni), dry or cooked cereal, oatmeal • Crackers, pretzels, unbuttered popcorn, breadsticks	• 1 slice whole grain bread • 1/2 bagel, English muffin, or six-inch flour tortilla • 1 small muffin or waffle • 2 pancakes • 5 crackers • 1/3 cup cooked rice • 1 small baked potato (plain) • 1/2 cup cooked cereal, pasta, mashed potatoes • 1/2 cup cooked beans or lentils • 1/2 cup sweet potatoes, yams, peas, or corn • 3/4 cup dry, unsweetened cereal 
"Free" Foods	"Free" foods are those that have less than 20 calories. You can often eat free foods without having to account for them in your meal plan. Water is considered a "free" food; you can drink as much water as you want. In fact, most health care providers recommend that you drink a lot of water when you are pregnant.	• Raw vegetables: cabbage (all varieties), celery, cucumber, endive, lettuces (all varieties), mushrooms, peppers, radishes, spinach • Drinks: sugar-free/ unsweetened and low-salt versions of broth, bouillon, consommes, mineral water, club soda. • Condiments-Group 1: ketchup, fat-free cream cheese, horseradish, fat-free mayonnaise, fat-free margarine, reduced-fat margarine, mustard, fat-free or reduced-fat sour cream, taco sauce; Group 2: salsa; Group 3: soy sauce, non-stick cooking spray • Seasonings-garlic, herbs, flavoring agents, pimento, spices (Note: "salt" seasonings are high in sodium and should be used only in small amounts.)	• Up to 2 cups raw vegetables • Drinks: 8 fluid ounces • 1 TBSP Group 1 condiments • 1/4 cup Group 2 condiments • Group 3 condiments—no limit • 2 to 3 dashes of seasonings • Water

* ***tsp.*** = *teaspoon* ***TBSP*** = *tablespoon*

You might also have to include these changes in your eating habits[5] to help keep your blood sugar level under control:

- **Eat meals and snacks (as allowed on your meal plan) on a regular schedule throughout the day.** Researchers recommend that women with gestational diabetes eat at least three small- to medium-sized meals and two to four snacks every day.
- **Eat smaller amounts of carbohydrates at each meal.** Rather than eating a large amount of carbohydrate at a single meal, your health care provider may suggest that you spread out your carbohydrates throughout the day. Because eating carbohydrates directly affects your blood sugar level, eating a small amount of carbohydrate all through the day will help keep your blood sugar from rising too high after a meal.
- **Add a nighttime snack to your meal plan.** You may need to add a snack of one to two servings of carbohydrate before you go to sleep to keep your blood sugar at a healthy level overnight. Some examples of healthy snacks include: a piece of fruit, a handful of pretzels, or crackers.

To give you an idea of what a meal plan for one day might look like, there is a menu sample at the back of this booklet. This sample menu is not meant to replace your health care provider's recommendations. (See ***Appendix C: Sample Menu*** for more information.)

Whole Milk, Fat-free Milk, 1% Milk, or 2% Milk—How do you decide?

Health care providers recommend that pregnant women increase the amount of milk they drink to make sure they get enough calcium. Milk is one of the best sources of calcium and of other nutrients that help the body absorb calcium. In most cases, fat-free or low-fat milk and milk products are the best calcium options because they contain the calcium and other nutrients, without the added fat. Fat-free and 1% milk are among the suggested options.

If you are lactose intolerant or you have trouble digesting milk products, many lactose-free products provide calcium and other nutrients without the milk sugar.

Following a meal plan and eating a healthy diet may seem like a lot of work at first. You might have to measure food before you eat it, or not eat certain foods while you are pregnant; you might have to count carbohydrates, servings, or exchanges. **Don't give up!** Sticking to your meal plan is one of the most effective ways to control gestational diabetes.

When do I do it?

Eat a healthy diet or follow a meal plan for your entire pregnancy to improve your health and to help ensure a healthy pregnancy. If you need to make changes to your diet or meal plan to keep your glucose level in the healthy range, your health care provider will help you do so.

How do I know that I'm doing it right?

One sign that your diet or meal plan is successful is that your glucose level will usually stay within the healthy range (see the ***Healthy Target Range for Blood Sugar*** table on Page 12). Talk to your health care provider about what to do if you have abnormal blood sugar numbers.

Maintaining a healthy weight gain and not having ketones in your urine are other signs that your diet or meal plan is working. For more information about healthy weight gain, see the ***Maintain a Healthy Weight Gain*** section of this booklet. For information about ketones, go to the section titled ***Your health care provider might also tell you to: Test your urine for ketones, if needed*** found later in this booklet.

Get regular, moderate physical activity

What is it?

Moderate physical activity is not the same as daily, routine activities, such as shopping, doing household chores, or washing dishes. Women with gestational diabetes often need regular, moderate physical activity, such as walking, prenatal aerobics class, or swimming, to help control blood sugar levels.

