

OHIO STATE MATERNITY CENTER

**buckeye**baby



# Diabetes During Pregnancy



**THE OHIO STATE UNIVERSITY**

WEXNER MEDICAL CENTER



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**This book is for informational purposes only. Talk to your healthcare provider if you have any questions about your care.**

For more health information, go to [wexnermedical.osu.edu/patiented](http://wexnermedical.osu.edu/patiented) or contact the Library for Health Information at 614-293-3707 or [health-info@osu.edu](mailto:health-info@osu.edu).

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For a digital copy of this book, please visit [go.osu.edu/pted3706](http://go.osu.edu/pted3706).

# Diabetes and Pregnancy

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## How will diabetes affect my pregnancy?

Several changes may be needed during pregnancy to keep your blood sugar in a healthy range.

### First Trimester

Insulin needs may drop during the first 3 months, called the first trimester, because the growing baby uses some of your blood glucose, also called blood sugar. You may also have morning sickness and eat less than usual. This can decrease your blood sugar level and insulin needs. You must guard against low blood sugar, also called hypoglycemia or an insulin reaction, by following your nutrition plan closely. Do not skip meals or snacks because you feel nauseous. Morning sickness may be helped by eating. If you cannot eat larger meals, try to eat small frequent meals. Have a snack at bedtime and carry a snack with you during the day.

#### Signs of low blood sugar include:

- Nervousness
- Sweating
- Hunger
- Fast heart beat
- Drowsiness
- Weakness
- Headache

Each person will become familiar with their own signs of low blood sugar. Treat low blood sugar by eating carbohydrates, such as milk, crackers, and fruit.

### Second Trimester

About the fourth month when you start the second trimester, your insulin needs will increase. The placenta begins to make hormones that interfere with the work of insulin. You will likely need more insulin to overcome the effects of the placenta. Your healthcare provider may order different insulins to keep your blood sugar in a healthy range. Sometimes during pregnancy, a short stay in the hospital is needed to closely check your blood sugar and medicines.

### Third Trimester

During the last 3 months of your pregnancy, called the third trimester, your baby will grow quickly. You will need to follow your nutrition plan to help your baby grow. The extra food along with the effect of placental hormones will increase your insulin needs. Insulin needs may double or triple from your pre-pregnancy insulin needs if you have type 1 diabetes. Your provider will continue to adjust your insulin to meet your body's needs.

In rare cases, your provider may recommend that you take corticosteroids to speed up the development of your baby's lungs before your baby is born. When babies are born too early, their lungs are not yet fully developed, and they have problems breathing. If steroids are given, this could impact your blood sugar control, and you may need more insulin for a short period of time.

## How do I keep my blood sugar in a healthy range during pregnancy?

Follow a daily routine:

- Regular meals
- Insulin injections before meals and bedtime, as directed by your provider
- Moderate exercise

Check your blood sugar at home as often as you are directed. Daily blood sugar checks let you see patterns of high and low blood sugar. Keep an accurate record of your results and be sure to bring these results to each clinic visit. You may also need to test your urine for ketones as instructed by your provider. Keep a record of your urine checks also.

## How often do I need to check my blood sugar level?

Blood sugar testing may be needed 4 to 8 times a day. The test is done by sticking a finger for a drop of blood. The blood is put on a test strip in a meter. **Your goal is to keep your blood sugar level between 60 to 120 mg/dL.** If you do not know how to use a glucose meter, ask your nurse or pharmacist to teach you.

## Will my baby be healthy?

**If your blood sugar stays in a healthy range during your pregnancy,** your chances of having a healthy baby are about the same as a pregnant person who does not have diabetes. However, if your blood sugar level is not kept at a near normal level, your baby may have a number of problems. To find out how healthy your baby is, your provider may order tests to monitor baby's heart rate and activity levels. This is in addition to blood tests, urine tests, and ultrasound testing.

**If blood sugar levels are not kept in a healthy range in the first 3 months of pregnancy,** your baby has a higher risk of:

- Birth defects
- Being large at birth (over nine pounds), which can make delivery more difficult
- Low blood sugar after birth

Your baby will be watched closely in the Neonatal Intensive Care Unit (NICU) after delivery, as needed.

**The key to helping prevent problems for your baby is to keep your blood sugar level as close to normal as possible.**

## Will I have complications?

The number and type of complications depends on several factors. One of them includes keeping your blood sugar in a healthy range. Other factors are related to how your general health has been affected by your diabetes. In general, if your blood sugar levels were kept in a healthy range before your pregnancy, your complications from diabetes will be fewer.

A complication that is common for pregnant people with diabetes is the development of preeclampsia. Preeclampsia begins at conception, but symptoms do not show until after 20 weeks of pregnancy. Symptoms include severe swelling, high blood pressure, and protein in the urine. Treatment for this condition is **very important** for your health and the health of your baby. Discuss symptoms of preeclampsia with your provider.

## What are the chances of my baby having diabetes?

The chances of your baby having diabetes at birth are small.

- **For people who have type 1 diabetes during pregnancy**, most of their children never develop diabetes.
- **For people who have type 2 diabetes during pregnancy**, their children may develop diabetes later in life as an adult.

Talk to your provider about your concerns.

## Can I breastfeed my baby?

After delivery your insulin needs will decrease if you have type 1 or type 2 diabetes. Your insulin will be adjusted over several days. This should not affect your choice to breastfeed. Your body will need proper nutrition, including simple sugars, to produce milk. You will need to increase your calories by about 500 calories each day. Your provider will help you adjust your diet and insulin to meet your and your baby's nutritional needs.

## What does all this mean?

The more you know about diabetes during pregnancy, the easier it will be for you to manage your blood sugar and prevent problems. Many professionals can help you, but you are responsible for your day to day care. By taking good care of yourself, you will increase your chances of having a safe pregnancy and a healthy, normal baby.

## Resources for diabetes

For more information about diabetes, please talk to any member of your healthcare team and visit these websites:

- **Ohio State Diabetes and Metabolism Research Center (DMRC)**, [medicine.osu.edu/departments/internal-medicine/dmrc](http://medicine.osu.edu/departments/internal-medicine/dmrc)
- **American Diabetes Association**, [diabetes.org](http://diabetes.org)
- **Academy of Nutrition and Dietetics**, [eatright.org](http://eatright.org)
- **American Heart Association**, [heart.org/en/health-topics/diabetes](http://heart.org/en/health-topics/diabetes)
- **Centers for Disease Control and Prevention**, [cdc.gov/diabetes](http://cdc.gov/diabetes)
- **JDRF**, [jdrf.org/t1d-resources](http://jdrf.org/t1d-resources) – type 1 diabetes resources and support
- **U.S. National Library of Medicine's MedlinePlus**, [medlineplus.gov/diabetesmellitus.html](http://medlineplus.gov/diabetesmellitus.html)
- **National Institute of Diabetes and Digestive and Kidney Diseases**, [niddk.nih.gov/health-information/diabetes](http://niddk.nih.gov/health-information/diabetes)



# Feelings About Being Pregnant and Having Diabetes

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- It is important to understand how being pregnant can affect how you manage your diabetes. Your diet and medicines may need to be changed often.
- During your pregnancy, situations may arise that require you to be on bed rest or to be admitted to the hospital. Discuss with your family and friends how they may be of help during this time.
- Identify problems that may cause you to worry, such as financial concerns and child care issues. Our social worker will be able to help. Please call and let us know the problems or concerns that you have.
- Several times a day go to a quiet place and concentrate on relaxing. It is helpful to imagine yourself in a peaceful place while you close your eyes.
- If you are having problems managing your diabetes, do not see yourself as a failure. There are many people willing to help, and all you have to do is call.

**Keep your clinic appointments and follow medical advice to help you have a safe pregnancy and a healthy baby.**



## Driving Safety Tips

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### When traveling by car:

- Always wear medical identification to let people know in an emergency that you have diabetes.
- Always eat before driving. Include 1 serving each of a carbohydrate and a protein food.
- Always check your blood sugar before driving. **Do not drive if your blood sugar is below 80 mg/dL.**
- Always have these supplies with you:
  - Blood sugar meter
  - Testing supplies, such as glucose test strips, lancing device, lancets, and alcohol swabs
  - Snacks, glucose tablets, or oral glucose gel

Do not leave your supplies in a hot or cold car.

- Do not drive if you are not feeling well.
- Always wear a seat belt. Be sure the belt is below your belly and low on your hips.
- Walk a few minutes every couple of hours to improve the blood flow in your legs.
- If you begin to feel ill while you are driving, pull over. Determine what is causing you to feel ill. The cause could be high or low blood sugar or an issue unrelated to your diabetes. **If you need help, call 911. Do not drive yourself to the emergency department.**

# First Trimester Screen

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There are 2 parts to the first trimester screen: a blood test and an ultrasound. This screen occurs between 11 and 14 weeks of pregnancy.

Please come to your appointment with a full bladder.

## Checking for chromosome defects

The first trimester screen checks for:

- Down syndrome or trisomy 21
- Edward's syndrome or trisomy 18
- Patau syndrome or trisomy 13

Brain and spinal cord problems are not checked with this test. Common problems with the brain and spinal cord are checked with an alpha fetal protein (AFP) test done later in pregnancy. The first trimester screen is more accurate than a quad screen to check for these specific chromosome defects, called chromosome abnormalities.

## Having the test

An abdominal ultrasound is done, and then a finger stick to get a blood sample. Gel is placed on the abdomen and a probe is used to measure your baby. Rarely, the ultrasound is done with a probe placed in the vagina. **It is very important that you arrive with a full bladder for this test.**

The blood test, ultrasound, and your age are used to measure the risk of your baby having one of the problems listed above. The results will be sent to your healthcare provider in 5 to 6 days. Waiting for the results can cause anxiety and worry. Talk to your partner, provider, and family about your feelings.

## Test results

This test is a screening only. It helps your provider **measure the risk or chance** of your baby having one of these chromosome defects. It does not tell us for certain if a baby has a disorder or does not have one.

- **A normal test result means you have a lower risk or chance** of having one of these defects.
- **An abnormal test result means that you have a higher risk or chance** of having one of these defects. More tests may be ordered to check for possible problems.

## If more testing is needed

Other testing may be done, such as:

- Blood tests to check the baby's DNA in your blood.
- A detailed ultrasound of your baby.
- Testing of a sample of the fluid around the baby, called amniocentesis.
- Testing of some tissue from the placenta called a CVS (Chorionic Villus Sampling).

You may get genetic counseling to review the results.

# Fetal Movement Count

Your healthcare provider will tell you when to start checking for fetal movement, also called kick counts. It often begins with the 7th month of pregnancy. It involves counting the number of times your baby moves in 2 hours. Your baby naturally moves and then sleeps. When moving, your baby may feel like a kick, ripple, twist, or rolling in your abdomen. As baby gets bigger, you may also feel stretching and pulling.

Do kick counts 1 or 2 times a day as instructed by your provider. After you eat a meal is often a good time.



## How to do kick counts

1. Lay on your left or right side.
2. Use a clock, watch, or smartphone to record the time. Set the timer for 2 hours.
3. Each time your baby moves, make a mark in a chart or on a piece of paper.

## What the kick counts mean

- **If your baby moves 10 times or more in 2 hours**, your baby is probably healthy and doing well.
- **If your baby moves less than 10 times in 2 hours**, call your provider or come to the Labor and Delivery Unit.

Date	Total Movement	Date	Total Movement
example: 2/2	### ##		

# Non-Stress Test in Pregnancy

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A non-stress test (NST) checks the health of your baby by looking at your baby's heartbeat and movement during pregnancy. The test may be used when:

- Your baby is not moving as much as usual.
- You are near the end of pregnancy or past your due date.
- Your pregnancy is high risk.

## About the test

NST is often given after 28 weeks of pregnancy when your baby is able to respond to the test.

- For a high risk pregnancy, the test may be given before 28 weeks.
- If you are admitted to the hospital during your pregnancy, the test may be given 1 to 2 times a day to check the health of your baby.
- There are no known risks or side effects for you or your baby when having the test.
- The test may be repeated during pregnancy.

## Having the test

Please empty your bladder before the test starts and find a comfortable position lying down. The test will take 20 to 60 minutes.

- A fetal monitor will be placed around your abdomen to check your baby's heart rate. You will push a button every time you feel your baby move.
- The nurse is looking to see that your baby's heartbeat increases as they move. Just as your heartbeat increases with movement, your baby's heartbeat should also increase. The amount of change or increase in your baby's heartbeat will depend on its gestation (age in weeks).
- If your baby is not active during the test, you may be asked to move or the nurse will try to make your baby move using noise or touch. Your baby typically sleeps 20 minutes or more during every hour. The nurse may need to awaken them for the test.

## Test results

Test results will be shared with your healthcare provider, who will share the results with you.

# How to Check Your Blood Sugar During Pregnancy

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A blood glucose monitoring device, also called a blood sugar meter or monitor, allows you to measure the amount of sugar, called glucose, in your blood. Some devices use a drop of your blood on a test strip, which is inserted into the device. Others are worn on the skin.



