

buckeyebaby

Diabetes During Pregnancy and Diabetes Survival Skills



**THE OHIO STATE
UNIVERSITY**

WEXNER MEDICAL CENTER

Diabetes During Pregnancy and Diabetes Survival Skills



THE OHIO STATE UNIVERSITY
WEXNER MEDICAL CENTER

Table of Contents

Diabetes and Pregnancy

Diabetes and Pregnancy	4
Feelings About Being Pregnant and Having Diabetes	6

Tests

First Trimester Screen	7
Fetal Movement Count	8
Non-Stress Test in Pregnancy	9

Checking Your Blood Sugar

Glucose Testing during Pregnancy	10
How to Use a Glucose Meter	15
High Blood Sugar in Pregnancy	17
Low Blood Sugar in Pregnancy	20
Testing Urine for Ketones during Pregnancy	23
Blood Sugar Record for Pregnancy Women with Diabetes	25
Blood Sugar Record for Pregnancy Women with Diabetes Taking Insulin	26

Talk to your doctor or health care team if you have any questions about your care.

For more health information, contact the Library for Health Information at **614-293-3707** or e-mail **health-info@osu.edu**.

Insulin

Insulin during Pregnancy	27
How to Take Your Insulin	30
Drawing Up One Insulin	33
Mixing Two Insulins	36

Diet

My Diabetic Meal Plan during Pregnancy	39
Healthy Meals for Blood Sugar Control	46
Healthy Snacks for Blood Sugar Control	49
Dealing with Sick Days	52
Sick Day Meal Plan	56

Exercise

Diabetes and Exercise	58
-----------------------------	----

Living with Diabetes

Stress and Diabetes	60
After Delivery for the Woman with Diabetes	62
Resources for Diabetes	63

Diabetes and Pregnancy

How will diabetes affect my pregnancy?

Several changes may be needed during pregnancy to control your diabetes.

First Trimester

Insulin needs may drop during the first three 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 requirements. You must guard against low blood sugar, also called hypoglycemia or an insulin reaction, by following your meal 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.

The signs of low blood sugar include:

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

Each person will become familiar with her 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 doctor may order short and intermediate acting insulin to control your diabetes. Sometimes during pregnancy, a short stay in the hospital is needed to closely check your blood sugar and medicines to control your diabetes.

Third Trimester

During the last three months of your pregnancy, called the third trimester, your baby will grow quickly. You will need to follow your meal 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 doctor will continue to adjust your insulin to meet your body's needs.

How do I control of my diabetes during pregnancy?

Follow a daily routine:

- Regular meals
- Insulin injections before meals and bedtime
- Moderate exercise

Blood sugar testing gives an accurate picture of your diabetes control. Test your blood sugar at home as often as you are directed. Keep an accurate record of your results and be sure to bring these results to each doctor's visit. You may also need to test your urine for ketones as instructed by your doctor or nurse. 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 at home. The test is done by sticking the 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, your nurse will teach you.

Will my baby be healthy?

If your diabetes has been well controlled during your pregnancy, your chances of having a healthy baby are about the same as a mother who does not have diabetes. However, if your blood sugar level is not kept at near normal level, your baby may have a number of problems. To find out how healthy your baby is, your doctor may order tests to monitor the heart rate and activity levels. This is in addition to blood and urine tests and ultrasound testing.

If blood sugar levels are poorly controlled in the first three months of pregnancy, babies of mothers with diabetes have a higher rate of birth defects. Sometimes babies of mothers with diabetes are large (over nine pounds), which can make delivery more difficult. Keeping near normal blood sugar levels can prevent this. These babies also may have low blood sugar after birth. They are 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 control of blood sugar. Other factors are related to how your general health has been affected by your diabetes. In general, if your blood sugar level was under control before your pregnancy, complications from diabetes will be fewer.

A complication that is common to mothers 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 doctor or nurse.

What are the chances of my baby having diabetes?

The chances of your baby having diabetes at birth are small. Most children of mothers with Type 1 diabetes never develop diabetes. Babies whose mothers have Type 2 diabetes may develop diabetes later in life as an adult. Talk to your doctor or nurse 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 dietitian, doctor and nurse 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 in pregnancy, the easier it will be for you to control 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.

Feelings about being pregnant and having diabetes

- It is important to understand how being pregnant can affect your diabetes control. 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 problems or concerns 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 controlling 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.