Your health care provider may tell you not to do any moderate physical activity because of other health conditions you have or because of complications with your pregnancy. **Do not begin any physical activity without talking to your health care provider first.**

Why do I have to do it?

Moderate physical activity is an important part of any healthy pregnancy. For women with gestational diabetes, it also helps their bodies' insulin work better, which is an effective way to help control blood sugar[2,6] levels.

How do I do it?

Researchers are uncertain about the amount of physical activity that best helps a woman with gestational diabetes to control her blood sugar. The specific amount of physical activity that you need depends on how active you were before you were pregnant, and whether or not you have any other health concerns. For some women with gestational diabetes, regular, moderate physical activity includes walking, swimming, or light running. For other women, only slow walking is recommended. Talk to your health care provider about what activities you should do, how often, and for how long.

One thing you need to watch is your level of effort, called your **exertion** (pronounced ecks-ER-shun) **level**. If you can talk easily while doing an activity, instead of gasping for air, your level of exertion is good. If you cannot talk easily, or find yourself coughing or gasping for air, you need to lower your level of exertion by slowing down or stopping for a while. Your health care provider can advise you on the best level of exertion for you.

When do I do it?

Most women can stay active throughout their pregnancies. However, your health care provider may recommend that you become less active as you get closer to your due date. Keep in mind that it may take two to four weeks for your physical activity to have an effect on your blood sugar levels.

How do I know that I'm doing it right?

Listen to your body—Your body will tell you how much activity is enough. It will also let you know when you are doing too much. Quit when you feel tired. If you feel faint, dizzy, or extremely hot, you should stop the activity immediately.

If you are taking insulin, see the ***Take medications and/or insulin as prescribed*** section of this booklet for tips about physical activity and insulin.

The general guidelines listed below will help to ensure safety while doing physical activity.

GENERAL GUIDELINES FOR PHYSICAL ACTIVITY[7]

Do	Don't
Complete moderate and regular physical activity unless your health care provider tells you not to.	Get too tired while working out or doing physical activity.
Choose activities like swimming, that don't require a lot of standing or balance.	Do any activity while lying on your back when you are in your 2nd or 3rd trimester of pregnancy.
Wear loose, light clothing that won't make you sweat too much or get too hot.	Perform activities in very hot weather.
Drink a lot of water before, during, and after your activity.	Perform activities that may bump or hurt your belly, or that may cause you to lose your balance.
Eat a healthy diet and gain the right amount of weight.	Fast (skip meals) or do physical activity when you are hungry.
Watch your level of exertion (Can you talk easily?).	Over-exert yourself.

Maintain a healthy weight gain

What is it?

Healthy weight gain can mean either your **overall weight gain**, or your **weekly rate of weight gain.** Some health care providers focus only on overall gain or only on weekly gain, but some keep track of both types of weight gain. First, let's look at overall weight gain.

The amount of weight gain that is healthy for you depends on how much you weighed before you were pregnant. Find your pre-pregnancy weight and height in the table on page 23. Then look at the bottom row of the table to find your overall healthy weight gain goal.

If you are expecting twins, an overall weight gain of 35 to 45 pounds[7] is considered healthy.

Remember that these goals are only a general range for overall weight gain. Your health care provider will let you know if you're gaining too much or too little weight for a healthy pregnancy. **Weight loss can be dangerous during any part of your pregnancy.** Report any weight loss to your health care provider right away.

OVERALL WEIGHT GAIN GOALS (by pre pregnancy height and weight)[8]					
HEIGHT (Without Shoes)		WEIGHT STATUS CATEGORY (Weight in pounds, in light, indoor clothing)			
ft.	in.	A#	B	C	D
4	9	92 or less	93-113	114-134	135 or more
4	10	94 or less	95-117	118-138	139 or more
4	11	97 or less	98-120	121-142	143 or more
5	0	100 or less	101-123	124-146	147 or more
5	1	103 or less	104-127	128-150	151 or more
5	2	106 or less	107-131	132-155	156 or more
5	3	109 or less	110-134	135-159	160 or more
5	4	113 or less	114-140	141-165	166 or more
5	5	117 or less	118-144	145-170	171 or more
5	6	121 or less	122-149	150-176	177 or more
5	7	124 or less	125-153	154-181	182 or more
5	8	128 or less	129-157	158-186	187 or more
5	9	131 or less	132-162	163-191	192 or more
5	10	135 or less	136-166	167-196	197 or more
5	11	139 or less	140-171	172-202	203 or more
6	0	142 or less	143-175	176-207	208 or more
Your overall weight gain goal is:		35-40*	30-35	22-27	15-20

You may also fall into this category if you are a teenager or if you smoke.
* The weight gain goal for women in this category may range from 40 to 45 pounds.

Why do I have to do it?

