

EDUCATION

# Living With Gestational Diabetes



Allina Health



## Gestational Diabetes Overview

You've probably heard of diabetes, and think of it as a lifelong disease. There are several types of diabetes, and most types do last a lifetime. Gestational diabetes:

- occurs only during pregnancy
- usually goes away after your baby is born
- often does not have symptoms that show.

During pregnancy, important hormones that are needed for the baby's growth interfere with insulin. This happens to all women during pregnancy, but most women can make enough extra insulin to keep their blood glucose levels under control. With gestational diabetes:

- Your body has trouble producing the extra insulin needed.
- Your blood glucose levels become higher than normal.
- The extra glucose is passed on to your baby.

Remember, *you did not cause this to happen to you and your baby* — gestational diabetes often happens for reasons that can't be explained.

## How Gestational Diabetes Can Affect Your Baby

Untreated gestational diabetes can:

- cause your baby to store extra glucose as extra fat and have a higher than average birth weight. This can result in delivery problems for both you and your baby.
- cause your baby to be born with low blood glucose (called hypoglycemia).

## Managing Gestational Diabetes

The goal of managing gestational diabetes is to keep your blood glucose levels within a “normal” range for pregnancy. Your health care provider will review your test results and tell you what happens next. Information covered may include:

- a special meal plan
- blood glucose monitoring
- urine testing for ketones
- physical activity guidelines
- medicine therapy.

Sometimes, even when all guidelines are carefully followed, blood glucose doesn't stay at an acceptable level. In these cases, it's necessary to add medicines to your management plan.

## Healthy Eating Habits

- Choose a variety of healthful foods.
- Eat three meals and three snacks during the day.
- Eat something every 2 to 3 hours.
- Do not skip meals or snacks.
- Eat a small breakfast.
- Do not eat too much or too little. Your baby has constant nutritional needs and counts on you to eat the right amount of healthful foods.

## Understanding How Food Affects Your Body

All food affects blood glucose levels. Carbohydrates turn into glucose, affecting your blood glucose levels. There are no good or bad foods. Eating a variety of foods can improve your health and keep mealtimes interesting.

The foods you eat fall into three main groups:

- **Protein:** Protein helps build body cells for growth and healing. Some examples of protein include meat, poultry, fish and eggs.
- **Fat:** Fat helps the body absorb certain vitamins, lubricates joints and muscles, and adds flavor to food. Some examples of fat are mayonnaise, butter, margarine, oils, nuts and salad dressing.
- **Carbohydrate:** Carbohydrates are your best energy source.

All carbohydrate foods turn into glucose. Carbohydrate foods are starches (breads, crackers, cereals, rice, pasta, potatoes, beans etc.), fruit and fruit juice, milk, vegetables and sweets.

### Carbohydrates

All foods can affect blood glucose levels, but carbohydrates affect blood glucose the most. Carbohydrate foods give you and your baby energy.

Carbohydrate foods should make up 40 to 45 percent of the total calories you eat each day.

Carbohydrate foods are:

- beans and lentils
- breads

- cereals
- fruits
- grains
- milk and yogurt
- starchy vegetables
- sweets
- fruit and vegetable juices.

### **Did You Know?**

Sweets may make your blood glucose go too high. Save eating something sweet for a very special occasion or a rare treat.

## **Carbohydrate counting**

Learning to count carbohydrates is a way to help you *manage* the amount of carbohydrate you eat each day at your meals and snacks.

A carbohydrate choice is a serving of food that contains about 15 grams of carbohydrate. Pregnant women need between 12 to 16 carbohydrate choices every day.

Remember: it is not healthy to leave out carbohydrate foods to control your blood glucose. On the next few pages are examples of carbohydrate choices. Try to choose a healthful variety of carbohydrate choices each day.