First Trimester Screen

There are two 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

There are 3 conditions the test checks for:

- Down Syndrome or problems with chromosome 21.
- Edward's syndrome or other problems with chromosome 18. You may hear the term Trisomy 18.
- Patau syndrome or other problems with chromosome 13. You may hear the term Trisomy 13.

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

Having the test

An abdominal ultrasound is performed, and then a finger stick is done to get a blood sample. Gel is placed on the abdomen and a probe is used to obtain measurements of 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 doctor in 5 to 6 days. Waiting for the results can cause anxiety and worry. Talk to your partner, health care provider and family about your feelings.

Test results

This test is a screening only. It helps your doctor measure the **risk or chance** of your baby having one of these chromosome defects.

- **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 surrounding the baby, called amniocentesis.
- Testing of some tissue from the placenta called a CVS (Chorionic Villus Sampling).
- Genetic counseling to review the results.

Non-Stress Test in Pregnancy

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 to the baby or mother when having the test.
- The test may be repeated during pregnancy.

To prepare

- The test will take 20 to 60 minutes.
- Please empty your bladder before the test starts.

During the test

- You will lie down and 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 he or she moves. 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 him or her for the test.

Test results

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

Glucose Testing during Pregnancy

A blood glucose monitoring device, also called a **blood sugar meter**, allows you to measure the amount of sugar, called glucose, in your blood. The device uses a test strip that has chemicals on it. A small drop of your blood, often from the side of your finger, is placed on a test strip. The blood drop mixes with the chemicals on the strip, and in less than 30 seconds, you know your blood sugar or glucose result.



CDC/Amanda Mills

Your doctor wants you to test your blood sugar to learn more about your diabetes. By knowing your blood sugar levels, both you and your doctor can make changes in your current medicine, diet and exercise plan to better control your diabetes. 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 the blood sugar meter you have selected if you have any problems.

Blood sugar target range

Keeping your blood sugar under control can help protect against diabetes complications that affect the eyes, kidneys, heart, blood vessels and nerves. **For pregnant women, 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.
- Two hours after you eat, it should be 60 to 120.

If your diabetes is out of control, do not expect to get it under control overnight. Start slowly and work with your doctors, nurses and dietitians to get your blood sugar in the target range and learn to live well with diabetes.

Greater than 200	High Blood Sugar
120 60	Target Range
Less than 60	Low Blood Sugar

Blood sugar above your target range, called **high blood sugar**, may lead to diabetes complications of the eyes, kidneys, nerves, heart and feet. 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 food, too much insulin or diabetes medicine, or too much or unplanned exercise.**

When to check your blood sugar

Your nurse or doctor 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 before and after each meal, at bedtime and sometimes at 3:00 AM.**
- **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.

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
- Sharps disposal container



CDC/Amanda Mills

In addition, 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 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 wrap strips, check to make sure the foil wrap has not been opened or damaged. Sunlight and moisture can damage the strips.
- Use each lancet only one time. Talk to your doctor or nurse to find out if it is safe for you to reuse the lancets.
- Code the meter with each new bottle or box of strips if needed.
- Use the control solutions when you open a new bottle or box of strips to make sure the strips are good, so your result will be correct.

What sites to use for testing

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 test 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 testing.



What to do if problems occur

Most people have no problems. Blood sugar testing is an easy and almost painless test. The chart below has some helpful hints to help you avoid problems.

Problem	What to do
Sore fingers	<ul style="list-style-type: none"> • Use only the sides of your fingers and thumbs. • Always use a lancing device. • Use a different finger or thumb for each test. • Use a micro fine lancet (30 to 33 gauge). • Lightly place the lancing device against the side of your finger. • Consider alternate site testing. • Use a lancing device with an adjustable cap or depth.

Problem	What to do
Blood drop is too small	<ul style="list-style-type: none"> • Shake your hand and lower it below heart level before lancing your finger. • Do NOT use lancets without a lancing device. • If using a micro fine lancet, try using a smaller gauge lancet. • Wash your hands with warm, soapy water before testing. • Squeeze your finger until it turns pink before using the lancing device. • Squeeze your finger after using the lancing device to get a bigger drop of blood.

Record your blood sugar readings

Keep a record of your blood sugar readings, so you and your doctor can see patterns of low and high blood sugar. Make copies of the record sheet 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 record sheet with you to all appointments.