Usually, people gain weight because the amount of fuel they take in, as food, is higher than the amount they use up, as energy. When you have gestational diabetes, if you gain too much weight, gain weight too quickly, or begin to lose weight, your body may be telling you something is wrong. Because your body's insulin isn't working well already, your condition can get out of control quickly if you gain too much weight, or if you gain weight too quickly.

How do I do it?

You already learned two useful ways to maintain a healthy weight gain: eating a healthy diet as outlined by your health care provider, and getting regular, moderate physical activity.

If you think your weight gain is out of control, but you are following a recommended diet and physical activity program, tell your health care provider. He or she will adjust your treatment plan to get your weight gain back into healthy range.

When do I do it?

It's a good idea to keep track of how much weight you gain from the time you learn you are pregnant to the time you have the baby. Knowing your weight status can help your health care provider detect possible problems before they become dangerous.

It's also a good idea to weigh yourself on the same day of the week and at the same time of day. Your health care provider can make a schedule for you so you know how often to weigh yourself and at what time of day. You will also be weighed at your prenatal appointments.

How do I know that I'm doing it right?

One way to determine if your overall weight gain is within the healthy range is to follow your **weekly rate of weight gain**. The table below gives some general guidelines for weekly rate of weight gain.

Some health care providers feel that your weekly rate of gain is just as important as your overall weight gain because it shows how well your treatment plan is working to control your gestational diabetes. If your weekly rate of gain is low, you might need to adjust your diet to get more calories. If your weekly rate of gain is high, you may be developing a condition called preeclampsia, which can be dangerous. (See the section titled ***Your health care provider might also ask you to: Have your blood pressure checked as indicated*** for more information about preeclampsia.)

WEEKLY RATE OF WEIGHT GAIN[9]

Aim to keep your weekly rate of weight gain within these healthy ranges:	
In the first trimester of pregnancy (the first 3 months):	3 to 6 pounds for the *entire three months*
During the second and third trimesters (the last 6 months):	Between 1/2 and 1 pound each week
If you gained too much weight early in the pregnancy:	Limit weight gain to 3/4 of a pound each week (3 pounds each month) to help get your blood sugar level under control
A weight gain of two (2) pounds or more each week is considered high.	

Keep in mind that your weekly rate of weight gain may go up and down throughout the course of your pregnancy. Some weeks you may gain weight, other weeks you won't; as a result, your weekly rate of gain may not match your overall weight gain goal exactly. Your health care provider will let you know if you're gaining too much or too little weight for a healthy pregnancy. **Weight loss can be dangerous during any part of your pregnancy.** Report any weight loss to your health care provider right away.

You may also notice that your weight gain slows down or stops for a time. It should start going up again after one to two weeks. **If it doesn't, tell your health care provider immediately.** He or she may need to adjust your treatment plan.

Are there any other ways I can maintain a healthy weight gain?

Some general guidelines[10] that might help you reach your target weekly rate of gain include:

- Try to get more light or moderate physical activity, if your health care provider says it's safe.
- Use the ***Nutrition Facts*** labels on food packages to make lower-calorie food choices that fit into your meal plan.
- Eat fewer fried foods and "fast" foods.
- Eat healthy foods that fit into your meal plan, such as salads with low-fat dressings and broiled or grilled chicken.
- Use less butter and margarine on food, or don't use them at all.
- Use spices and herbs (such as curry, garlic, and parsley) and low-fat or lower-calorie sauces to flavor rice and pasta.
- Eat smaller meals and have low-calorie snacks more often to ensure that your body has a constant glucose supply, and to prevent yourself from getting very hungry.
- Avoid skipping meals or cutting back too much on breakfast or lunch. Eating less food or skipping meals could make you overly hungry at the next meal, causing you to overeat.

Keep daily records of your diet, physical activity, and glucose level

What is it?

Keeping records means writing down your blood sugar numbers, physical activities, and everything you eat and drink in a **daily record book**. You can use a small notebook or ask your health care provider for a testing record book. There are also sample record book pages at the back of this booklet (see ***Appendix C*** and ***Appendix D***).

Keep in mind that if you are supposed to keep track of everything you eat and drink, that means *everything*. Bites, nibbles, snacks, second helpings, and liquids can really add up and may upset your meal plan. It's also easy to forget or underestimate how much snacking you really do.

Why do I have to do it?

Keeping daily records helps to track how well your treatment plan is working and what, if anything, should be changed. The information also reveals whether or not you need insulin, and if so, how much you need.

You might also find the information helpful when talking to your health care provider about how you feel. Your record book is a good place to write down questions or notes on how your body feels, so that you can remember them at your next prenatal appointment.

How do I do it?

Your health care provider can give you more details about what to write in your record book. He or she might ask you to keep track of these things:

- Blood sugar level—What is your level? Are you in the healthy range?
- Food—What did you eat and drink? Was the food on your meal plan? Did you have any snacks? How large/small was your snack? Was it more or less than usual?
- Physical wellness—How do you feel? Are you sick to your stomach? Do you feel tired, or do you have lots of energy?
- Physical activity—What activity did you do? How long did you do it? Was it within your physical activity program? How did you feel after the activity?
- Weight gain—Are you gaining a healthy amount of weight?