By knowing your blood sugar levels, you and your healthcare team can make changes in your current medicine, diet, and exercise

plan to help keep your blood sugar in a healthy range. Checking your blood sugar can help you to treat high or low blood sugar before it becomes a problem or an emergency.

Ask your diabetes educator, pharmacist, nurse, or doctor to show you how to use your blood sugar meter if you have any problems.

## Blood sugar target range

Keeping your blood sugar under in a healthy range can help protect against diabetes complications that affect the eyes, kidneys, heart, blood vessels, and nerves. **While pregnant, your blood sugar levels need to be kept in a narrow range, between 60 and 120.**

- In the morning when you first wake up, your blood sugar should be 60 to 95.
- Before meals, it should be 60 to 105.
- 2 hours after you eat, it should be 60 to 120.

If your blood sugar is not in a healthy range, do not expect this to change overnight. Start slowly and work with your healthcare provider to get your blood sugar in the target range and learn to live well with diabetes.

## High and Low Ranges

Blood sugar above your target range, called **high blood sugar**, may lead to diabetes complications. High blood sugar **can result from eating too much, not exercising enough, stress, illness, or not enough medicine.**

Blood sugar below your target range, called **low blood sugar**, may lead to seizures, coma, and even death. Low blood sugar **can result from not eating enough carbohydrates, too much insulin or diabetes medicine, or too much or unplanned exercise.**

low blood sugar	target range	high blood sugar
less than 60 or less than 70 (if on insulin)	60 to 120	greater than 200

## When to check your blood sugar

Your provider will tell you how often to check your blood sugar during pregnancy.

- You may be testing up to 8 times a day. **Testing is often done in the morning, before and after meals, and at bedtime. It may be needed at 3:00 a.m. (or mid-slumber).**
- **You will need to check your blood sugar more often during times of stress, illness, infection, or medical procedures.** This may be as often as every 1, 2, or 4 hours.

## Using a blood sugar meter

### Supplies

A variety of blood sugar meters, glucose strips, lancets, and lancing devices are available. Check with your insurance company to see if they cover the cost for certain brands of meters. Meters are often on sale or rebates may be available. The cost of the test strips will be the larger expense, so it may be best to know what your insurance will cover.

Your diabetes educator, doctor, nurse, or pharmacist can help you choose the best meter and supplies for you.

You will need the following supplies:

- Blood sugar meter
- Glucose test strips that match your meter
- Lancing device
- Lancets
- Alcohol swab
- 1 to 2 cotton balls (optional)
- Blood sugar record (a record is included at the back of this book)
- Sharps disposal container



With these supplies, you will need to:

- Check the expiration date on your test strip bottle. Never use the strips if the date has expired. Date the bottle when you open it. **Throw away any strips that have not been used by 3 months after the bottle has been opened.**
- Make sure the cap fits snugly on the test strip bottle. If you use foil wrapped strips, check to make sure the foil wrap has not been opened or damaged. Sunlight and moisture can damage them.
- Code the meter with each new bottle or box of strips if needed.
- Use the control solutions for your meter when you open a new bottle or box of strips to make sure the strips are good, so your result will be correct.
- Safely throw away used lancets in a sharps or needle disposal container. Lancets are single use only. Do not reuse lancets.

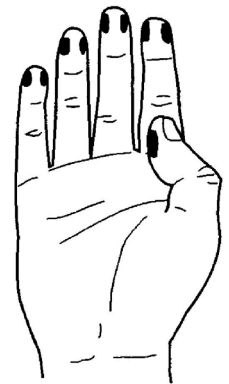
### Sites to Use to Check Your Blood Sugar

You can get a drop of blood from:

- The sides of your fingers and thumbs.
- Forearms or top of legs if an alternate site meter is used.

Most people use their fingers. Use a different finger each time you do a blood sugar check to avoid infection, soreness, and calluses. Avoid using the tip of your finger, as this is the most sensitive area of the finger, and you may feel more pain here. **Never use your feet or toes.**

**Wash your hands with warm water and soap before you do a check.**



### If Problems Occur

Most people have no problems. Checking blood sugar is easy and nearly painless. The chart below has some helpful hints to help you avoid problems.

Problem	What to do
<p>Sore Fingers</p>	<ul style="list-style-type: none"> <li>• Use only the sides of your fingers and thumbs.</li> <li>• Use a lancing device with an adjustable cap or depth.</li> <li>• Use a different finger or thumb for each blood sugar check.</li> <li>• Use a micro fine lancet (30 to 33 gauge).</li> <li>• Lightly place the lancing device against the side of your finger.</li> <li>• Consider alternate site checks.</li> </ul>
<p>Blood Drop Is Too Small* *This may cause an error code with your meter.</p>	<ul style="list-style-type: none"> <li>• Shake your hand and lower it below heart level before lancing your finger.</li> <li>• Do NOT use lancets without a lancing device.</li> <li>• If using a micro fine lancet, try another gauge lancet.</li> <li>• Wash your hands with warm, soapy water before lancing.</li> <li>• Squeeze your finger until it turns pink before using the lancing device.</li> <li>• Squeeze your finger after using the lancing device to get a bigger drop of blood.</li> </ul>

## Using a continuous glucose monitor

Your healthcare provider or diabetes educator may discuss other options to test your blood glucose (sugar), such as a continuous glucose monitor (CGM). This device continuously measures your blood glucose. It is worn on the skin, most often on the stomach or back of the upper arm.

**Follow the instructions that come with your device for where to place it on your body and how long it can be worn.** Most are worn for 1 to 2 weeks, or longer.

Based on the device used, some measure glucose every minute while others measure every 5 minutes. Some of these devices still require a finger stick at times for calibration.

CGM can be a useful option for people with diabetes. This is especially true for those who give themselves 4 or more injections of insulin per day, which often requires frequent glucose monitoring.

If you use a CGM, you will still need a blood sugar meter to confirm low blood sugars and to use in the event the CGM fails or detaches too soon.



### Supplies

- **Sensor:** A small catheter placed under the skin at home or in an office (implantable sensor).
- **Transmitter:** The transmitter is taped on top of the skin. It connects to the sensor. Some transmitters are used 1 time, while others can be used for 3 months or a year. Some are rechargeable.
- **Receiver:** A receiver displays the blood sugar number, and tells you how fast and in what direction that blood sugar number is moving. Some receivers send data on demand, while others send data automatically. Some receivers use a separate device, while others may be used with compatible smartphones.

## Record your blood sugar readings

Keep a record of your blood sugar readings, so you and your provider can see patterns of low and high blood sugar. Make copies of the blood sugar record included in this book or create your own record. Add comments to further personalize your record. It may be helpful to develop codes for diet, activity, illness, weight (weekly), and anything else that would serve as a cue to you as you review your blood sugar levels. Bring your blood sugar record with you to all appointments.

Some blood sugar meters have special features that allow you to download your results into a computer or smartphone for reports. Check the manufacturer's instructions that came with your meter to see if it has these functions.

## A1C test

An A1C test, also called the hemoglobin A1C, HbA1c, or glycohemoglobin test, measures your blood sugar over the last **2 to 3 months**.

Outside of pregnancy, an A1C of 7% or less shows that your diabetes is likely in a healthy range. **During pregnancy, our goal is to further lower your A1C to 6 to 6.5% or less.** In general, keeping your A1C between 6% to 7% is important to prevent complications of diabetes.

The A1C test is a partner to daily blood sugar checks. A1C cannot identify patterns of high or low blood sugar. Using a blood sugar meter daily to check your blood sugar lets you see patterns of high and low blood sugar.

You and your healthcare team will look at both your A1C and daily blood sugar check results to determine what changes are needed to your medicines, diet, or exercise to keep your blood sugar in a healthy range.

**A1C levels should be checked every 3 to 6 months.**

# High Blood Sugar in Pregnancy

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High blood sugar means there is too much glucose in the blood. You may also hear the term **hyperglycemia**.

People who have diabetes and get pregnant need to keep their blood sugar levels in a narrow range, between 60 and 120.

- In the morning when you first wake up, your blood sugar should be 60 to 95.
- Before meals, it should be 60 to 105.
- 2 hours after you eat, it should be 60 to 120.

**Any time your blood sugar is above 120, it is too high during pregnancy.** If blood sugar is consistently high during pregnancy, it can lead to problems for both you and your baby.

## Problems for your baby

- If you had high blood sugar at the time you became pregnant, your baby may have problems with their heart, spine, and other organs not forming well in the early weeks of pregnancy.
- If your baby receives too much glucose from you during pregnancy, they may grow too large causing:
  - The baby's lungs to develop more slowly
  - Risk of early delivery
  - Risk for injury during birth
  - Low blood sugar in the baby at birth
  - Risk for stillborn

## Problems for you

- If you have complications to your eyes, kidneys, or heart because your diabetes is not managed well, these could worsen during pregnancy.
- Pre-eclampsia is more common. There is more stress on the kidneys, and this can cause high blood pressure, swelling, and early delivery.
- If your baby is large due to high blood sugar, a C-section may be needed at delivery. This puts you at more risk of infection and results in a more difficult recovery.

## High blood sugar and pregnancy

During pregnancy, your body will need more insulin, especially during the last 3 months. There are several reasons for high blood sugar. The most common reasons during pregnancy include:

- Hormone changes during pregnancy
- Eating more food than your nutrition plan allows
- Eating foods high in sugar or high in simple carbohydrates (refined or processed carbs)
- Not taking enough medicine (insulin)
- Missed, skipped or delayed medicine (insulin)
- Dehydration
- Stress
- Infection/illness
- Not getting enough exercise

There also may be times when you cannot find a reason for high blood sugar.

## Signs of high blood sugar

You may not feel any different when your blood sugar is too high. That is why it is so important that you check your blood sugar level as your healthcare provider advises. While pregnant, you will check your blood sugar 4 to 8 times each day – before meals and 2 hours after eating. **Testing is often done in the morning, before and after meals, and at bedtime.**

**If your blood sugar levels go over 120 more than 3 days in a row and you are following your diet, follow up with your provider.** You may need to have insulin started or if you are on insulin, your dose may need to be changed.

Signs of high blood sugar may include:

- Extreme thirst
- Feeling moody or grumpy
- Frequent urination
- Vaginal itching or infections
- Increased appetite
- Delayed healing
- Blurred vision
- Numbness in fingers or toes
- Feeling tired or sleepy

## How to treat high blood sugar

The best way to treat high blood sugar is by balancing food, exercise, and insulin. Review the last couple of days of nutrition plans, activities, diabetes medicines, and your blood sugar record. Look for any changes that might explain the high sugar.

## How to prevent high blood sugar

You can prevent high blood sugar by following your diabetes plan.

- Follow your nutrition plan.
- Take your insulin as directed.
- Test your blood sugar level and keep a record of the results.
- Follow your activity and exercise routine.
- Contact your provider if you see patterns of high blood sugar.
- Follow your sick day plan if you are ill.

# Low Blood Sugar in Pregnancy

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Low blood sugar is also called hypoglycemia, insulin shock, and insulin reaction. It means that there is not enough blood sugar, called glucose, in the body. Glucose is the major fuel needed to feed the body's cells. During pregnancy, a normal blood sugar level is between 60 and 120. Low blood sugar means that glucose is below 60 or below 70 if you are on insulin.

## Low blood sugar risk

Low blood sugar is more likely to occur when you:

- Take too much insulin or oral diabetes medicine.
- Skip, miss, or delay meals.
- Do too much exercise or unplanned exercise.

There may also be times when you do not know why your blood sugar is low.

## Signs of low blood sugar

**Low blood sugar affects each person differently.** Some people have warning signs while other people have none. It is more common in people who have had diabetes for many years to not have warning signs. **Learn how you feel when your blood sugar is too low.**

Sometimes low blood sugar develops slowly while other times it happens within minutes. **Signs may be noticed by others before you notice them. Talk to your family and friends about your signs of low blood sugar, which may include:**

- Feeling shaky
- Feeling dizzy or light-headed
- A fast heartbeat
- Feeling moody or grumpy
- Feeling weak or tired
- Numbness around mouth or lips
- Being unable to speak
- Feeling hungry
- Feeling nervous
- A headache
- Blurred vision
- Not thinking clearly
- Sweating

## Treatment for low blood sugar

### Short term actions to take:

- **If your blood sugar is 50 to 60, eat or drink some food with sugar (15 grams of carbs),** such as:
  - Chew 3 glucose tablets or 1 package of oral glucose gel
  - 1 tablespoon of sugar
  - ½ cup (4 ounces) of juice or regular soda (not diet)
  - 3 squares of graham crackers
  - 2 teaspoons of honey or syrup
  - 5 to 6 mini jelly beans
  - 2 to 3 gumdrop candies or regular size jelly beans
- **Wait 15 minutes and check your blood sugar.**
  - If your blood sugar is still less than 60, or if you are not feeling better, eat or drink another serving of food or drink from the list.
- **Wait another 15 minutes and recheck your blood sugar.**
  - If your blood sugar is 40 to 50, eat or drink 30 grams or 2 servings of carbohydrate from the list above. Wait 15 minutes and recheck your blood sugar. If your blood sugar is still less than 60, or if you are not feeling better, eat or drink another serving of food or drink from the list. Continue to recheck your blood sugar every 15 minutes until it is in the normal range.
  - If your blood sugar is below 40, act quickly. Use instant glucose gel from the pharmacy. Wait 15 minutes and recheck your blood sugar. If your blood sugar is still less than 60, or if you are not feeling better, eat or drink a serving of food or drink from the list above. Continue to recheck your blood sugar every 15 minutes until it is in the normal range.
  - If you check your blood sugar and it is 60 or more and you are still not feeling better, call 911. It may not be a problem with your blood sugar and you may need more help.
- **Be careful not to over treat.** If you panic and start to eat or drink until you feel better, your blood sugar may go too high.
- **When your blood sugar has returned to normal,** eat a meal or snack with complex carbohydrates and protein foods to prevent future low blood sugar levels.
- **Call your healthcare provider if you have low blood sugar more than 2 times in a week.**

### Long term actions to take:

- **Follow your treatment plan.** Review your blood sugar record, diabetes medicines, nutrition plans, and activity of the last few days. Look for any changes that may explain low blood sugar.
  - Check your blood sugar level as directed (4 to 8 times a day) and record the results in your blood sugar record.
  - Take your insulin and oral diabetes medicines as directed. Do not take extra medicine unless directed to do so by your provider.
  - Follow your nutrition plan. Eat meals and snacks at the same time each day. Do not miss, skip, or delay meals.
  - Exercise as directed.