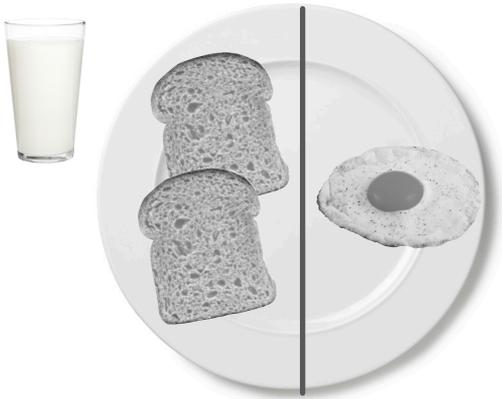
**Tip:** To help control your blood glucose, avoid carbohydrates that often cause blood glucose to go up too high, such as soda, fruit juices or drinks, lemonade or Kool-Aid®, chocolate milk, or sugar-sweetened coffee, tea or other beverages.

## Basic Meal Planning

Here are some ideas for meals and snacks, along with the number of recommended carbohydrate choices for each. You do not need to count protein, fat and vegetables but make sure to eat them along with carbohydrates to help control your blood glucose.

### Breakfast

- 2 to 3 carbohydrate choices (30 to 45 grams)



**Tip:** Blood glucose is hard to control in the morning when the hormones that boost your blood glucose level are released. To help, follow these **breakfast** tips:

- Eat a small breakfast.
- Eat whole-grain bread products.
- Eat a food that has protein.
- Do not eat cereal or fruit.
- Do not drink fruit juice at breakfast or any other time of the day. Fruit juice raises your blood glucose very quickly.

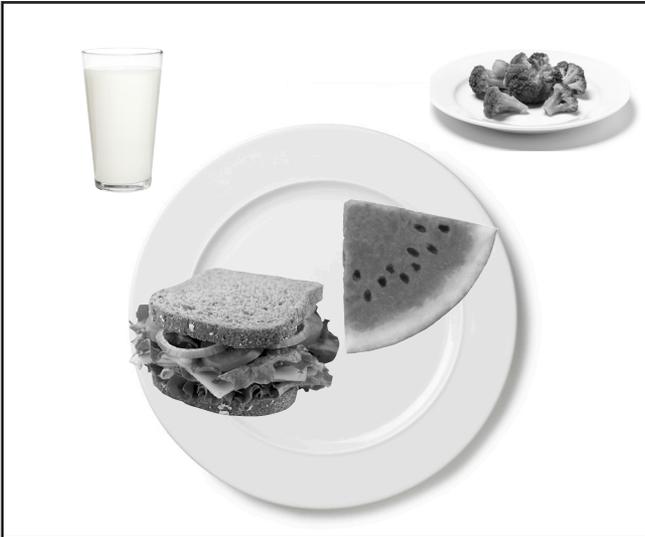
## Morning snack

- 1 to 2 carbohydrate choices (15 to 30 grams)



## Lunch

- 3 to 4 carbohydrate choices (45 to 60 grams)



## Afternoon snack

- 1 to 2 carbohydrate choices (15 to 30 grams)



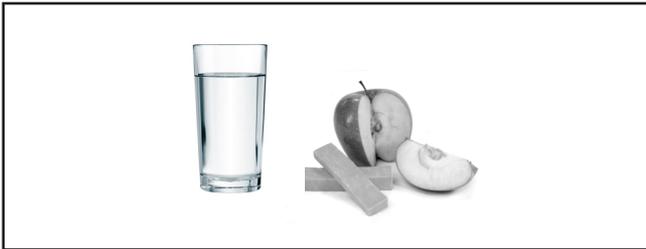
## Dinner

- 3 to 4 carbohydrate choices (45 to 60 grams)



## Evening snack

- 1 to 2 carbohydrate choices (15 to 30 grams)



## Quick Carbohydrate Guide

The following lists give examples of some foods that are equal to one carbohydrate choice or 15 grams of carbohydrate.