When do I do it?

It's a good idea to follow a schedule for writing in your record book, so that you get used to doing it and don't forget to do it. It might seem like a lot of work in the beginning, keeping track of so many things, but the more you do it, the less work it will be.

How do I know that I'm doing it right?

The most important part of keeping daily records is that you do it. Make sure that you are recording **all** the items identified by your health care provider.

Take insulin and/or other medications as prescribed

What is it?

Even if you do *everything* your health care provider tells you to manage your gestational diabetes, you still might need to take insulin during your pregnancy to keep it under control. You already know that insulin moves glucose out of your bloodstream and into your cells to use as energy; you may need extra insulin to lower your blood glucose level. The only way to get extra insulin into your body is to inject it under your skin with a needle. Taking insulin is the same as any other part of this treatment plan. It's just another way to help you stay healthy

Why do I have to do it?

You may have to include small amounts of insulin in your treatment plan if:

- Your blood sugar level is too high.
- Your blood sugar level is high too many times.
- Your blood sugar level remains high, but you are not gaining much weight or are not eating poorly.
- You cannot safely add physical activity to your treatment plan.

In these cases, the best action for maintaining a healthy pregnancy is to add insulin. Insulin does not hurt the fetus. The daily records that you keep help your health care provider decide when and if it's time to begin insulin. That's why it's important to keep good records.

Here are some other things you should know about insulin:

- **If you need to take insulin, it does not mean that you didn't try hard enough or that you failed at taking care of yourself.** It just means that your body has a high level of insulin resistance and needs some help getting glucose level back into healthy range. (Refer to the ***Knowing your blood sugar level and keeping it under control: How do I know I'm doing it right?*** section of this booklet for more details on the healthy range for glucose.)
- **Taking insulin does not mean you have type 1 diabetes.** People with type 1 diabetes have to take insulin shots *every day of their lives* because their bodies don't make enough insulin. As a woman with gestational diabetes, taking insulin does NOT mean that you now have type 1 diabetes. It only means that your body needs some extra help to balance its insulin and glucose levels. After your baby is born, your diabetes will likely go away, and with it, your need to take insulin.
- **An increase in the amount or dosage of insulin you need does not mean that your pregnancy is in danger.** The amount of insulin you take will *probably* increase as your pregnancy goes on. Because your insulin resistance increases as your pregnancy continues, your body needs more insulin to overcome this resistance. The goal is to keep your blood sugar under control, no matter how much insulin it takes. Most women take two insulin shots each day, but you may get better glucose control with three injections.
- **You may need more insulin if you are under high amounts of stress or if you are sick because your blood sugar level gets higher on its own in these cases.** Some medicines can also cause blood sugars to rise above the healthy range.

How do I do it?

Your health care provider will teach you how to give yourself insulin shots, if you need them. Use the space below to write down what your health care provider tells you about your insulin treatment.

Question:	Answer:
What kind of insulin are you taking?	
When should you take your insulin shot or shots?	
How long does it take for the insulin start working?	
How long does the insulin last in your body?	
How do you store insulin?	
How do you measure the right amount of insulin?	
How do you give yourself an insulin injection?	
Should you eat before or after your insulin shot?	
How will the insulin make you feel?	
How can you safely throw away used supplies?	

When do I do it?

How often you need insulin shots will depend on your body. Your health care provider will tell you how often to take the shots and at what times of day. Make sure you follow his or her advice about taking insulin to help ensure the safety of your pregnancy.

Special instructions for women taking insulin

- **Follow a regular eating schedule.** Your health care provider can tell you when to take the insulin and when to eat your meals so that the timing of both is correct. Do not skip or delay meals and snacks when taking insulin because this can affect your glucose-insulin balance.
- **Know the symptoms of low blood sugar.** If your blood sugar level drops below 60 at any time, you have **hypoglycemia** (*hypo* means low, and *glycemia* means sugar). Low blood sugar can be dangerous. Hypoglycemia is not common in women with gestational diabetes, but you are at greater risk for it if you take insulin. The table shown here describes some reasons that low blood sugar might occur and some of its symptoms.

KNOW THE SYMPTOMS OF LOW BLOOD SUGAR

Why does low blood sugar occur?	How might I feel if I have low blood sugar?
• Too much exercise • Skipping meals or snacks • Delaying meals or snacks • Not eating often enough • Too much insulin	• Very hungry • Very tired • Shaky or trembling • Sweating or clamminess • Nervous • Confused • Like you're going to pass out or faint • Blurred vision Or…You might feel fine.