- **Keep food like glucose tablets, glucose gels, or juice with you at all times** at work, in your car, and when you exercise.
- **Call your provider if you have low blood sugar more than 2 times in a week or wide swings from high to low blood sugar.**

## Let others know you have diabetes

Your spouse, family members, roommates, friends, and coworkers should know that you have diabetes. It is up to you to decide who you tell and how much you tell them about diabetes. They should know that you can have low blood sugar and what they can do when it happens.

**Always wear some form of medical identification**, such as a medical ID bracelet or carry a wallet card.

## Glucagon

**If you take insulin**, a family member, roommate, or coworker should learn how to give glucagon. Glucagon is a hormone that raises your blood sugar. **It is used as a medicine for severe low blood sugar when you might be found unconscious.** Liquids and food should never be given to someone who is not alert or awake.

Your provider will teach your spouse, family member, or friend how to give glucagon. You will need a prescription. Glucagon is available as an injection (shot) or as a nasal powder.

- Get a prescription from your provider for glucagon.
- Keep glucagon with you. If you use a kit, ask about getting more kits to keep at home, work, or school.
- Pick family, friends, and coworkers who could give you this emergency medicine. Show these helpers where you keep the medicine and have them learn how to use it.

### Glucagon Injection

Glucagon comes as either:

- A prefilled syringe, or
- A kit that has liquid in a syringe and powder in a vial. The liquid and powder is mixed together and injected with a small needle. It has to be given immediately after being mixed.

People you have asked to help you need to learn about how to give you an injection ahead of time. They should practice by giving you an insulin shot, so they are able to take action in an emergency.

#### **Glucagon prefilled syringe instructions: -**

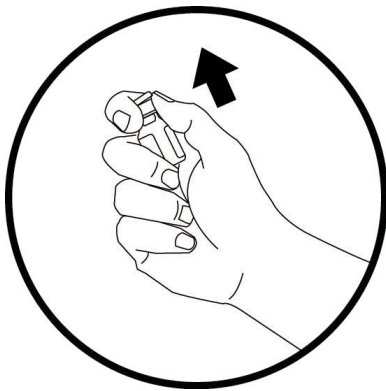
**These are general instructions for giving a glucagon injection if you have a prefilled syringe. -** Ask your pharmacist or nurse if you have any questions.

1. Pull the needle cap straight off the syringe.
2. Pinch the skin of the chosen site (upper arm, stomach, or thigh). Hold the pinch for the entire injection.
3. Insert the needle into the skin at a 90 degree angle.
4. Push the plunger down as far as it will go to inject all of the medicine.

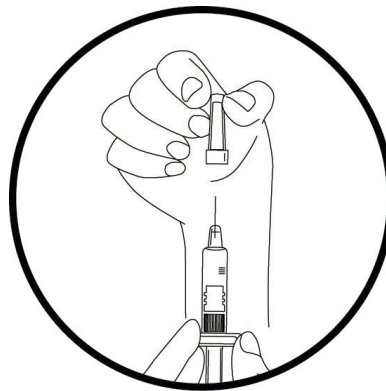
5. Remove the syringe from the skin, lifting it straight up from the injection site.
6. Turn the person on their side. Throwing up (vomiting) may happen after glucagon is given.
7. Call 911.
8. Throw away the syringe in a needle disposal box. Do not throw it away in the trash.

**Glucagon kit instructions:**

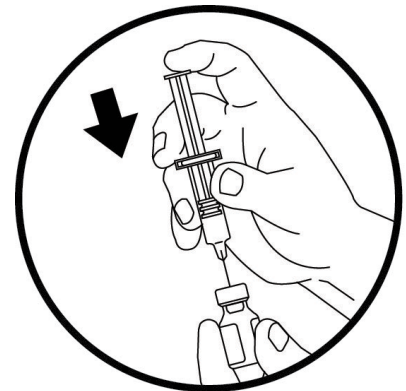
**These are general instructions for giving a glucagon injection if you have a kit.** Check your own kit's instructions and ask your pharmacist or nurse if you have any questions.



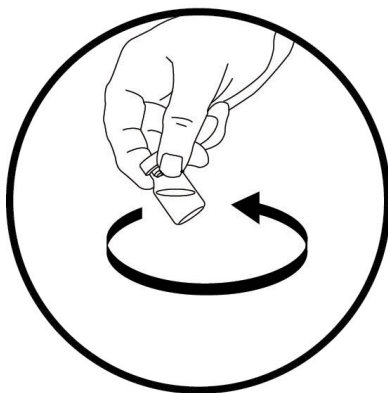
1. Remove the cap from the vial with the glucagon powder.



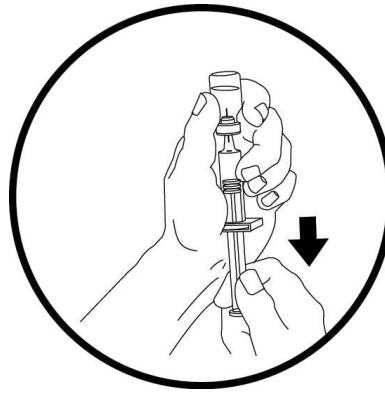
2. Remove the cap from the needle on the syringe.



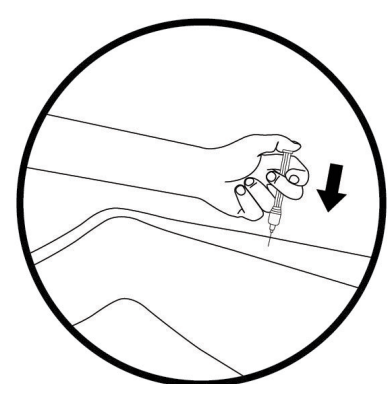
3. Inject all liquid in the syringe into the vial with the powder.



4. Remove the syringe or keep it in the vial, according to your kit's instructions. Swirl the vial gently until the solution is clear. If you keep the needle in the vial while mixing, be careful not to bend it.



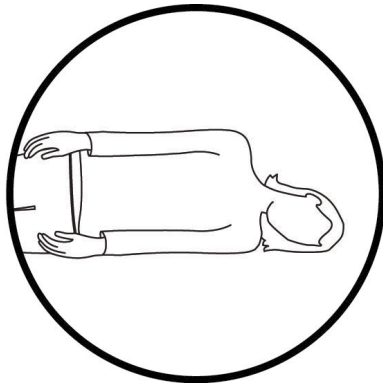
5. Slowly withdraw all the liquid into the syringe. (This is for an adult. Children may get a different amount of medicine).



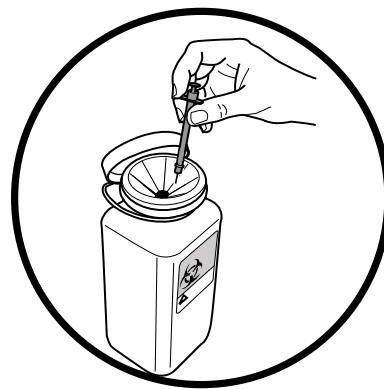
6. Stick the needle straight into the upper arm, upper leg, or buttocks. Push the plunger down to give the medicine, and then remove the needle.

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7. Turn the person on their side. Throwing up (vomiting) may happen after glucagon is given. Call 911.



8. Throw away the needle in a needle disposal box. Do not throw it away in the trash.

## **Glucagon Nasal Powder**

Glucagon powder is sold under the brand name **BAQSIMI**. It comes in a wrapped container to prevent exposure to moisture. Only open the tube when you need to use the medicine. This medicine is only to be given in the nose. **Make sure your caregiver, family, and friends know where you keep this medicine and have them review these instructions. They need to know how to use the medicine before an emergency would happen to you.**

- Store the sealed tube until ready for use. Avoid temperatures over 86 degrees F or 30 degrees C.
- Replace before the expiration date on the tube or package.
- Keep this medicine out of reach of children and pets.

### **How to use the glucagon nasal powder:**

1. Pull the red strip to remove the shrink wrap from the tube.
2. Open the lid of the tube and remove the device, being careful not to push the plunger.
3. Hold the device between your fingers and your thumb. The green line should be by your thumb with your fingers on either side of the tip of the device.
4. Gently insert the tip in 1 side of the person's nose until your fingers touch the nose.
5. Push the plunger firmly with your thumb until the green line disappears into the device.
6. Turn the person on their side. Throwing up (vomiting) may happen after glucagon is given. Call 911.
7. Throw away the used device and tube in the trash or in a needle disposal box.

For more information and images for how to use glucagon nasal powder (BAQSIMI), go to <http://pi.lilly.com/us/baqsimi-us-ifu.pdf>.

# Testing Urine for Ketones During Pregnancy

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With type 1 diabetes, it is important to check your urine for ketones. In addition to learning what ketones are, you will also need to know when, why, and how to check for them. Your nurse will teach you how to check for ketones.

## About ketones

Ketones are a warning sign that the body is using fat for energy. Normally, ketones are not found in the bloodstream or urine. When ketones are found in people with diabetes, it is a sign that there is not enough insulin and blood sugar levels are too high.

Your body is made up of many different kinds of cells. These cells need energy to grow and live. The energy comes from the foods you eat. Most of the food you eat is broken down into a form of energy called glucose. For glucose to get into your body's cells, insulin is needed. When there is not enough insulin, your body uses other energy sources, such as fat.

Fat is the most available source of energy for your body to use. Ketones are the substances that are made when fat is broken down by the body. Since the body has no use for ketones, it filters them from the bloodstream through the kidneys and into your urine.

When there are too many ketones in the blood, dehydration or loss of body fluids occurs. The kidneys cannot handle the large amount of ketones, and they build-up in the blood. This can lead to a diabetes emergency, called **diabetic ketoacidosis (DKA)**, that needs treatment right away.

## When to check for ketones

Follow the instructions from your healthcare provider as to how often to check your urine for ketones during pregnancy.

- **If you have type 1 diabetes**, check your urine for ketones:
  - Every morning.
  - Anytime your blood sugar is greater than 200 mg/dL.
  - If you are sick with nausea, vomiting, diarrhea, or other illnesses that cause fluid loss.
- **If you have type 2 Diabetes**, you probably will not need to check for ketones. Your provider will go over this with you if it is needed.

Remember, ketones in your urine are a warning sign. Ketones in small amounts are usually not harmful. However, they may be the first sign of diabetic ketoacidosis (DKA).

**During pregnancy, ketones may also be a warning sign that you are not eating enough.** This may mean that you need to eat more for your bedtime snack. Review your nutrition plan with your dietitian.

## Ketone testing products

Ketone tests can be purchased at your local pharmacy. There are several products available. We recommend that you select foil-wrapped strips, such as Ketostix, because foil-wrapped strips store longer. If you use another product, carefully read the product's directions for use. Replace if the expiration date has passed, which is often 6 months after opening the container.

## How to check for ketones

1. Wash your hands with soap and water.
2. Gather your supplies: timer or clock with second hand, test strip, and urine sample. Check the expiration date of the test strip. Do not use if expired.
3. Remove the test strip from the foil package. Be careful not to touch the test pad area.
4. Collect a sample of your urine in a clean container.
5. Dip the strip's test pad into the urine and remove it quickly. You may also pass the test pad through your urine stream.
6. Tap the test strip to remove extra urine.
7. Wait 15 seconds or as directed by package instructions for the test pad to change color.
8. Compare the test pad to the color chart on the test strip bottle. This gives you a range of the amount of ketones in your urine. Ignore any color changes that happen after 15 seconds.
9. Discard the used test strip.
10. Record your results.

## Test results

Ketones in small or trace amounts may mean that ketone buildup is starting. Retest your urine for ketones in a few hours.