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

Safely throw away lancets and needles in sharps container

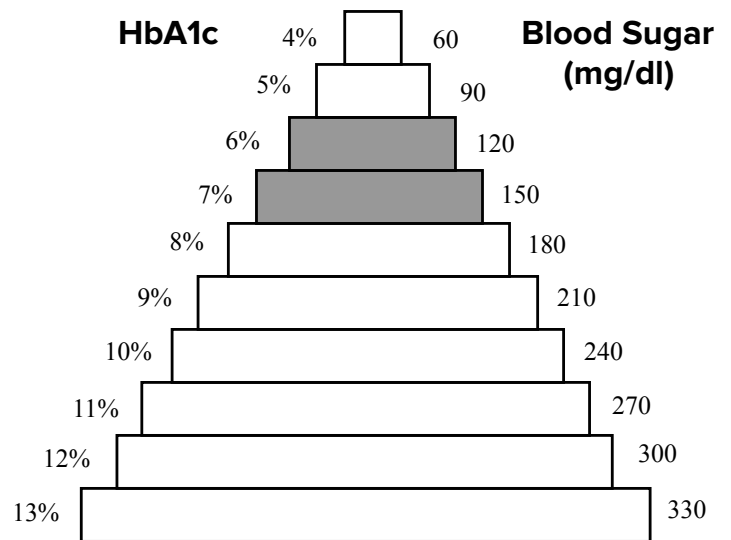
- **To protect yourself and others, never throw lancets or needles into the trash.**
- **Buy a sharps or needle disposal container** at the drug store or use an empty, heavy plastic bleach or detergent bottle with a lid.
- Keep the container out of the reach of children or pets.
- Ask your pharmacist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

A1C test

An A1C test, also called the hemoglobin A1C, HbA1c or glycohemoglobin test, measures blood sugar or glucose over the last 2 to 3 months. An A1C of 7% or less indicates that your diabetes is well controlled.

The A1C test is a partner to daily blood sugar testing. A1C cannot identify glucose patterns. Using a blood sugar meter daily to test your blood sugar lets you see patterns of high and low blood sugar. You, your doctor and your diabetes team will look at both your A1C and daily blood sugar test results to determine what changes are needed to your medicines, diet or exercise to keep your diabetes under control.

A1C levels should be checked every 3 to 6 months. Keeping your blood sugar under control is important to prevent complications of diabetes.



How to Use a Glucose Meter

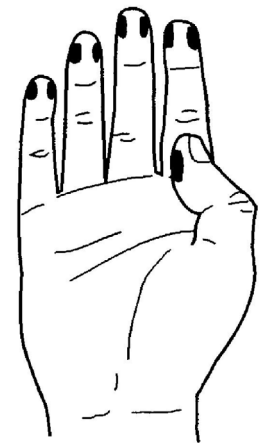
Using a glucose meter to check your blood sugar level gives you information that will help you to manage your diabetes. Learn how to use your meter, so you are able to check your blood sugar fast and with ease to get accurate results. Read the owner's manual and work with your nurse, doctor or pharmacist to show you how to use your meter. Practice with your meter following these basic steps.



CDC/Amanda Mills

1. Wash your hands with warm water and soap for at least 15 seconds. Rinse with clean water and towel dry.
 - This removes germs from your hands but also helps to warm your fingers, so you will bleed more easily.
 - If you are not able to wash your hands, use an alcohol pad to clean the side of the finger you will stick to get a blood drop.
 - If you are using a site other than a finger, cleanse that site with soap and water or use an alcohol pad to clean the site.
2. Gather your supplies:
 - Your meter
 - Test strips for your meter
 - Lancing device
 - Lancet or needle
 - Log book or record sheet and pen or pencil
3. Open the lancing device and put a lancet in. Remove the cover on the lancet, being careful not to touch the needle.
4. Put the cover back on the lancing device. Set the lancing device, so it is ready to be used to stick you. Put it down for now.