- **Know when your insulin is working its hardest.** Low blood sugar is more common at these times, depending on how your body uses insulin and glucose.
- **Be careful about doing physical activity, but remain active.** Because both insulin and physical activity lower your blood sugar level, when combined they can cause your blood sugar level to drop very quickly. Test your blood sugar *before* you do any physical activity. If your level is low, eat something and test again to make sure your level is higher before you start an activity. Be smart about how much physical activity you do, how much you eat, and how much insulin you take.
- **Be prepared.** Take your insulin supplies with you when you go out, especially if you are going to be gone a long time. You should also take some form of sugar with you, in your purse, in your car's glove compartment, or in your pocket, in case your blood sugar drops too low. The best form of sugar for an emergency is glucose paste or glucose tablets. You can buy these at the drug store or pharmacy. Ask your health care provider for more information.
- **Test your blood sugar if you start to feel dizzy, faint, or tired.**
- **Report any abnormal blood sugar level to your health care provider right away, in case a change in your treatment plan is needed.**

Your health care provider might also tell you to: Test your urine for ketones[6] if needed

Your body makes **ketones** (pronounced KEE-tones) when it uses or breaks down its own fat. Your body uses fat for fuel when it can't get glucose. Ketones might appear in your urine if your meal plan is not providing enough carbohydrates or calories, if you skip meals or snacks, or if you go for more than five hours without eating. Your health care provider might test your urine for ketones at your prenatal appointments to see if you are getting enough glucose. Or, you may have to do the test at home, every day.

Your health care provider will give you more specific information about testing your urine for ketones, including how to do the test, where to get testing supplies, how often you should test your urine, and what to do if your urine has ketones in it. Ketone test supplies are available at your local drug store, pharmacy, or medical supply store.

Your health care provider might also tell you to: Have your blood pressure checked[2] as indicated

Increased blood pressure may indicate a condition called **preeclampsia**. Preeclampsia[11] is a sudden increase in blood pressure after the 20th week of pregnancy that is associated with swelling in your face and hands. If untreated, preeclampsia can lead to long-term health problem and can be fatal. Daily or weekly blood pressure checks may be needed to detect any changes that might indicate preeclampsia.

If your blood pressure is high, your health care provider might also test your urine to see if it contains protein. Protein in the urine can also be a sign of preeclampsia. You may have to perform the test yourself, as directed, if your blood pressure is elevated. Your health care provider can give you specific information about testing your urine for protein, including how to do it, when to do it, and what to do if your urine has protein in it.

What should I do after my baby is born?

Your health care provider will check your blood sugar level often, starting right after your baby is born. For most women, blood sugar levels go back to normal quickly after having their babies.

Six weeks[2] after your baby is born, you should have a blood test to find out whether your blood sugar level is back to normal. This test is similar to the one you took to find out whether or not you had gestational diabetes. Based on the results of the test, you will fall into one of three categories.

AFTER PREGNANCY TEST CATEGORIES[2,12]

If your category is…	You should…
Normal	Get checked for diabetes every three years.
Impaired Glucose Tolerance	Get checked for diabetes every year. Talk to your health care provider about ways to lower your risk level for diabetes.
Diabetic	Work with your health care provider to set up a treatment plan for your diabetes.

The test also checks your risk for getting diabetes in the future. Women who have had gestational diabetes have a 40-percent higher chance[2,3] than women who haven't had gestational diabetes of developing type 2 diabetes later in life.

Getting checked for diabetes is important because type 2 diabetes shows few symptoms. The only way to know for sure that you have type 2 diabetes is to have a blood test that reveals a higher-than-normal blood sugar level. You should also tell your health care provider right away if you notice any of these things:

- Being very thirsty
- Urinating often
- Feeling constantly or overly tired
- Losing weight quickly and/or without reason

Having one or more of these symptoms does not necessarily mean you have diabetes, but your health care provider might want to test you to make sure. Detecting type 2 diabetes early can help you avoid problems, like early heart disease and damage to your eyes, kidneys, or nerves. If you choose to use birth control methods in the future, talk with your health care provider about a method that won't increase your risk of developing diabetes.

Can I breastfeed[2] even though I have gestational diabetes?

Like all mothers, women with gestational diabetes should breastfeed their babies, if possible. Breastfeeding provides a number of benefits for your baby, including the right balance of nutrients and protection against certain illnesses. Breastfeeding is also beneficial for mothers. It allows your body to use up some extra calories that were stored during pregnancy. Losing weight after having the baby enhances overall health and is one way to reduce your chances of developing diabetes later in life. Many women who have gestational diabetes also find that breastfeeding improves their fasting blood sugar level and allows them to maintain a lower average blood sugar level once their babies are born.

How can I tell if I am likely to develop diabetes in the future?

Certain traits increase your chances of getting type 2 diabetes within five years[12] of having your baby. If you have one or more of the following, you should talk to your health care provider about type 2 diabetes:

- You developed gestational diabetes before your 24th week of pregnancy.
- Your blood sugar level during pregnancy was consistently on the high end of the healthy range.
- Your blood sugar levels after the baby was born were higher-than-average, according to your health care provider.
- You are in the impaired glucose tolerance category (see the ***After-Pregnancy Test Categories*** table on page 33).
- You are obese, according to your health care provider.
- You have a history of diabetes in your family.