**Call your provider right away if your result is moderate to large.** Moderate to large results are a dangerous sign that your blood sugar is not staying in a healthy range. You may need more insulin and liquids, especially water. Never exercise when your ketones are moderate to large and your blood sugar is high. Recheck your blood sugar level until it is 200 mg/dL or less.



# Blood Sugar Record for Pregnant Patients with Diabetes Taking Insulin

Patient's Name: \_\_\_\_\_ Patient's Date of Birth \_\_\_\_\_

Diabetes Medicines and Doses: \_\_\_\_\_

Please share this record with staff weekly at clinic visits or via email or fax.

Date	Blood Sugar at 3 a.m.	Fasting Blood Sugar When Waking Up or Out of Bed	Morning Insulin	Blood Sugar 2 hours After Breakfast	Blood Sugar Before Lunch	Lunch Insulin	Blood Sugar 2 hours After Lunch	Blood Sugar Before Dinner	Dinner Insulin	Blood Sugar 2 hours After Dinner	Blood Sugar at Bedtime	Bedtime Insulin

For a new copy of this record, please visit [go.osu.edu/pted73](http://go.osu.edu/pted73).

# Insulin During Pregnancy

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Insulin is a hormone made by the pancreas. The pancreas is a small organ that lies behind and below the stomach. Insulin works like a key to open the body's cells. This allows the food you eat to go into the body's cells for energy. A person cannot live without insulin.

Your healthcare provider may prescribe insulin to treat your diabetes because your body:

- Does not make insulin (type 1 diabetes).
- Does not make enough insulin (type 2 diabetes).
- Is not able to use the insulin it makes (type 2 diabetes).

Insulin is the best medicine choice to manage your blood sugar during pregnancy, and it is safe for your baby.

## Taking insulin for diabetes

- In the United States, insulin is human insulin. It is made from harmless bacteria through DNA engineering.
- Insulin is most often taken as a shot using an injector pen, syringe, or insulin pump.
- **If you have type 1 diabetes**, your body's need for insulin will increase during pregnancy, especially during the first 3 months of pregnancy.
- **If you have type 2 diabetes** and take diabetes pills to manage your blood sugar, you may not be able to take them while pregnant. Your provider may switch your medicine to insulin.

## Supplies

You will need these supplies to take your insulin, depending on what type you take. There are 3 different options for injecting your insulin. Keep at least a week's supply on hand at all times.

### Option 1 — Injector Pen

- Insulin pen or cartridges
- Pen needles — standard or safety type
- Alcohol swabs

#### Safety with injector pens:

- Insulin pens may say “for single patient use only.” That means **you are not to share your pen** with anyone else, but know that your **pen and cartridges have multiple doses** for your use.
- NEVER reuse pen needles and NEVER leave pen needles attached to the pen. This can result in an increased risk of infection and irritation at the site of injection.

- Each time you get pen needles, **know the type of needle you have (standard or safety)** and how to use it safely.
  - **Standard pen needles have an outer cover and a needle cover that must be removed before use.** This type of needle is often used at home.
  - **Safety pen needles have an outer cover that must be removed before use.** A needle shield stays in place over the needle. The needle shield pulls down when the needle is placed into the skin. The needle shield comes back over the needle when the injection is done. This type of needle is often used in the hospital.

## Option 2 — Syringe

- Insulin bottle or vial
- Syringes with needles (never reuse a syringe!)
- Alcohol swabs

## Option 3 — Insulin Pump

Supplies needed to keep on hand for an insulin pump will be discussed with you.

## Things to know about your insulin

1. **Your provider will choose the kind and amount of insulin you need.** Check the labels on your insulin bottles or pens to be sure you have the right kind.
2. **Learn the following information about your insulin:**
  - Name: such as **NPH, Regular, Humalog, Lantus, or Novolog**
  - Strength: U-100 (most common), U-200, U-300, and U-500
  - Brand: such as Novo-Nordisk, Eli Lilly, or Sanofi
  - Expiration date: do not use expired insulin

Do not change the name, strength, or brand of your insulin. Only your provider should make these changes.
3. **-All unopened bottles or pens of insulin should be stored in the refrigerator.** Avoid exposing your insulin to extreme temperatures (hot or cold) and direct sunlight. Never use insulin that has been frozen.
4. **After the bottle of insulin or insulin pen is used for the first time, it can be safely stored at room temperature, but only for a specific time.** Most bottles and pens can be kept for about 28 to 31 days, but some can be safely kept longer. **Always check with your pharmacist** to know when the opened insulin should be thrown away.
 

The following **medicines in pens are only good for 14 days** at room temperature:

  - **Humulin N pen**
  - **Novolin N pen**
5. **Travel:**
  - When traveling, keep your insulin and supplies with you in case your luggage gets lost.
  - **NEVER** leave your supplies in a car to avoid temperature extremes.

**6. There are 4 types of injectable insulin:**

- Rapid acting (meal time): **Admelog, Fiasp, Humalog, Lyumjev, and Novolog**
- Short acting: **Regular (Humulin R, Novolin R)**
- Intermediate acting: **NPH (Humulin N, Novolin N)**
- Long acting (basal): **Basaglar, Lantus, Semglee, and Toujeo**
  - Long acting insulin cannot be mixed in a syringe with other insulins

**Insulin action**

This table lists the different types of injectable insulins and how quickly each insulin will start to work, when it works hardest, and how long it will last.

Type	Concentration	Starts	Works Hardest/ Peaks	Duration
<b>Rapid Acting Insulin</b>				
Admelog (Lispro)	U-100	45 minutes	2.1 hours	Less than 6.9 hours
Fiasp (Aspart)	U-100	21 to 24 minutes	2.5 hours	5 to 7 hours
Humalog (Lispro)	U-100, U-200	45 minutes	2.4 to 2.8 hours	Less than 6.7 hours
Lyumjev (Lispro-aabc)	U-100	32 minutes	2.0 to 2.9 hours	Less than 6.7 hours
Novolog (Aspart)	U-100	12 to 18 minutes	1 to 3 hours	3 to 7.2 hours
<b>Short Acting Insulin</b>				
Humulin/Novolin R (regular)	U-100	15 to 30 minutes	2.5 to 5 hours	4 to 12 hours
	U-500	15 to 30 minutes	4 to 8 hours	13 to 24 hours
<b>Intermediate Acting Insulin</b>				
Humulin/Novolin N (NPH)	U-100	1 to 2 hours	4 to 12 hours	14 to 24 hours
<b>Long Acting Insulin</b>				
Basaglar (Glargine)	U-100	3 to 4 hours	Nearly peakless	10.8 to greater than 24 hours
Lantus (Glargine)	U-100	3 to 4 hours	Nearly peakless	10.8 to greater than 24 hours
Semglee (Glargine-yfgn)	U-100	3 to 4 hours	Nearly peakless	10.8 to greater than 24 hours
Toujeo (Glargine)	U-300	6 hours	Peakless	Greater than 24 hours

## Take your insulin at the same time(s) each day

- Do not vary the time of your long acting injection by more than 1 hour.
- If you are taking short acting insulin, such as **Regular**, take your insulin 30 to 45 minutes before eating.
- If you take rapid acting insulin, such as **Humalog** or **Novolog**, take your insulin within 5 to 10 minutes of eating.
  - **Fiasp** and **Lyumjev** may be taken up to 20 minutes after eating.

## Talk with your provider if you have any of these problems

- Bruising
- Dimpled areas
- Itching
- Redness
- Hard, lumpy areas

# How to Take Your Insulin with an Insulin Pen

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## Getting ready

### 1. Select a site for your shot on an area of the body.

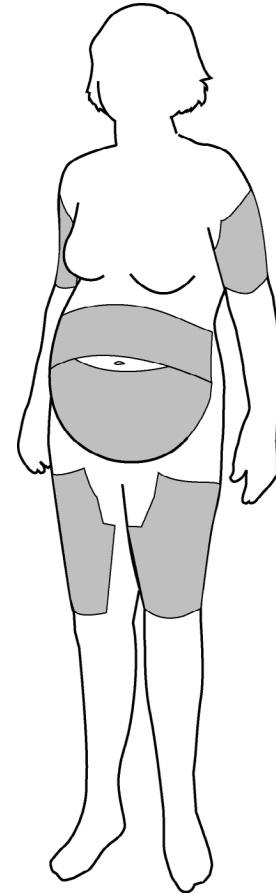
Give your insulin in the same area for 7 to 10 days before changing to a new place. Use a site about an inch away from the last site or from one side of the body area to the other for the next injection. Avoid your belly button by 2 inches.

Insulin is absorbed differently throughout your body. Fastest absorption is in your abdomen followed by arms, thighs, and upper buttocks.

### 2. Gather your supplies:

- Insulin pen
- Pen needle
- Alcohol pad
- Sharps disposal container

### 3. -Wash your hands well with soap and water.



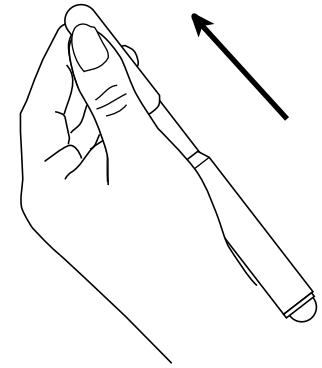
## Giving insulin with an insulin pen

Follow these steps to give yourself insulin with an insulin pen.

1. Clean the area with an alcohol pad using a circular motion. Let the alcohol air dry.

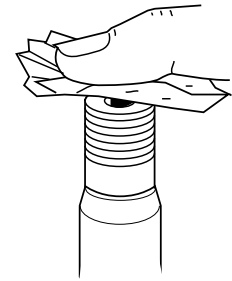


2. Remove the cover from the pen. You will be able to see the insulin in the pen.



3. If you are using a cloudy insulin (**NPH, 75/25, or 70/30**), gently roll the pen between your hands or turn it up and down to mix the insulin.

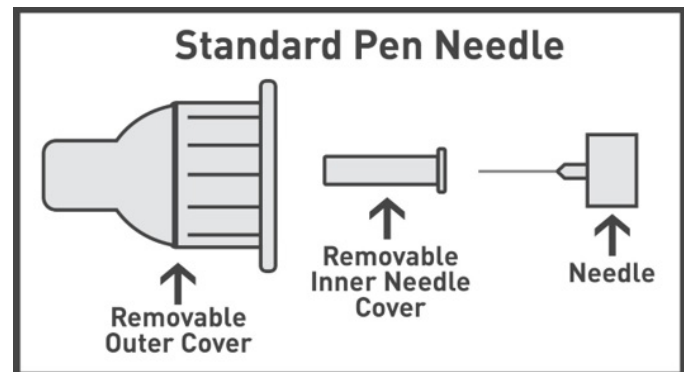
4. Clean the end of the pen with an alcohol pad where the needle twists on.



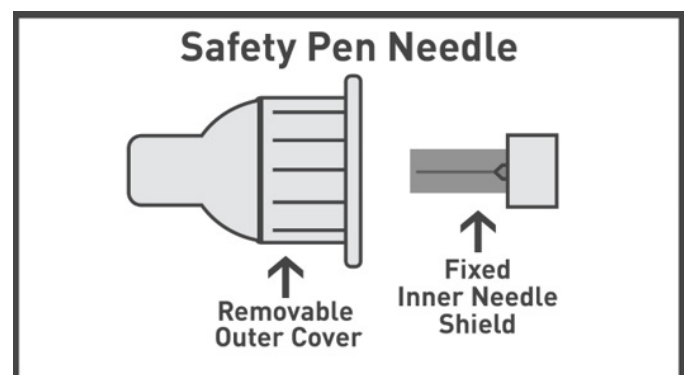
5. Attach a new needle by peeling back the paper cover and screwing it onto the pen. It should be snug but not too tight.

6. Prepare the pen needle:

- **If you are using a standard pen needle, remove both the outer cover and inner needle cover**, so you can see the needle.

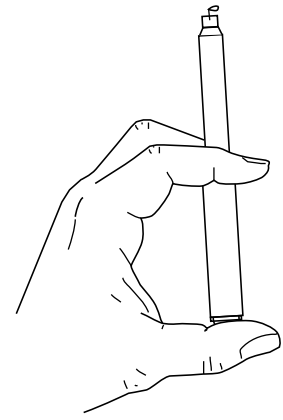


- **If you are using a safety pen needle, remove the outer cover only**. The inner needle shield stays in place. Most often, these are the type of needles used in hospitals.

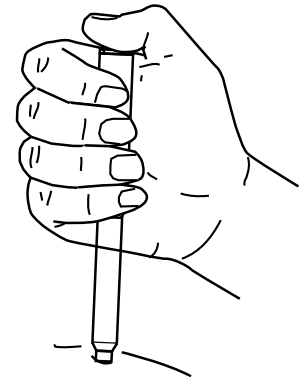


Ask your pharmacist, nurse, or diabetes educator if you have questions about this or check the manufacturer's instructions for more information.