Breads, Cereals, Grains, Starchy Vegetables	
<ul style="list-style-type: none"> <li>■ 1 slice bread (1 ounce)</li> <li>■ 1 flour tortilla (6 inches)</li> <li>■ 1 mini bagel</li> <li>■ one half English muffin</li> <li>■ 1 4-inch pancake</li> <li>■ 1 frozen waffle</li> <li>■ one half hamburger or hot dog bun</li> <li>■ <math>\frac{3}{4}</math> cup ready-to-eat unsweetened cereal</li> <li>■ <math>\frac{1}{2}</math> cup cooked cereal</li> <li>■ 1 slice thin crust pizza</li> </ul>	<ul style="list-style-type: none"> <li>■ 1 cup broth-based soup with noodles, beans, rice or potatoes</li> <li>■ 4 to 6 small crackers</li> <li>■ <math>\frac{1}{3}</math> cup pasta or rice (cooked)</li> <li>■ <math>\frac{1}{2}</math> cup beans, peas, corn, sweet potatoes or mashed or boiled potatoes (cooked)</li> <li>■ <math>\frac{1}{4}</math> large baked potato</li> <li>■ 2 corn tortillas</li> </ul>
Fruit	
<ul style="list-style-type: none"> <li>■ 1 small fresh fruit</li> <li>■ <math>\frac{1}{2}</math> cup canned fruit in light syrup or own juices</li> </ul>	<ul style="list-style-type: none"> <li>■ 15 small grapes</li> <li>■ 1 cup melon, berries</li> <li>■ <math>\frac{1}{2}</math> cup juice*</li> </ul>
Milk	
<ul style="list-style-type: none"> <li>■ 1 cup milk</li> <li>■ 1 cup soy milk</li> </ul>	<ul style="list-style-type: none"> <li>■ <math>\frac{3}{4}</math> cup fat-free yogurt sweetened with sugar-free sweetener (6 ounces)</li> </ul>
*In general, avoid.	

## Sweets

**In general, enjoy sweets only on special occasions.**

- |  |   |
|--|---|
| <ul style="list-style-type: none"><li>■ 2-inch square cake (unfrosted)*</li><li>■ 1 3-inch cookie*</li><li>■ ½ cup ice cream or frozen yogurt*</li><li>■ 1 small muffin*</li></ul> | <ul style="list-style-type: none"><li>■ ¼ cup sherbet or sorbet*</li><li>■ 1 tablespoon syrup, jam, jelly, table sugar or honey*</li><li>■ 2 tablespoons light syrup*</li></ul> |
|--|---|

## Snacks

- |  |  |
|--|--|
| <ul style="list-style-type: none"><li>■ 10 to 15 potato or tortilla chips</li><li>■ 3 graham cracker squares</li><li>■ 1 granola bar</li></ul> | <ul style="list-style-type: none"><li>■ 20 pretzels (mini twists)</li><li>■ 6 Ritz® or saltine crackers</li><li>■ 6 Triscuits®</li><li>■ 3 cups popcorn (popped)</li></ul> |
|--|--|

## Convenience and Combination Foods

- |  |  |
|--|--|
| <ul style="list-style-type: none"><li>■ ½ cup casserole (hot dish)</li><li>■ ½ cup chili</li><li>■ ½ cup pasta salad or potato salad</li></ul> | <ul style="list-style-type: none"><li>■ 1 cup soup: broth type</li><li>■ 1 cup soup: cream type</li><li>■ one-third of 6-inch sub sandwich</li></ul> |
|--|--|

**\*In general, avoid.**

## **Noncarbohydrate Food Groups**

**You do not need to count these foods. Eat as desired.**

### **Meat and Meat Substitutes**

- poultry
- fish
- eggs

- cottage cheese
- cheese
- tofu

### **Fats**

- butter/margarine
- oils

- salad dressings
- nuts

### **Nonstarchy Vegetables**

- carrots
- green beans
- lettuce or greens

- tomatoes
- broccoli
- cauliflower

## Using Food Labels

Many foods contain labels that tell you the number of grams of carbohydrate in one serving. Fifteen grams of carbohydrate equal one carbohydrate choice.

### Food label for a granola bar

<b>Nutrition Facts</b>	
Serving Size 1 bar (40 g)	
Amount Per Serving	
<b>Calories</b> 170	Calories from Fat 60
<b>% Daily Value*</b>	
<b>Total Fat</b> 7 g	11%
Saturated Fat 3 g	15%
Trans Fat 0 g	
<b>Cholesterol</b> 0 mg	0%
<b>Sodium</b> 160 mg	7%
<b>Total Carbohydrate</b> 24 g	8%
Dietary Fiber 3 g	12%
Sugars 10 g	
<b>Protein</b> 5 g	