- You belong to a high-risk ethnic group (Hispanic, African American, Native American, South or East Asian, Pacific Islander, Indigenous Australian).
- You have had gestational diabetes with other pregnancies.

If you have *any* of these risk factors, it is even more important that you get tested yearly for diabetes. Remember that you can take steps to lower your risk for type 2 diabetes, such as eating a low-fat diet, losing extra weight, and getting regular, moderate physical activity.

Plan your next pregnancy.

If you know that you want to get pregnant in the future, have a blood sugar test up to three months before becoming pregnant to make sure you have a normal blood sugar level. If your blood sugar level is high, you may have developed type 2 diabetes without knowing it. As mentioned earlier in this booklet, high blood sugar early in the pregnancy (within the first eight weeks) can impact the developing body and organ systems of the fetus. It's important to get your blood sugar level under control before you get pregnant.

If you do get pregnant again, make sure your health care provider knows that you had gestational diabetes with your last pregnancy. If you had gestational diabetes with one pregnancy, your risk[13] of getting it with another pregnancy is about 36 percent.

You can control gestational diabetes!

It may seem like a lot of work, but most women can successfully control their gestational diabetes and have healthy pregnancies. **You can do it, too!** Follow the treatment plan your health care provider designs for you. A healthy pregnancy and a healthy birth are the greatest rewards.

Where can I go for more information *about gestational diabetes?*

Eunice Kennedy Shriver National Institute of Child Health and Human Development (NICHD)

The mission of the NICHD is to ensure that every person is born healthy and wanted, that women suffer no harmful effects from the reproductive process, and that all children have the chance to fulfill their potential for a healthy and productive life, free of disease or disability, and to ensure the health, productivity, independence, and well-being of all people through optimal rehabilitation. The NICHD Information Resource Center is your one-stop source for NICHD brochures, booklets, and other materials related to the health of children, adults, families, and populations, including information about gestational diabetes.

You can contact the NICHD Information Resource Center at:

Phone: 1-800-370-2943 (TTY: 1-888-320-6942)
Mail: P.O. Box 3006, Rockville, MD 20847
Fax: 1-866-760-5947
E-mail: NICHDInformationResourceCenter@mail.nih.gov
Internet: http://www.nichd.nih.gov

Other resources

- **National Diabetes Information Clearinghouse (NDIC)** provides information about diabetes and how to manage diabetes from the National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK).

  Phone: 301-654-3327
  Mail: 1 Information Way, Bethesda, MD 20892
  Fax: 301-907-8906
  E-mail: ndic@info.niddk.nih.gov
  Internet: http://www.niddk.nih.gov/health/diabetes/ndic.htm

- **The National Diabetes Education Program (NDEP)** is a partnership between the NIDDK, the Centers for Disease Control and Prevention, and more than 200 public and private organizations. To get free single copies of NDEP sample materials, please call the automated system or visit the Program Web site.

  Phone: 1-800-438-5383
  E-mail: lisingm@.niddk.nih.gov
  Internet: http://ndep.nih.gov

- **American Dietetic Association (ADA) Consumer Hotline** provides information about how to find a dietitian.

  Phone: 1-800-366-1655
  Internet: http://www.eatright.org

- **American College of Obstetricians and Gynecologists (AGOG)** is the nation's leading group of professionals providing health care for women. ACOG provides various patient education resources, assistance in finding a physician, and additional information services.

  Phone: 202-638-5577
  Mail: 409 12th St., SW, PO Box 96920, Washington, D.C. 20090-6920
  E-mail: resources@acog.org
  Internet: http://www.acog.org

- **American Diabetes Association** is the nation's leading nonprofit health organization providing diabetes research, information, and advocacy.

  Phone: 1-800-diabetes or 1-800-342-2383
  Mail: 1701 North Beauregard Avenue, Alexandria, VA 22311
  E-mail: customerservice@diabetes.org
  Internet: http://www.diabetes.org

Appendix A: High-fiber foods

The table below[14] lists the dietary fiber content of certain foods and their serving sizes.