7. Clear the air out of the pen or prime the pen.
- Turn the knob dose dial to 2 units.
  - Hold the pen with the needle up in the air and push the dial knob in. Watch the tip of the needle for a drop of insulin.
  - You may need to repeat the dialing to 2 units and push a few times until you see the drop on the needle, so you know you have no air in the pen.
  - Dial in your insulin dose by turning the knob clockwise until you see the right number for your dose.



8. Put the needle straight into the skin at a 90-degree angle in a quick motion. Push the needle all the way into the skin.



9. Using your thumb, push the knob down slowly to inject the insulin. Hold the needle in place for a count of 10 before removing. Check that the pen is back to zero, and then pull out the needle.

10. Check the area for any redness, bleeding, or bruising.

11. Remove the needle from the pen, using the big clear cap to unscrew it.

12. Throw the needle into your needle disposal container.

- **To protect yourself and others, never throw needles into the trash.**
- **Buy a sharps or needle disposal container** at the drug store or use an empty, heavy plastic bottle with a lid.
- Keep the container out of the reach of children and pets.
- Ask your pharmacist or nurse how you should throw away your container of used needles. You can also check with your trash collector.

13. Put the cover back on your insulin pen.

# My Diabetes Nutrition Plan During Pregnancy

When you have diabetes and are pregnant, you need to eat small meals and snacks throughout the day to help manage your blood sugar. This also helps you get enough nutrients for a healthy pregnancy.

Calories come from carbohydrates, protein, or fat.

Carbohydrates (carbs) have the largest and quickest effect on blood sugar. High carbohydrate food groups include:

- Whole grains and starchy vegetables
- Fruit
- Milk and yogurt

By following a carbohydrate controlled diet, you can manage your blood sugar better. This is important for you and your baby.

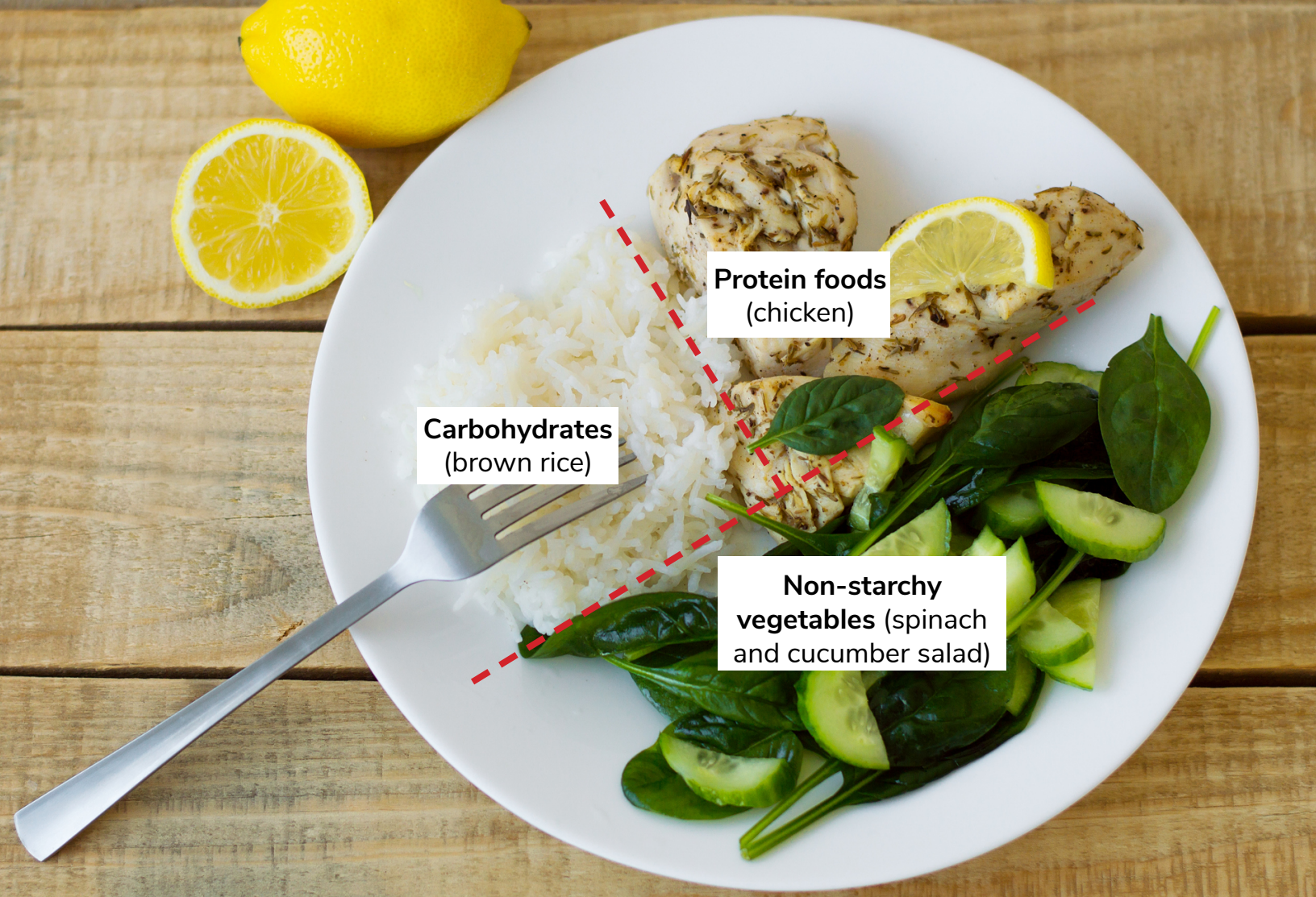


## The amount of carbohydrates you need in your diet

- The amount of carbohydrates you need is based on your height, weight, activity level, blood sugar levels, and pregnancy nutrient needs.
- Ask your provider or dietitian about your specific carbohydrate needs. The best place to start is to make changes to the type and amount of carbohydrates you eat.
  - Most pregnant people do well with 30 to 45 grams of carbohydrates (2 to 3 servings of carbohydrates) per meal. 15 grams of carbohydrates = 1 carb choice or serving.
  - Snacks are also recommended to satisfy hunger and carbohydrate needs. Each snack should contain 15 to 30 grams (1 to 2 servings) of carbohydrates.
  - **With each meal and snack, combine a carbohydrate** (whole grains and starchy vegetables, fruit, or milk) **with a protein food** or a healthy fat for a better blood sugar response.
- Eat your meals and snacks at about the same times each day. This will help to keep your blood sugar in a healthy range for your health and the growth of your baby.

## My nutrition plan

- Your calorie needs will vary throughout your pregnancy. **Talk to your provider or dietitian if you would like to know how many calories you should eat each day.** Many of your calories (35 to 40%) will come from carbohydrates. It can be helpful to know these numbers, but not every person needs to track calories or grams of carbohydrate during pregnancy.
- When managing your blood sugar, both the type and amount of carbohydrates you eat matters:
  - **Choose complex carbohydrates**, which are higher in fiber, vitamins, and minerals, and often have a lower blood sugar response. These foods include 100% whole grains (brown or wild rice, old-fashioned oats, barley, farro, quinoa), beans, lentils, whole fruits, whole wheat bread and pasta, as well as starchy vegetables like corn, green peas, and sweet potatoes.
  - **Limit refined carbohydrates.** Eating too much processed breakfast cereal, fruit juice, soda, and refined grain products (white flour, degermed cornmeal, white bread, or white rice) can lead to higher blood sugar levels.
- Remember to "**eat your carbs, don't drink them**" with the exception of drinking fat free or low fat milk every day. Try to drink mostly water with meals and snacks.
- Spread out your carbs throughout the day rather than eating a large amount at 1 time.
  - **Eat a small meal or snack every 3 to 4 hours** to improve your blood sugar levels. Going long periods between meals can cause your body to release stored energy (glucose), leading to higher blood sugar levels.
  - **With each meal and snack, combine a carbohydrate** (whole grains and starchy vegetables, fruit, or milk) **with a protein food** or a healthy fat. Eating a carbohydrate with a protein food slows the digestion of carbohydrates, improving your blood sugar response.
- To keep your fasting blood sugars well controlled, if you eat an early dinner (more than 3 hours before bedtime), **eat a bedtime snack 30 to 60 minutes before bed (or 8 to 10 hours before breakfast/fasting blood sugar test).** The snack should have 1 serving each of a carbohydrate and a protein food to keep blood sugar levels stable overnight.



# Healthy Meals for Healthy Blood Sugar

## The Plate Method

The Plate Method is a simple way to keep carbohydrates to a moderate amount to improve your blood sugar levels.

Calories come from carbohydrates, protein, or fat. Carbohydrates have the largest and quickest effect on blood sugar. Carbohydrate foods include:

- Whole grains and starchy vegetables
- Fruit
- Milk and yogurt

Sugar is a concentrated form of carbohydrates. **Limit foods high in sugar** in your diet.

## Follow these steps to eat meals with the Plate Method

1. Fill half ( $\frac{1}{2}$ ) of your plate with **non-starchy vegetables**. This is about 1 to 2 servings of non-starchy vegetables.

Non-starchy vegetables:

- Give your body some carbohydrates, but much less than the high carbohydrate food groups.
- Help fill you up without having a large effect on your blood sugar.
- Provide the fiber, vitamins, and minerals your body needs to function well.
- Examples include:
  - Artichoke
  - Asparagus
  - Bean sprouts
  - Beets
  - Bok choy
  - Broccoli
  - Brussels sprouts
  - Cabbage
  - Carrots
  - Cauliflower
  - Celery
  - Cucumber
  - Green or yellow beans
  - Salad greens
  - Mushrooms
  - Onions
  - Peppers
  - Radish
  - Snow peas
  - Sugar snap peas
  - Tomatoes
  - Turnips
  - Yellow squash
  - Zucchini

Choose fresh or frozen vegetables that have no or little added salt, sugar, or fat in a variety of colors to get a variety of vitamins and minerals.

2. Fill a quarter ( $\frac{1}{4}$ ) of your plate with **carbohydrates**, like whole grains, starchy vegetables (corn, peas, and sweet potatoes), or fruit. This is about 2 to 3 servings of carbohydrates.

**1 serving (15 grams) =**

- Bread – 1 slice
- Corn tortilla – 2 small
- Flour tortilla – 1 small
- Crackers – 6 small
- Apple, pear, orange – 1 small
- Banana –  $\frac{1}{2}$  large or 1 small (6-inch)
- Grapes or cherries – 17 small or  $\frac{1}{2}$  cup
- Graham crackers – 3 squares

**$\frac{1}{3}$  cup:**

- Cooked pasta
- Baked beans
- Cooked rice or quinoa

**½ cup:**

- Cooked cereal, like oatmeal
- Cooked beans or lentils – count as 1 serving of carbs and 1 serving of protein
- Starchy vegetables – potatoes, corn, or peas
- Canned fruit in water or juice
- Orange or apple juice
- Casserole

**¾ cup:**

- Unsweetened dry cereal
- Fresh fruit salad

**1 cup:**

- Berries or melon
- Soup

3. Fill a quarter ( $\frac{1}{4}$ ) of your plate with **protein foods**. This is about 3 to 4 servings of protein foods.

**1 serving =**

- 1 egg, 2 egg whites, or  $\frac{1}{4}$  cup egg substitute
- 1 ounce turkey breast or chicken breast, skin removed
- 1 ounce lean deli meat (with 3 grams or less of fat per ounce) – heat to steaming hot
- 1 ounce fish fillet, shellfish, or canned tuna in water
- 1 ounce lean beef, lamb, or pork (limit to 1 to 2 times per week)
- 1 ounce cheese
- $\frac{1}{4}$  cup nonfat or low fat cottage cheese
- $\frac{1}{2}$  cup cooked beans or lentils – count as 1 serving of carbs and 1 serving of protein
- 4 ounces tofu
- 2 tablespoons natural peanut butter
- $\frac{1}{4}$  nuts or seeds

4. Keep added fats to small amounts.

Fats improve the taste of many foods, help us feel full longer, and provide essential nutrients. All fats are high in calories, so keep portions small:

- 1 to 2 teaspoons of oil, margarine, butter, or mayonnaise
- 1 tablespoon of salad dressing
- $\frac{1}{4}$  of an avocado

## 5. Drink mostly water with meals and snacks.

Aim for at least 8 (8 ounce) glasses of water each day. Water:

- Is calorie free and has no carbohydrates.
- Is essential for your body's cells, tissues, and organs.

Plain coffee and tea are also calorie free and often will not raise your blood sugar. But during pregnancy, it is recommended to limit caffeine from regular coffee, caffeinated tea, soda, and energy drinks to no more than 200 milligrams (mg) or 1 (12-ounce) cup per day.

## General tips

- Cook at home as much as possible, using low fat cooking methods, such as bake, broil, microwave, roast, steam, sauté, or grill. Restaurant foods and processed foods often have added sugar and more sodium.
- Choose fresh fruit or yogurt for dessert or try a low carbohydrate dessert recipe.
- Eat breakfast daily. Space your meals and snacks about 3 to 4 hours apart. Do not skip meals.
- Read food labels and ingredient lists on packaged foods. Avoid foods that have trans fats and partially hydrogenated oils.
- Follow these food safety tips during pregnancy:
  - Avoid raw or uncooked meat, poultry, eggs, and fish.
  - Avoid hot dogs and deli meats (unless heated until steaming hot).
  - Avoid raw or unpasteurized milk, and cheese and dairy products made with unpasteurized milk.
  - Avoid soft cheese, such as Brie and Camembert.
  - Avoid moldy blue cheeses, such as Gorgonzola.
  - Wash all produce well before eating or cooking.