Source: U.S. Food and Drug Administration

- **Serving size:** The serving size lists how many calories and nutrients are in one serving of the food. If you eat twice the serving size, you are getting twice the calories, carbohydrate, fat, sodium, etc.
- **Total fat:** Total fat includes all types of fat. Try to eat foods low in saturated and trans fats.
- **Saturated fat:** Saturated fat raises LDL cholesterol (the “bad”) cholesterol. Reduce saturated fats to help protect your heart.
- **Trans fat:** Trans fats can raise LDL cholesterol, lower HDL cholesterol, and add to heart disease. Eat as little trans fats as possible. Avoid foods that contain “partially hydrogenated” and “hydrogenated” oils, including shortening.
- **Total carbohydrates:** Carbohydrates give your body energy. However, too many can raise your blood glucose.
- **Fiber:** If the food has 5 or more grams of fiber, subtract half of the grams from the total carbohydrate.
- **Sugar:** Sugar is included in the number of total carbohydrates.

Grams of carbohydrate	Number of carbohydrate choices
0 to 5	0
6 to 10	$\frac{1}{2}$
11 to 20	1
21 to 25	$1\frac{1}{2}$
26 to 35	2
36 to 40	$2\frac{1}{2}$
41 to 50	3
51 to 55	$3\frac{1}{2}$
56 to 65	4
66 to 70	$4\frac{1}{2}$
71 to 80	5
81 to 85	$5\frac{1}{2}$
86 to 95	6
96 to 100	$6\frac{1}{2}$
101 to 110	7

## **Monitoring Blood Glucose Levels and Ketones**

Is your gestational diabetes management plan working? To measure your success at lowering your blood glucose level, you need to check your levels four or more times during the day with a small device called a blood glucose meter. There are several different types. Your health care provider or diabetes educator will help you select a meter and teach you how to use it.

### **Checking and recording blood glucose levels**

It is important to check your blood glucose at consistent, regular times. Each day, check:

- before breakfast
- 1 hour after the start of breakfast (meal one)
- 1 hour after the start of lunch (meal two)
- 1 hour after the start of dinner (meal three).

### **Checking for ketones**

You'll check your urine for ketones each day and record the results. When you get up for the day, check your first morning urine. Ideally, ketone readings should be negative to a trace.

### **Avoiding ketones**

Remember that ketones may be a signal that you need to eat more. The following will help to keep your ketones at a healthy level for you and your baby.

- Don't skip meals or snacks.
- Eat three meals and three snacks every day.
- Eat all of the carbohydrate choices in your meal plan.
- Include protein in each meal or snack.

## Taking Insulin During Pregnancy

When your blood glucose levels stay raised despite meal planning and physical activity, insulin must be added to your management plan to keep you and your baby healthy. Pregnancy requires that your body produce extra amounts of insulin.

Insulin is a hormone that is made by the pancreas. If your pancreas does not make enough insulin, injections can help you meet the need.

Your health care provider and diabetes educator will teach you how to inject insulin safely and comfortably.

### Determining the right insulin and dosage

Your health care provider will decide what kind of insulin is right for you, how much to use and when you should take it.

**Important:** If you are on insulin and feeling sick, call your health care provider.

## Time-action of Different Insulins

Insulins	Starts Working	Peaks	Stops Working
<b>Rapid Acting:</b> Humalog® (lispro) NovoLog® (aspart) Apidra® (glulisine)	5 to 15 minutes	1 to 2 hours	2 to 4 hours
<b>Intermediate Acting:</b> NPH (N)	2 to 4 hours	4 to 8 hours	10 to 16 hours
<b>Basal*:</b> Lantus® (glargine) Levemir® (detemir)	2 hours	No peak	24 hours
<b>*Lantus® and Levemir® cannot be mixed with any other insulin.</b>			

## How to Help Insulin Work Best

- Take your insulin at the same times each day as directed.
- Talk with your health care provider if you feel sick.
- Follow any instructions your health care provider gives you.
- Don't change your meal plan, physical activity, prescribed medicines or insulin routines without talking to your health care provider.

### Did You Know?

The insulin you inject only lowers *your* blood glucose. It does not cross the placenta to your baby.

## Giving Yourself Insulin Injections

The thought of injecting insulin may make you feel anxious. However, with good training from your diabetes educator, doing it can be surprisingly comfortable.