HIGH-FIBER FOODS

Food	Serving Size	Dietary Fiber (in grams)
Grain and Cereal Products		
Bulgur, cooked	1 cup	8.0
Bagel (Plain)	4 inch Diameter	2.0
Bread		
Cracked wheat	1 slice	1.0
Wheat	1 slice	1.0
White	1 slice	1.0
Whole wheat	1 slice	2.0
Brown rice (Cooked)	1 cup	4.0
Cereal (Ready-to-Eat)		
Bran (with Raisins)	1 cup	7.0
Bran	1/2 cup	10.0
Wheat bran	3/4 cup	5.0
Corn flakes (Plain)	1 cup	1.0
English muffin (Plain)	1 muffin	2.0
Instant oatmeal (Plain)	1 packet	3.0
Muffins		
Blueberry muffin	1 muffin	1.0
Corn muffin	1 muffin	2.0
Oat bran muffin	1 muffin	3.0
Wheat bran muffin (with raisins)	1 muffin	3.0
Popcorn (Air-popped)	1 cup	1.0
Whole wheat spaghetti (Cooked)	1 cup	6.0
Vegetables		
Sweet corn (Canned)	1 cup	4.0
Potato (Baked with Skin)	1 medium	4.0
Potato (Baked, No Skin)	1 medium	2.0
Broccoli (Raw)	1 cup	3.0
Carrots (Cooked)	1 cup	5.0
Brussels Sprouts (Cooked)	1 cup	4.0
Eggplant (Cooked)	1 cup	2.0
Collard greens (Cooked)	1 cup	5.0

Food	Serving Size	Dietary Fiber (in grams)
Beans		
Baked beans (Plain)	1 cup	13.0
Black beans	1 cup	15.0
Lentils	1 cup	16.0
Lima beans (Canned)	1 cup	12.0
Kidney beans (Red)	1 cup	13.0
Pinto beans	1 cup	15.0
White beans	1 cup	13.0
Chickpeas	1 cup	12.0
Peas (Split)	1 cup	16.0
Refried beans (Canned)	1 cup	13.0
Nuts		
Almonds, Hazelnuts, Pecans, Pistachios	1 oz.	3.0
Roasted peanuts	1 oz.	2.0
Macadamias, Walnuts	1 oz.	2.0
Chestnuts (Roasted)	1 cup	7.0
Peanut butter	1 TBSP	1.0
Fruits		
Avocado (Raw)	1 oz.	1.0-2.0
Raspberries (Raw)	1 cup	8.0
Mango (Raw)	1 cup	3.0
Pear (with Skin)	1 medium	4.0
Strawberries (Raw)	1 cup	4.0
Apple (with Skin)	1 medium	4.0
Peach (with Skin)	1 medium	3.0
Banana	1 medium	3.0
Plantain	1 medium	4.0
Prunes (Dried)	5 prunes	3.0
Raisins (Seedless)	1 cup	6.0

Appendix B: Sample menu

To give you an idea of what a planned day of meals and snacks might look like, a menu example for one day is shown below. This menu is designed for a woman who weighed 130-135 pounds before becoming pregnant and developing gestational diabetes. The menu shown here may not be the right menu for you; this menu is not meant to take the place of your health care provider's advice on menus and meal plans. **Talk to your health care provider for more specific information about the right meal plan for you.**

Breakfast—Hardboiled egg. toast, grapes, and milk

- 1 egg, hard-boiled
- 1 slice whole wheat bread
- 1 tsp canola-based, trans-fat free margarine
- 1/3 lb grapes (any kind)
- 12 fluid ounces, non-fat skim milk

Fat: 11 g; Calories: 394; Protein: 22g;
Total Carbohydrate 56g;
Exchanges: 1.3 fat; 1.3 milk; 1.6 fruit; 0.8 meat; 0.8 bread

Mid-Morning Snack—Half a peanut butter and jelly sandwich with milk

- 1 slice whole wheat bread
- 1 TBSP peanut butter (smooth or chunky)
- 1 TBSP reduced-sugar jelly or reduced-sugar jam
- 8 fluid ounces non-fat skim milk

Fat: 9.7 g; Calories: 276; Protein: 14.5g
Grams (g) carbohydrate: 36g
Exchanges: 0.5 other carbohydrates; 1.6 fat; 0.9 milk; 0.4 meat; 0.8 bread

Lunch—Cheese, tomato, and black bean pita with milk

- 1 pita, large, whole wheat
- Blend the following for inside the pita: 1/2 cup uncooked black beans, 1/2 fresh tomato (chopped), 1 ounce low-fat sharp cheddar cheese (shredded), 1 TBSP salsa, and 2 tsp olive oil
- 8 fluid ounces non-fat skim milk

Fat: 17.7 g; Calories: 547.7; Protein: 29.2g
Grams (g) carbohydrate: 71g
Exchanges: 2.8 fat, 0.9 milk, 0.5 vegetable, 1.0 meat, 3.4 bread

Appendix B: Sample menu (Continued)

The menu shown here may not be the right menu for you; this menu is not meant to take the place of your health care provider's advice on menus and meal plans. **Talk to your health care provider for more specific information about the right meal plan for you.**

Mid-Afternoon Snack—Apple and peanut butter

- 1 medium apple with peel, cored and sliced
- 1 TBSP peanut butter (smooth or chunky)
- 12 fluid ounces, no-fat skim milk

Fat: 9.2g; Calories: 295; Protein: 15.8
Grams (g) carbohydrate: 41g
Exchanges: 1.6 fat, 1.3 milk, 1.3 fruit, 0.4 meat