## Carbohydrate counting

Carbohydrate counting, also called carb counting, is a nutrition planning tool for people living with diabetes. Carb counting involves using food labels and estimating portion sizes of foods to keep track of the amount of carbohydrates you eat with each meal or snack.

Carbohydrates include starches, fiber, and sugars. Carb counting can help to keep your blood sugar levels in a healthy range because carbohydrates affect your blood sugar more than other nutrients.

### How to Count Carbohydrates

When reading food labels, use these tips to help you count carbohydrates:

- 1. Check the serving size.** All nutritional information on the label is based on 1 serving. Look at the common measure, such as cups or tablespoons. The grams (g) listed are the weight of the serving.

The serving size for the product in the food label on the next page is 1 cup.

## 2. Look for total carbohydrates in grams.

This includes the fiber, sugars, and other carbohydrates in the food. Use this number when counting carbohydrates.

There are 22 grams of carbohydrates in this product per serving. If you ate 2 servings of this food, you would be getting 44 grams of carbohydrates.

- ## 3. Compare food labels.
- Start comparing the serving sizes of products you eat, and then compare the grams of total carbohydrates. Look at the fiber and sugar content. Please note that products marked as “sugar free,” “reduced sugar,” or “no sugar added” are not necessarily carbohydrate-free. Read the product’s food label to understand how many carbs you are eating.



# Nutrition Facts

6 servings per container  
Serving size 1 cup (140g)

Amount per serving  
**Calories 170**

	% Daily Value*
Total Fat 8g	10%
Saturated Fat 3g	15%
Trans Fat 0g	
Cholesterol 0mg	0%
Sodium 5mg	0%
Total Carbohydrate 22g	8%
Dietary Fiber 2g	7%
Total Sugars 16g	
Includes 8g Added Sugars	16%
Protein 2g	
Vitamin D 0mcg	0%
Calcium 20mg	2%
Iron 1mg	6%
Potassium 240mg	6%

\*The % Daily Value tells you how much a nutrient in a serving of food contributes to a daily diet. 2,000 calories a day is used for general nutrition advice.

## Carbohydrates — serving sizes

If you have a food exchange book or list, you can use it to look up grams of carbohydrates for foods. Otherwise, read the product’s food label. If no food label is available, use the estimates on the next pages to calculate the carbohydrate grams for a food. Be aware that carbohydrate amounts can vary greatly between different types of the same food. For example, some breads are 15 grams a slice while others are closer to 25 grams.

## Whole Grains and Starchy Vegetables Group

- **Choose whole grains** (like brown rice and whole wheat pasta) **over refined grains** (like white rice and pasta).
- 1 serving equals 15 grams of carbohydrate.
- 1 serving =
  - 1 slice of bread
  - 1 small roll
  - ¼ of a bagel
  - ½ of a hamburger bun or English muffin
  - 1, 6-inch tortilla
  - ⅓ cup cooked rice, pasta, barley, quinoa, or couscous
  - ½ cup cooked bulgur wheat, lentils or legumes (dried beans or peas)
  - ½ cup corn, sweet potato or green peas



- ▶ 3 ounce baked sweet or white potato with skin
- ▶ ½ cup cooked cereal
- ▶ ¾ cup unsweetened dry cereal
- ▶ ¾ ounce of pretzels
- ▶ 3 cups hot air popped or microwave popcorn with no more than 3 grams of fat per serving

## Fruit Group

- Pregnant people should eat fruit every day.
- 1 serving equals 15 grams of carbohydrate.
- 1 serving =
  - ▶ 1 cup fresh melons or berries
  - ▶ ¾ cup fresh pineapple
  - ▶ ½ cup fresh grapes
  - ▶ 1 small fresh fruit, such as an apple the size of a baseball
  - ▶ ½ of a large piece of fresh fruit, such as ½ of a large banana or large pear
  - ▶ ½ cup canned fruit in juice
  - ▶ 2 tablespoons of dried fruit
  - ▶ 4 ounces of 100% fruit juice, unsweetened



## Milk Group

- Pregnant people should drink milk or eat yogurt every day.
- 1 serving equals 15 grams of carbohydrates.
- 1 serving =
  - ▶ 1 cup (8 ounces) fat free or low fat milk
  - ▶ 1 cup (8 ounces) of plain yogurt
  - ▶ 6 ounces of light yogurt or Greek yogurt



## Sweets and Added Sugars

Limit the amount of sweets you eat. They are high in carbohydrates and often high in calories and fat. This includes limiting the amount of cake, ice cream, pie, syrup, cookies, candies, and doughnuts you eat. Try to avoid adding table sugar, honey, or other sweeteners to your foods or beverages. Limiting sweets will help to keep your blood sugar in a healthier range. Limit sugar to 6 teaspoons or about 100 calories per day (24 grams of sugar).

## Fiber

A high fiber diet can help you have healthier blood sugar levels. Choose whole grains that are high in fiber as well as fruits, vegetables, beans, and lentils. Talk with your dietitian about how to increase fiber in your diet.

## Foods that have little effect on blood sugar

### Non-starchy Vegetables Group

- Have little effect on blood sugar.
- 1 serving equals 5 grams of carbohydrates.
- 1 serving =
  - 1 cup raw vegetables or salad greens
  - ½ cup cooked vegetables
  - ½ cup vegetable juice
- Examples include:
  - Artichoke
  - Asparagus
  - Bean sprouts
  - Beets
  - Bok choy
  - Broccoli
  - Brussels sprouts
  - Cabbage
  - Carrots
  - Cauliflower
  - Celery
  - Cucumber
  - Green or yellow beans
  - Salad greens
  - Mushrooms
  - Onions
  - Peppers
  - Radish
  - Snow peas
  - Sugar snap peas
  - Tomatoes
  - Turnips
  - Yellow squash
  - Zucchini



### Protein Foods Group

Avoid meats that are high in saturated fat, such as bacon and sausage.

1 serving =

- 1 egg, 2 egg whites, or ¼ cup egg substitute
- 1 ounce turkey breast or chicken breast, skin removed
- 1 ounce lean deli meat (with 3 grams or less of fat per ounce) – heat to steaming hot
- 1 ounce fish fillet
- 1 ounce shellfish
- 1 ounce canned tuna in water
- 1 ounce lean beef, lamb, or pork (limit to 1 to 2 times per week)
- 1 ounce cheese
- ¼ cup nonfat or low fat cottage cheese
- ½ cup cooked beans or lentils – count as 1 serving of starch (carbs) and 1 serving of meat (protein)
- 4 ounces tofu
- 2 tablespoons natural peanut butter
- 2 tablespoons seeds
- 1 ounce nuts



## Fats Group

Limit fried foods in your diet. Try to bake or broil your foods more often.

Moderate fat intake during pregnancy is ideal. Do not follow a very low fat diet. If you have questions about the fat in your diet, talk to your dietitian or nurse.

1 serving (5 grams of fat) =

- 1 teaspoon oil (vegetable, corn, canola, olive, etc.)
- 1 teaspoon butter or margarine
- 1 teaspoon mayonnaise
- 1 tablespoon salad dressing
- 1 tablespoon cream cheese
- ¼ of an avocado
- 8 to 10 large olives
- 1 slice bacon



## Sample menu

- A sample menu is provided on the next page to help you get started. If you need help creating a nutrition plan, please speak with your dietitian or nurse.
- Your nutrition plan should include a moderate amount of **carbohydrates** (whole grains and starchy vegetables, fruit, or milk) and a variety of **non-starchy vegetables** and **protein foods**.
  - Meals should include 2 to 4 servings or 30 to 60 grams of carbohydrates per meal.
  - Snacks should include 1 to 2 servings or 15 to 30 grams of carbohydrates per snack.
  - Include a protein food with each meal and snack.

<b>Breakfast</b>				
1 whole wheat waffle	or	1 slice of toast	=	15 grams
1 cup low fat milk	or	1 tablespoon jelly	=	15 grams
½ large banana	or	1 small orange	=	15 grams
2 tablespoons natural peanut butter	or	1 hard boiled egg	=	0
<b>Snack</b>				
1 small apple	or	1 cup strawberries	=	15 grams
2 tablespoons natural peanut butter	or	1 boiled egg	=	0
<b>Lunch</b>				
3 ounces tuna fish	or	2 tablespoons natural peanut butter	=	0
½ bagel (2 ounces)	or	2 slices of bread	=	30 grams
1 tablespoon light mayonnaise	or	2 tablespoons hummus	=	0
½ cup cooked broccoli	or	1 cup celery sticks	=	0
½ cup fruit cocktail	or	¾ cup blueberries	=	15 grams
<b>Snack</b>				
5 to 6 whole wheat crackers	or	½ cup peaches	=	15 grams
1 ounce cheese	or	½ cup low fat cottage cheese	=	0
<b>Dinner</b>				
1 medium baked potato (6 ounces)	or	2 small dinner rolls	=	30 grams
3 ounces grilled chicken	or	3 ounces steak	=	0
1 tablespoon fat free sour cream	or	1 tablespoon salad dressing	=	0
½ cup California mixed vegetables (broccoli and carrots)	or	1 cup salad	=	0
1 cup strawberries	or	1 cup low fat milk	=	15 grams
<b>Snack</b>				
1 cup sugar snap peas	or	½ cup grapes	=	15 grams
½ cup hummus	or	1 ounce cheese	=	0
<b>Total grams of carbohydrates for day</b>			=	<b>180 grams</b>



# Healthy Snacks for Healthy Blood Sugar

Snacking can be a part of a healthy diet. This helps to control your appetite. It also helps manage your blood sugars. A snack, as opposed to a treat, is a “mini meal” meant to provide the nutrients your body needs. Snacks that combine carbohydrates with fiber and protein and that are low in sugar are better at managing blood sugar and appetite. These snacks can be healthy choices for everyone regardless if they have blood sugar problems.

## Create a healthy snack

Choose 1 food item from the carbohydrate (carb) list and 1 food item from the protein list to create a healthy, balanced snack, such as 1 small apple (carb) and 1 tablespoon natural peanut butter (protein).

### Carb

- 1 small apple
- ½ large banana or pear
- ¾ cup blueberries
- ½ cup fruit, such as grapes, pineapple, or peaches
- 2 tablespoons raisins
- 1 cup non-starchy vegetables such as carrots, cucumber, sugar snap peas, and bell pepper strips
- ½ cup cooked oatmeal
- 5 to 6 whole wheat crackers
- 3 (2½ inch) graham crackers
- ½ whole wheat pita
- 1 slice whole wheat toast
- ½ whole wheat toasted English muffin
- 1 to 2 rice cakes
- 3 cups popcorn with less than 3 grams of fat per serving

### Protein

- 1 tablespoon natural peanut butter or other nut butter
- ½ cup tuna, chicken, or egg salad made with light mayonnaise
- 1 hard-boiled egg
- 1 scrambled egg
- ¼ cup nuts, such as walnuts and almonds
- 1 ounce cheese
- ½ cup low fat cottage cheese
- 6 ounces plain or light yogurt
- ⅓ cup hummus
- 2 to 3 slices of low fat lunch meat
- 1 ounce jerky
- ½ cup roasted chickpeas
- 1 ounce of seeds, such as sunflower and pumpkin

## Snack ideas with 1 carb serving (about 15 grams of carbohydrates) and 1 protein serving

- 1 small apple slices topped with 1 tablespoon natural peanut butter
- ½ cup tuna, chicken, or egg salad made with light mayonnaise in ½ of a 100% whole wheat pita
- ½ large banana with a hard boiled egg
- ½ cup cooked oatmeal with ¼ cup chopped nuts
- 5 to 6 whole wheat crackers with 1 ounce cheese
- 1 cup non-starchy vegetables (carrots, cucumber, sugar snap peas, bell pepper strips) and ½ cup hummus
- 2 tablespoons raisins and ¼ cup roasted unsalted almonds
- ½ cup low fat cottage cheese and ½ cup fruit, such as pineapple or peaches
- ¾ cup blueberries and ¼ cup walnuts
- Celery topped with 1 tablespoon natural peanut butter and 2 tablespoons raisins
- 1 slice 100% whole wheat toast with 1 scrambled egg and ½ teaspoon butter
- ½ cup grapes and 1 ounce cheese
- ½ whole wheat toasted English muffin, topped with 1 tablespoon cashew butter
- 3 cups popcorn with less than 3 grams of fat per serving and 1 ounce cheese



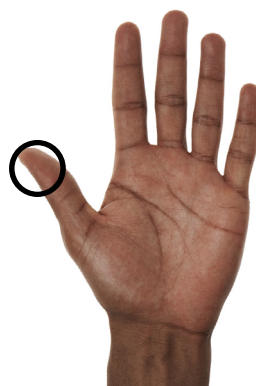
## Standard portions

When you are away from home and do not have measuring cups and spoons handy, it helps to know what a standard portion looks like. The table below gives examples of common serving sizes and everyday items they are equal to.