Your health care provider and diabetes educator will show you where insulin can be injected. The most common site for pregnant women is the abdomen. The needle poses no threat to your baby, which is well protected in your uterus far away from the needle.

Ask your health care provider or diabetes educator about how to safely dispose of used sharps (needles, lancets and syringes).

## Hypoglycemia (Low Blood Glucose)

Hypoglycemia means that your blood glucose is low — generally below 60 to 80 mg/dL. Symptoms occur quickly and need to be treated as soon as possible.

Causes	Prevention
Not enough food.	Eat all your meals and snacks on time.
More physical activity than usual.	Avoid exercise during diabetes medicine peak time.
Too much diabetes medicine.	Take only the dose that has been prescribed.

## Symptoms

You may have one or more of the following symptoms:

- sweating
- shaking
- feeling weak or tired
- feeling anxious or nervous feeling
- racing heart
- feeling hungry
- having a mild headache
- tingling sensation around lips and tongue.

## Treating hypoglycemia

- Test your blood glucose as soon as you feel symptoms.
- If your level is low, treat with 15 grams of carbohydrate. Examples include:
  - ½ cup of fruit juice (you don't need to add sugar)
  - ½ cup of regular pop
  - 1 tablespoon of honey or sugar
  - 2 tablespoons of raisins
  - 3 large marshmallows
  - 1 cup of skim milk
  - 3 to 4 glucose tablets
  - 15 grams of glucose gel.
- After treating with one of these foods, test your blood glucose every 10 to 15 minutes. If it is still low, treat with another 15 grams of carbohydrate until your symptoms are gone or your blood glucose level is above 80.

You are never harming yourself if you take glucose tablets or eat a simple sugar food because you think you have low blood glucose.

If you are injecting insulin, always carry a simple sugar food with you. These include raisins, marshmallows, glucose tablets or a juice box.

### **Follow-up treatment after hypoglycemia**

After you've experienced hypoglycemia, you may need more food.

- If your next meal or snack is less than 1 hour away, eat at your normal time.
- If your next meal or snack is 1 to 2 hours away, eat an extra snack that contains 15 grams of carbohydrate.
- If your next meal or snack is more than 2 hours away, eat a snack that contains 30 grams of carbohydrate with protein.

Do not subtract what you eat to treat hypoglycemia from your next snack or meal. This food is needed to keep your blood glucose in a better range.

## **Monitoring Your Baby's Health**

"Is my baby healthy?" It's the question on the mind of every pregnant woman. Your gestational diabetes may add concern about your baby's health.

### **Fetal movement counts**

There is a simple way to check your baby's health at home or anywhere, called a fetal movement count. Every baby has normal sleep and awake times, so your baby will have periods of both quiet and active time. A movement may be a kick, stretch, turn or flip.

By keeping track of your baby's movements for each day during the third trimester, you will get to know your baby's activity pattern. This can help alert you if your baby is not feeling well.

A total of 10 or more distinct movements in 2 hours suggests your baby is doing well. If your baby is moving less than usual, this may be a sign that he or she is under some stress or that a problem may be developing. **If you are worried and do not have at least five movements in 1 hour, call your health care provider.**

### **When to count**

Once a day, during the third trimester of your pregnancy, record your baby's activity. Choose the time of day your baby is the most active, and begin timing fetal movements at about the same time every day.

If you smoke and have not been able to quit during your pregnancy, try not to smoke for at least 1 hour before you start counting. (Your baby gets less oxygen and food because nicotine from cigarettes tightens up your blood vessels.)

### **How to count**

- Choose a quiet place where you can focus on your baby's movements without being distracted.
- Lie down on your side or sit in a comfortable chair.
- When you count the 10th movement, write down the time and stop counting. Figure out how long it took to record the 10 movements. (Often, the 10 movements occur in fewer than 30 minutes.)

## When to call your health care provider

Call your health care provider if:

- you notice a significant change in your baby's activity (such as fewer than half the number of movements you normally feel)
- your baby has not moved 10 times in 2 hours
- you have questions or concerns.

## Other Tests To Monitor Your Baby's Well-being

Your health care provider may also do the following tests to check your baby's progress and growth.