Dinner—Grilled chicken with pineapple, rice, and green beans

- 3 ounce chicken breast, boneless/skinless, raw
- 4 ounce pineapple rings, canned in juice
- 1 TBSP sesame seeds, toasted
- 1 TBSP sesame oil, dark
- 2 tsp soy sauce, low-sodium
- 1/2 cup green beans, cooked
- 1/4 cup instant rice, uncooked
- 1 tsp cornstarch
- 1/4 lb fresh strawberries
- 8 ounces water

To prepare: place chicken breast in shallow container; combine 1/2 pineapple juice, toasted sesame seeds, sesame oil, cornstarch, and soy sauce in bowl; pour over chicken breast. Place half the rings from the pineapple over the chicken; refrigerate 1 hour or overnight. Remove chicken and pineapple from marinade and discard marinade; grill or broil chicken breast and pineapple until cooked through (turning as needed). Cook rice as indicated on package. Prepare green beans as indicated on package. Serve with strawberries for dessert.

Fat: 16.2g; Calories: 523.7; Protein: 23.0g
Grams (g) carbohydrate: 60g
Exchanges: 2.4 lean meat, 2.8 fat, 1.8 vegetable, 1.8 fruit, 1.1 bread

Daily Totals

Total fat: 63.8g; Total Calories: 2036.4; Total Protein: 104.5g
Grams (g) carbohydrate: 264g
Exchanges: 10.1 fat, 4.4 milk, 4.7 fruit, 6.1 bread, 2.6 meat, 2.4 lean meat, 2.3 vegetable, 0.5 other carbohydrates

Appendix B: Sample menu (Continued)

"Free" Food and Snack Options

- **Raw vegetables**—You can have up to 2 cups of these "free" raw vegetables, without having to count the calories or carbohydrates into your meal plan.: cabbage (all varieties), celery, cucumber, endive, lettuces (all varieties), mushrooms, peppers, radishes, spinach.
- **Drinks**—You can count 8 fluid ounces of these sugar-free or unsweetened drinks as 1 snack: broth, bouillon, or consommes (also the low-salt varieties), carbonated or mineral water, club soda. You should also drink a lot of water while you are pregnant with gestational diabetes.
- **Condiments**—You can use the following in your meal plan, in the amounts listed: catsup (1 tablespoon), fat-free cream cheese (1 tablespoon), horseradish, fat-free mayonnaise (1 tablespoon), fat-free margarine (1 tablespoon), reduced-fat margarine (1 teaspoon), mustard, non-stick cooking spray, fat-free salad dressing (1 tablespoon), salsa (1/4 cup), fat-free or reduced-fat sour cream (1 tablespoon), soy sauce (light), taco sauce (1 tablespoon), vinegar, Worcestershire sauce
- **Seasonings**—Use these items to season your foods without adding condiments. Please note that "salt" seasonings are high in sodium; use only in small amounts. Serving size for these seasonings is 2-3 dashes: garlic, herbs (dried or fresh), flavoring agents, pimento, spices, Tabasco or hot pepper sauce.

Source: Kraft ™ Foods Diabetic Choices Daily Recipes, 2002; also Treating Diabetes with Good Nutrition, Diabetic Meal Plans, MediConsult.com, Inc. 2000.

Appendix C: Sample glucose monitoring record sheet

Name: _____

Target Blood Sugar Levels

Fasting	No higher than 95
1 hour after eating	No higher than 140
2hours after eating	No higher than 120

Remember, if your blood sugar is out-of-range:

- Write down what you ate and how much you ate in the Notes column.
- Write down what exercises you did and how long you did it in the Notes column.
- Write down any skipped meals or snacks in the Notes column.

Date	Blood Glucose Level				Insulin Amount	Urinary Ketone Levels	Notes
	Fasting	1 2 Hours after Breakfast	1 2 Hours after Lunch	1 2 Hours after Dinner			

Appendix D: Sample food and physical activity record sheet

Name: _____

In the space below, write down:

- Everything you eat or drink and at what time you eat or drink it.
- How your food was prepared, such as broiled, baked, fried, or uncooked.
- Things you add to food, such as butter, salad dressing, or artificial sweetener.
- The amount of each food you ate.
- The amount of carbohydrates you ate, in grams, as indicated in the Nutritional Facts label on the food package
- All of your physical activity, such as brisk walking, swimming, or prenatal exercise class.
- How much time you spent doing physical activity.

Date	Time	Food, How It Was Prepared, and Things You Added to It	Amount	Carbohydrates	Physical Activity	Time Spent Doing Physical Activity

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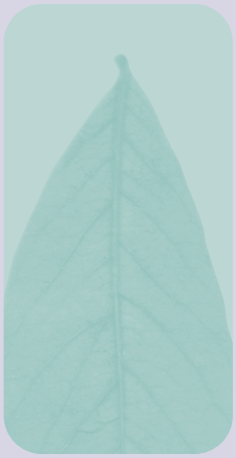

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