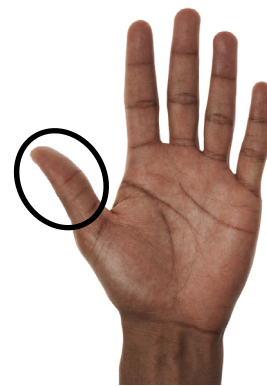
Serving Size	Similar Sized Item
1 teaspoon	Small marble or tip of thumb
1 tablespoon	Large marble, poker chip, or thumb to first knuckle
2 tablespoons	2 large marbles, 1 ping pong ball, or whole thumb
¼ cup	Golf ball or cupped handful
½ cup	Tennis ball, hockey puck, deck of cards, bar of soap, checkbook, computer mouse, or palm of hand
1 cup	Wiffle ball, baseball, or a small fist
1 ounce	4 dice or 2 dominoes



1 teaspoon



1 tablespoon



2 tablespoons



¼ cup



½ cup



1 cup



1 ounce

# Dealing with Sick Days

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## How being sick can impact blood sugar

Although no one plans it, everyone gets sick from time to time. The person with diabetes, like everyone else, will have minor illnesses, such as:

- Colds
- Viruses
- Diarrhea
- Flu
- Sore throats
- Infections
- Sunburns

Minor illnesses like these can make your blood sugar become too high or too low. To understand how this happens, think of a minor illness as a stress on the body. Stress usually raises blood sugar. The person with diabetes works hard to balance medicine, diet, and exercise. The added stress of a cold or other illness upsets this balance. Your usual medicine, diet, and exercise are then less effective keeping your blood sugar level in a healthy range.

**Think about prevention, planning ahead, and being prepared for sick days.** This will make them easier to manage.

## Prevention

Use these guidelines to help you create a plan to prevent illness:

- 1. Talk to your healthcare provider about the vaccines you should get during pregnancy to protect your health and the health of your baby.** They may recommend these vaccines, which are safe to receive during pregnancy:
  - **Flu vaccine** – to protect you against the flu virus. Getting the flu vaccine, or flu shot, has been shown to protect both the pregnant person and the baby for many months after birth. People who are pregnant and get the flu are at risk for becoming seriously ill. This can lead to pregnancy complications like early delivery. It is safe to receive the vaccine during any trimester of pregnancy.
  - **Tdap vaccine** – to protect you and your baby against tetanus, diphtheria, and pertussis (whooping cough). By getting this vaccine between 27 and 36 weeks of pregnancy, you pass antibodies to your baby before birth to protect them until they are old enough to be vaccinated at 2 months of age.
  - **COVID-19 vaccine** – to protect you from the coronavirus (COVID-19), which can cause serious illness during pregnancy, including early delivery, stillbirth, and other complications. It is safe to receive the vaccine during any trimester.
  - **RSV vaccine** – to protect you from the respiratory syncytial virus (RSV), a respiratory virus that causes cold-like symptoms. You can receive the vaccine between 32 and 36 weeks of pregnancy.

2. **Keep blood sugar levels in your “target range” (60 to 120 mg/dL).** Watch for patterns of high or low blood sugar. Work with your provider to change your diabetes medicines, diet, and exercise to keep your blood sugar in a healthy range. Many people find that they are more likely to get ill when their blood sugar stays outside the target range.
3. **-Drink at least 8 (8-ounce) glasses of water or other liquids each day.**
4. **Take all of your medicines as prescribed.** Do not skip or double up on any medicine unless you are advised to do so by your provider.
5. **Treat any illness in its early stages to prevent it from getting worse.** Report signs of illness or infection early to your provider. These include:
  - A fever of more than 100.5 degrees F or 38 degrees C for more than 24 hours
  - Nausea
  - Vomiting
  - Diarrhea
6. **Always wear some form of medical identification.** A medical ID speaks for you when you are not able to. Good choices include:
  - **A bracelet:** This is the best choice since it can be easily seen.
  - **A wallet card:** Place this card next to your driver’s license. It should list your:
    - Name
    - Address and phone number
    - Healthcare provider’s name and phone number
    - All of the medicines you are taking
    - Emergency contact’s name and phone number
  - **Medical ID app:** Medical ID is pre-installed on iPhone as part of the Health app. It is free to download for Android phones. The app is visible on your phone’s lock screen, allowing first responders to access your medical information and emergency contacts.



## Preparing for sick days

1. **Keep at least a week’s worth of diabetes supplies on hand.** This includes:
  - Glucose test strips
  - Lancets
  - Alcohol swabs
  - Cotton balls
  - Diabetes medicines (insulin, oral)
  - Syringes or pen needles
  - Extra batteries for glucose meter or insulin pump
  - Ketostix (type 1 diabetes)
  - Glucagon emergency kit (type 1 diabetes)
  - Insulin pump supplies (for pump users)

**2. If you do not already have a sick day nutrition plan, make an appointment with a dietitian to make an individualized plan.** Stock your kitchen with soft and liquid foods that can be used in your sick day nutrition plan. Some good choices include:

- Bouillon cubes and broth soups
- Gelatin and pudding (sugar free and regular)
- Hot cereals like Cream of Wheat
- Hot chocolate (sugar free and regular)
- Instant custard mix
- Instant mashed potatoes
- Popsicles (sugar free and regular)
- Saltine and graham crackers
- Diet sodas like Diet 7UP, Diet Pepsi
- Regular sodas like Coke, Sprite, Ginger Ale
- Tea bags
- Unsweetened fruit juices

**3. -Check the supplies in your medicine cabinet.** Keep the following on hand:

- Thermometer
- Lip balm/petroleum jelly
- Vaporizer/humidifier
- Glucagon (for severe low sugar – insulin users)
- Over the counter medicines – Talk to your provider or pharmacist about safe products to use during pregnancy for minor problems, such as chest congestion, cough suppression, constipation, diarrhea, gas, heartburn, hemorrhoids, pain, nausea, sore throat, insomnia, and vaginal yeast infection

**4. Make a list of the following phone numbers.** Keep this list by the phone for quick and easy use. Include:

- Healthcare provider's office number
- Pharmacy or pharmacist
- Local family member
- Friend or neighbor
- Local hospital emergency room
- Diabetes nurse

## Sick day plan

Now that you have reviewed how to prevent and plan ahead for sick days, it is time to review what to do when you become ill. At the first sign of illness, begin using your sick day plan. Remember, even a minor illness or stress can lead to a diabetes emergency that may require a hospital stay.

You may also want to put your sick day plan into use for:

- Dental work
- Tests/procedures

**Your prompt action can and will make a difference. These sick day guidelines will help you:**

- 1. Check your blood sugar more often – at least every 4 hours.** Aim to keep your blood sugar under 200 mg/dL. There may be times when you will need to check your blood sugar hourly. Record all blood sugar levels. Keep this record by the phone, so you are ready to share it with your provider.
- 2. If you have type 1 diabetes, check your urine ketones.** Use a foil wrapped strip, such as Ketostix, to check every time you urinate. Record these results in your blood sugar record. Talk with your provider if you do not know how to check your ketones.
- 3. -NEVER stop taking your diabetes medicine.** Take your usual dose unless your provider has told you differently. When ill, you may need more diabetes medicine to help manage your blood sugar. Some people wrongly believe that because they are ill and eating less, they need little or no medicine. High blood sugar can lead to a diabetes emergency. You may need more insulin or extra shots when ill. Your body sees the illness as a stress and usually more medicine is needed to manage your blood sugar.
- 4. Follow your sick day nutrition plan:**
  - **Eat frequent small meals (every 2 to 3 hours).** You need to eat the same amount of carbohydrate that you normally do. Soft and liquid foods may be more easily tolerated by your stomach. See the handout "Sick Day Carbohydrate Replacement" on pages 54 to 55 for some "replacement" carbohydrates on sick days.
  - **Drink more liquids when ill.** Try to drink 12 (8-ounce) glasses of liquid each day. Take small sips of liquids or suck on ice chips if you are nauseated.
  - A loss of body fluid (dehydration) and sodium and potassium (electrolytes) can cause serious problems when you have a fever, diarrhea, or vomiting. Weigh yourself every day when ill to see if you are losing weight, and **drink liquids that contain sodium and potassium** to replace these minerals in your body. **Liquids high in sodium** include sports drinks like Gatorade and Powerade, club soda, tomato juice, broth, or bouillon. **Liquids high in potassium** include sports drinks, grapefruit juice, orange juice, or tomato juice.
    - › **Drink 4 to 6 ounces (½ to ¾ cup) of sugar free liquids every hour if your blood sugar is 200 mg/dL or higher.** Liquids include water, ice chips, club soda, sports drinks, coffee, tea, and broth.
    - › **Drink 4 to 6 ounces (½ to ¾ cup) of liquids with sugar every hour if you cannot eat your usual diet or soft foods, and your blood sugar is below 200 mg/dL.** Liquids with sugar include 7UP, Sprite, tea with honey, and Kool-Aid. This will help you get some calories with your fluids.
  - **If you are vomiting:**
    - › **Stop drinking liquids for 1 hour.** This will let your stomach rest.
    - › If nausea happens often, talk with your provider about getting a prescription for use at home.
    - › Rest in a reclining chair. Do not lie flat.
    - › **After 1 hour,** try small sips of lemon-lime soda, such as 7UP or Sprite, over ice chips every 10 to 15 minutes.
    - › **If vomiting continues for 4 or more hours,** call your provider or go to the emergency department.

5. **Keep a list of how you are feeling.** Write down your signs and symptoms. Be ready to share this information with your provider:
- **Temperature:** Current temperature? Is a fever is present? How long? How high? Have you taken acetaminophen (Tylenol)?
  - **Vomiting:** How many times? How long since you last vomited? Have you been able to eat or drink anything? Have you taken any medicine for nausea or vomiting?
  - **Cough:** Are you coughing up yellow or green mucous? Have you taken cough syrup or lozenges?
  - **Diarrhea:** How many times? How long since last episode? Have you taken anti-diarrheal medicine?
  - **Ketones:** Do you have a moderate or large level of ketones in your urine?
6. **Call your provider early in the illness.** Together you can work to relieve symptoms and manage your blood sugar. If you are unable to reach your provider by phone, call or go to the nearest emergency department. This is very important if you have been vomiting or have had diarrhea for 4 or more hours.
- Call your provider if you are unsure of what to do or have:**
- Blood sugar greater than 200 mg/dL for more than 1 day
  - Moderate or large ketones
  - Vomiting or diarrhea for 4 or more hours
  - Severe pain of any kind
  - Fever of more than 100.5 degrees F or 38 degrees C
7. **If you live alone,** call a family member or close friend. Let them know you are at home and sick. **Set up a calling system, so you are in touch by phone every 2 to 4 hours.** Sometimes you may not realize how ill you are. You may need someone to come and stay with you.
8. **Stay at home and get plenty of rest.** Do not risk your health or the health of others by going to work ill. Resting 1 or 2 days at the start of an illness may prevent the loss of several days work later on.
9. **Do not exercise when you are ill.** Postpone exercise until you are well.

Although sick days do not happen often, the person with diabetes can learn how to manage them. Take time now to review your personal sick day plan. Being prepared to handle ill days and putting into action your own sick day plan is a good way to begin.

By following these sick day tips, you may be able to avoid going to the hospital. You can make a difference. Your healthcare team can help you get started.

# Sick Day Carbohydrate Replacement

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When you are sick, look for ways to balance carbohydrates and protein to get the nutrition that your body needs.

- Eat the same amount of carbohydrates as you do on days that you are well.
- Try to drink 12 (8-ounce) glasses of liquid each day.
- Eat small meals of carbohydrates if you have nausea or a poor appetite.

**Follow a carbohydrate replacement plan.** To use, replace the carbohydrate servings from your usual nutrition plan with any of the carbohydrate foods listed below. These carbs are easier on your stomach when you are sick.

## Carbohydrate

All items listed are a 15 gram serving.

Please note that some items are not diet or sugar free to get more carbohydrates in smaller amounts of food.

## Starch Replacement

- ½ cup regular sweetened Jell-O or other brand gelatin (not diet or sugar free)
- ½ cup or 4 ounces of regular soda (not diet)
- 1 slice toast
- 2 slices light bread, toasted
- 3 graham cracker squares
- 5 vanilla wafers
- 6 saltine crackers
- ¾ cup dry unsweetened cereal
- 1 cup broth soup
- ¾ cup cream soup
- ½ cup mashed potatoes
- ⅓ cup plain rice
- ½ cup cooked cereal

## Fruit Replacement

- ½ cup unsweetened applesauce
- 1 regular popsicle (half of 2 stick popsicle)
- 1 frozen fruit juice bar
- ⅓ cup cranberry, grape, or prune juice
- ½ cup apple, grapefruit, orange, or pineapple juice
- 2 teaspoons honey or sugar

## Milk Replacement

- ½ cup baked custard
- ½ cup vanilla ice cream
- ¼ cup regular pudding
- ½ cup sugar free pudding
- ½ cup eggnog
- 1 cup sugar free fruited yogurt

## Protein

If your stomach can tolerate it, include foods from the protein foods group, such as eggs, cottage cheese, baked chicken, turkey, or ground beef.