### Nonstress test

- You lie down for about 30 minutes.
- Two small, round parts of a fetal monitor are placed on your abdomen.
  - One records your baby's heart rate.
  - The other detects any uterine activity, such as preterm contractions.
- If your test results are "reactive," that's good news — your baby is responding in a healthy way.

### Biophysical profile

- Uses both ultrasound and a fetal monitor to evaluate five areas: your baby's breathing motions, body movements, muscle tone, amniotic fluid amount and heart rate activity. The fetal monitor evaluates the heart rate activity.
- Two points are given for each measurement (a score of eight to 10 is reassuring). Lower scores may mean that your health care provider will want to further evaluate your baby's health.

- Because you have gestational diabetes, you may need this test done regularly until your baby's birth.

## **Ultrasound**

Ultrasound uses sound waves to “see” your baby and placenta. This test works a bit like underwater radar.

- Gel is applied to your abdomen as you rest.
- A technician moves a transducer (microphone) over your abdomen.
- A picture of your baby and placenta appears on a nearby monitor. Sometimes the ultrasound equipment can take a photo for you to take home.

Ultrasound can:

- determine the age of your baby
- tell if you are carrying twins
- help determine your due date
- measure your baby's growth and development
- sometimes tell your baby's gender.

## **Labor, Birth and Recovery**

Although you've been dealing with gestational diabetes during pregnancy, chances are that your labor and the birth of your baby won't differ much from any other mother's. Most women with gestational diabetes go through labor and birth without complications.

If you've been taking insulin, discuss with your health care provider how insulin needs will be managed during labor.

## **During labor**

Your blood glucose levels will be monitored. Sometime during labor, or perhaps shortly after your baby's birth, your level will probably return to normal.

## **Your baby's recovery**

During the first few hours after birth, your baby's blood glucose level will be monitored carefully. If your blood glucose level was high before the birth, your baby's blood glucose level may be low after birth. If needed, extra glucose may be given to your baby.

## **Your recovery**

After your baby's birth, your blood glucose levels should return to normal (less than 100 fasting and less than 140 2 hours after eating). Your health care provider may have your levels tested while you're still in the hospital. At your first postpartum visit, your blood glucose level will be tested.

## **Your next pregnancy and gestational diabetes**

Two out of three women who have had gestational diabetes during a pregnancy will have it again during a future pregnancy. (Gestational diabetes goes away as soon as your baby is born.)

- Preparing for a healthy pregnancy for you and your baby starts before you get pregnant. Make sure you do the following as you plan for your next pregnancy.
- It is important to get your blood glucose checked before you get pregnant. Make an appointment at your clinic to have your blood glucose checked before you stop taking birth control.

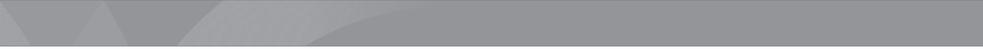
- When you're pregnant again, tell your health care provider of your gestational diabetes history at your first prenatal visit.
  - Expect to have a glucose screening at this visit.
  - If the test is negative, screenings will be repeated at 24 to 28 weeks and again at 32 weeks.
  - If the test is positive, monitoring and meal plan strategies will begin.
- If you find out you are pregnant but did not plan the pregnancy, get your blood glucose checked right away. You will be able to start treatment early if your blood glucose is high.

## **Your risk of getting type 2 diabetes**

Because you've had gestational diabetes, you have an increased risk (40 to 60 percent) of developing type 2 diabetes during your lifetime. You can reduce this risk by eating well-balanced meals, maintaining a healthy body weight and exercising regularly.

Stay alert to the signs and symptoms of developing diabetes, including:

- increased thirst
- frequent urination
- sores that do not heal
- frequent yeast infections
- less energy
- blurred vision.



If you have any of these symptoms, it doesn't necessarily mean you have type 2 diabetes, but it's important that you call your health care provider. In some cases, there are no symptoms at all.

### **Risk of your baby getting diabetes**

Your baby isn't at risk for developing diabetes simply because of your gestational diabetes. If you follow the guidelines for managing your gestational diabetes and maintain a normal blood glucose level during pregnancy, your baby is less likely to be predisposed to obesity and type 2 diabetes later in life.



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