## Sample sick day nutrition plan

A regular 2,000 calorie nutrition plan has been changed into a 1,500 calorie sick day nutrition plan. Do not worry if you cannot eat all of the foods listed. The most important thing is that you eat or drink something at each meal and snack to keep your blood sugar level stable.

Work with your dietitian to change your diabetes nutrition plan into a sick day nutrition plan that meets your calorie and nutrition needs.

	2,000 Nutrition Plan	1,500 Sick Day Nutrition Plan
<b>Breakfast</b>	½ cup cooked rolled oats (1 starch) 1 slice toast (1 starch) 1 tablespoon peanut butter or 1 cooked egg (1 protein) 1 cup fat free skim milk (1 milk) coffee, tea (free)	1 slice toast (1 starch) 1 soft cooked egg (1 protein) 1 cup fat free skim milk (1 milk) coffee, tea (free)
<b>Morning snack</b>	1 cup fat free skim milk (1 milk) 3 graham cracker squares (1 starch)	½ cup sugar-free pudding (1 milk) 3 graham cracker squares (1 starch)
<b>Lunch</b>	Meat sandwich (2 starches and 3 proteins) 2 tablespoons avocado or 1 tablespoon light mayonnaise (1 fat) Tossed garden salad (1 non-starchy vegetable) 1 small apple (1 fruit) 1 tablespoon low calorie salad dressing (1 fat)	1 cup chicken noodle soup (1 starch) 6 saltines (1 starch) ¼ cup cottage cheese (1 protein) ½ cup sweetened soda (1 carb choice)
<b>Afternoon snack</b>	½ cup cottage cheese (2 proteins) ½ cup or 1 small piece fruit (1 fruit)	½ cup regular (not sugar free) gelatin (1 carb choice)
<b>Dinner</b>	3 ounces baked chicken (3 proteins) 2/3 cup rice pilaf (2 starches) 1 dinner roll (1 starch) 1 cup cooked broccoli (2 non-starchy vegetables) 2 teaspoons margarine (2 fats) 1 cup skim milk (1 milk)	¾ cup cream soup (1 starch) ½ cup mashed potatoes (1 starch) 1 cup tomato juice (1 non-starchy vegetable) ½ cup baked custard (1 milk)
<b>Evening snack</b>	3 cups popcorn (1 starch) 1 small orange or other fruit (1 fruit) 12 ounces light lemonade or water (free)	1 popsicle (1 fruit) 5 vanilla wafers (1 carb choice)



# Diabetes and Exercise

Exercise is key to managing your diabetes.

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## Getting started

Talk to your healthcare provider about the type of exercise and activities safe for pregnancy. You can most likely continue to exercise during pregnancy and get the health benefits of low to moderate routines.

For your safety, follow suggested limits and stop exercising right away if you feel pain or pressure in your chest, neck, or jaw; feel dizzy or light headed; have irregular heartbeats; or become too tired.

## Benefits of consistent exercise

- May reduce need for diabetes medicines.
- Improves blood sugar levels.
- Improves your body's ability to use its own insulin.
- Helps you feel better and have more energy.
- Lessens your risk of diabetes complications.
- May help lower lipid levels (cholesterol and triglycerides).

## Testing your blood sugar

You should test and record your blood sugar levels both before and after exercise to understand the effect. This is particularly important any time you start or increase your exercise routine. For some people with diabetes, especially those taking insulin, **there may be a risk of hypoglycemia or low blood sugar with exercise**. The amount or type of insulin may need to be adjusted or a carbohydrate snack may be used to increase your blood sugar.

## Your exercise plan

- **Begin slowly and increase the time you exercise and the intensity of the exercise over time.**
- The type of exercise you choose depends on what you like and what is comfortable for you.
  - **If you do not exercise regularly,** talk with your provider about adding low impact exercise, such as stretches and exercises to your daily routine. Walking, swimming, bicycling, and aerobics are good choices for exercise. Start slowly, such as walking for 10 minutes a day. Add a few minutes to your walk each week until you are able to walk for 30 minutes most days of the week.
  - **If you exercise regularly,** ask your provider how to modify your activity level as your body changes with pregnancy.
  - **If your provider orders bed rest,** talk about exercises you can do in bed during pregnancy.
- Many of the changes that take place in your body during pregnancy are there for 4 to 6 weeks after delivery. Return to your pre-pregnancy exercise routine slowly, based on your overall recovery.

### To get the best results:

- **Exercise at least 30 minutes on most days of the week.** Exercise helps to keep your blood sugar in a healthy range, reduce the discomforts of pregnancy, improve sleep, lower stress, and keep your body strong for labor and delivery.
- **Include a warm up and a cool down period with your exercise.** This helps prevent injury and allows your body to adjust to your activity. It is also a good idea to stretch your muscles after you cool down. This helps with flexibility and helps to reduce injury.
- Work up to a level of exercise that is comfortable for you. If you can exercise every day, you will see better balance in your blood sugar.

## Special precautions during pregnancy

- **Avoid exercising flat on your back after the first 12 weeks of pregnancy.**
- Avoid standing for long periods of time.
- Stop exercising when you are tired. Do not exercise until you feel exhausted.
- Avoid any type of exercise in which there is a higher risk of falling or trauma to the abdomen.
- Changes that occur in your body shape and size over your pregnancy will limit the types of exercise you can do safely as your balance changes.
- Drink plenty of water and add 300 calories a day to your diet to take care of your baby.
- **Stop exercising if you have:**
  - Dizziness
  - Headache
  - Chest pain
  - Calf pain or swelling
  - Abdominal pain
  - Blurred vision
  - Fluid leaking from vagina
  - Vaginal bleeding
  - Less fetal movement
  - Contractions

**If any of these signs persist after stopping exercise, call your provider or seek medical help right away.**

# Stress and Diabetes

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## About stress

Stress is any feeling that bothers you or puts a strain on your body or mind. Some people describe stress as an uncomfortable feeling of tension. Others describe it as a feeling of excitement and challenge. Stress is a part of everyday life and everyone has it. Life is not perfect and many of its challenges can be stressful.

Stress can be both good and bad:

- Examples of “good” stress include getting married, the birth of a child, or a promotion. These types of stress can add interest and excitement to your life.
- Examples of “bad” stress include traffic tickets, doing poorly on a test in school, going through a divorce, or the death of a loved one. These types of stress can be upsetting and hard to deal with.

## The body’s response to stress

When the body is under stress, it releases hormones made by the endocrine glands. The body also has a rise in heartbeat, blood pressure, and blood sugar. You may have heard this reaction called the “fight or flight” response. Release of these hormones gives a quick source of energy for coping with stress.

These body changes can be harmful for anyone, but high blood sugar can be especially dangerous for people with diabetes. **Stress can easily upset the balance of medicine, diet, and exercise you use to manage your blood sugar.** Not keeping your blood sugar in a healthy range may lead to diabetes emergencies and complications over time.

## Signs of stress

High blood sugar caused by stress often causes warning signs. Learn to identify how your body shows signs of stress. Recognizing stress is the first step in dealing with it.

**Do any of these signs of stress sound familiar?**

- Lacks emotion or interest
- Avoiding people
- Clenched teeth
- Constant tiredness
- Crying spells
- Diarrhea
- Emptiness
- Feeling bored often
- Feeling discouraged
- Feeling helpless
- Frequent self-criticism
- Headaches
- Hunched, tight shoulders
- Neck stiffness or tightness
- Nervous laughter
- Problems sleeping
- Prolonged frustration
- Rapid heartbeat
- Rapid or shallow breathing
- Sweating
- Tight mouth or jaw
- Tightened fists
- Twitching
- Upset stomach

You may have only a few or several signs of stress. Knowing how you feel when you are under stress is an important step toward learning to deal with it. Take time to answer the following questions for yourself:

- Can you tell when you are under stress?
- What causes stress for you?
- What situations are stressful for you?
- What are 2 or 3 personal signs of stress for you?
- How do you usually deal with stress?
- Do you feel overwhelmed or like you are running on empty? How do you handle these feelings?

**Ask your provider for a referral to talk to a mental health specialist if you are having signs of stress, anxiety, or depression for more than 2 weeks.**

## Diabetes and stress

It is common to feel overwhelmed about managing diabetes with everything else that is going on in your life. You may feel your body is no longer under your control. It is natural to sometimes feel angry, guilty, depressed, frustrated, and helpless about having diabetes and managing it day by day.

Your thoughts, feelings, and attitudes about diabetes and taking care of yourself have a powerful effect on your body. A good place to start is to accept diabetes as a challenge. Next, make a plan for how to live well with diabetes and manage stress. Your plan should include:

- A healthy diet
- Exercise
- Ways to stay positive
- Relaxation techniques and stress management
- A commitment to lifelong learning

You may want some help to learn how to deal with stress. Challenge yourself to learn how to relax. Use stress management techniques and exercises, such as meditation or guided imagery. Look in your community for courses on a variety of stress or behavior modification techniques. Ohio State Integrative Health also has free resources to help:

[wexnermedical.osu.edu/integrative-health/resources](http://wexnermedical.osu.edu/integrative-health/resources).

## In summary

Nothing stays the same for very long and change is a part of life. Change is closely linked with stress. Although we cannot always control the changes and stresses in our lives, we can choose how to respond to them. Imagine how boring our lives would be if we never had change!

Your emotional health is closely linked with your physical health. Health in both areas requires learning how to recognize and manage stress. Since stress is a natural part of everyone's life, it is important for you to think about what causes you stress, whether it is diabetes, your pregnancy, or another part of your life. Learning how to recognize your own personal stress symptoms is the first step. Begin to take an active role in decreasing the effects of stress on your body and in your life. Good luck!

# After Delivery for People with Diabetes -

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After you give birth, several body changes will occur. First, your weight and activity levels will change. You may also have emotional ups and downs, which is common after giving birth. After your baby is born, your insulin needs will be lower than they were during your pregnancy. A few weeks after delivery, your insulin dose should return to the level it was before you became pregnant.

**Your baby also needs some time to adjust their blood sugar right after birth.** Your baby may need to go to the Neonatal Intensive Care Unit (NICU) for observation. Low blood sugar is common in babies at birth due to the sudden removal of their blood sugar supply from the pregnant parent. Blood sugar tests will be done by taking a small drop of blood from your baby's heel. An IV may be needed to give your baby fluids and glucose. When your baby adjusts to their new environment, the IV will be removed.

## Breastfeeding

You can breastfeed your baby. As a nursing parent with diabetes, your calorie needs must be carefully adjusted. About 500 calories a day should be added to your diet. This calorie increase covers the extra energy needed for breast milk production. If you breastfeed for longer than 3 months, you may need to increase your calories more. Your healthcare team will help you adjust your diet and insulin needs to nurse your baby.

Remember to keep a record of your blood sugar levels.

## Birth control

Choosing the safest and best time to have a child is 1 of the keys to planning a successful pregnancy when you have diabetes. Discuss birth control methods with your healthcare provider before discharge from the hospital.

Remember, you could become pregnant soon after you give birth. Even if you have not had a menstrual period, you may still ovulate. Some people believe that breastfeeding your baby will prevent you from becoming pregnant. **This is not true.**

## Safe spacing between pregnancies

For your health and the health of your baby, it is recommended that you wait 2 years before giving birth to another child. This is called safe spacing between pregnancies.

If you have concerns about having your babies closer together, please talk with your provider.

### Safe spacing between pregnancies can help to:

- Lower the risk of having a premature baby.
- Lower the risk of having a baby with a low birth weight.
- Lower the risk of having a baby that is small for its gestational age.
- Lower the risk of autism in the second born child.
- Increase the benefits of breastfeeding for baby and parent.
- Lower the risk of pregnancy and childbirth-related complications, such as miscarriage and preeclampsia.
- Give your body time to heal and be healthy before the next pregnancy. Use this time to eat nutritious foods to build up nutrients in your body and manage your weight.
- Give you time to take prenatal vitamins with folic acid before your next pregnancy.
- Give you time to start a regular exercise routine, manage your blood pressure, and stop smoking.
- Give you and your partner time to bond with your current baby and adjust to becoming parents. It is less stress and work to care for 1 young child at a time.
- Allow time for your family to adjust to the cost of having 1 baby before having another.

Birth control can help you safely space pregnancies and prevent unplanned pregnancies. A birth control plan can be created while you are still pregnant. **Talk with your provider about the different birth control methods available, any questions you have, and what is best for your needs.**

### In summary

Although your new baby will need a lot of your time and energy, do not forget to take good care of yourself. Because of the changes your body has been through with pregnancy and delivery, your diabetes will need special attention. Follow your nutrition plan, take your diabetes medicine if ordered, check your blood sugar, and be active to keep your blood sugar in a healthy range. This will allow you to be a healthy parent to your new baby.







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