5. Get a test strip.
 - Open the vial or bottle holding the strips, remove one and close the bottle right away, or
 - Tear open the foil cover to get your strip out for your meter.
 - If your meter stores the strips inside the meter, go to the next step.
6. Turn your meter on. Pushing a button often does this, but some meters turn on by placing the strip in the meter.
7. Check the screen for the code on your meter. Be sure it matches the code on your test strips.
 - The code is most often on the bottle or vial or the wrapped strip will have the code printed on the wrapper.
 - If your meter has the code built into the strips, go to the next step.
8. When the test strip symbol flashes on the screen, put the test strip in the meter.
9. Pick up the lancing device and place it against the site you are going to use. You can get a drop of blood from:
 - The sides of your fingers and thumbs. Use a different finger each time you test 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.
 - Forearms or top of legs if an alternate site meter is used. Be sure you have warmed the site, so you will bleed.
10. Push the button on the lancing device to release the needle. You will feel the stick. Set the lancing device down.
11. Squeeze your finger, so you get a large drop of blood.
12. Put the blood on or in the test strip, being sure you have filled the test area.
13. The meter will allow time for the test and then your glucose result will show on the screen.
14. Write the glucose reading on your log book or record sheet.
15. Remove the test strip and turn off the meter by pressing the on/off button. Some meters may turn off when the strip is removed. You can throw the test strip away in your trash can.
16. Remove the lancet from the lancing device. Throw the lancet into a puncture proof container, such as a sharps or needle disposal container or an empty, heavy plastic bleach or detergent bottle with lid. You can buy a needle disposal container at the drug store. Ask your pharmacist or nurse how you should throw away your container when it is full. You can also check with your garbage collector.
17. Put your supplies away, so they are ready when you need them again.



Ask your nurse, diabetes educator, doctor or pharmacist if you have questions about your meter and doing your glucose testing. Most meter companies will have a 1-800 phone number available around the clock if you have problems with the meter or doing your testing.

High Blood Sugar in Pregnancy

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

Women 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.
- Two 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 gets high during pregnancy, it can lead to problems for both you and your baby.

Problems for the baby

- Problems with the heart, spine and other organs not forming well in the early weeks of pregnancy if the mother had high blood sugar at the time she became pregnant.
- Too much sugar from the mother causes the baby to 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 the mother

- If the mother had poorly controlled diabetes before pregnancy with complications to her eyes, kidneys or heart, these could get worse 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 the baby is large due to high blood sugar, a C-section may be needed at delivery. This puts the mother 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 three months. There are several reasons for high blood sugar. The most common reasons during pregnancy include:

- The hormone changes during pregnancy
- Eating more food than your meal plan allows
- Eating foods high in sugar or high in carbohydrates
- Not taking enough medicine (insulin)
- Missed, skipped or delayed medicine (insulin)
- 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 doctor or nurse advises. Most pregnant women with diabetes will check their blood sugar 4 to 8 times each day, before meals and 2 hours after eating.

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 doctor or nurse. 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 meal plans, activities, diabetes medicines and your glucose record sheet. 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 meal 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 doctor if you see patterns of high blood sugar.
- Follow your sick day plan if you are ill.

Low Blood Sugar in Pregnancy

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 glucose level is between 60 and 120. **Low blood sugar means the glucose is below 60.**

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 15 mg or 1 serving of carbohydrate,** such as:
 - 1 cup of milk
 - 4 peanut butter or cheese crackers
 - ½ meat and cheese sandwich
 - 1 tablespoon of sugar
 - ½ cup of juice or soda
 - 3 squares of graham crackers
 - Chew 3 glucose tablets
 - 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 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 above. Continue to recheck your blood sugar every 15 minutes until it is in the normal range.

- **If your blood sugar is 40 to 50, eat or drink 30 mg 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 for blood sugar control. 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.
- **Call your doctor or nurse 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, meal plans and activity of the last few days. Look for any changes that might 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 doctor.
 - Follow your meal plan. Eat meals and snacks at the same time each day. Do not miss, skip or delay meals.
 - Exercise as directed.

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

Family and friends

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.

Glucagon injection

If you have Type 1 diabetes, a family member, spouse or roommate also should learn how to give a shot of glucagon. Glucagon is a hormone that raises your blood sugar. It is used 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. A nurse will teach your spouse, family member or friend how to give glucagon.

Testing Urine for Ketones during Pregnancy

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 doctor or nurse 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 doctor or nurse 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 meal 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, as foil-wrapped strips store longer. If you use another product, carefully read the product's directions for use.

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 doctor right away if your result is moderate to large. Moderate to large results are a danger sign that your diabetes is out of control. You may need more insulin and liquids, especially water.

Insulin during Pregnancy

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

Your doctor may prescribe insulin to treat your diabetes because:

- Your body does not make insulin (Type 1 diabetes).
- Your body does not make enough insulin (Type 2 diabetes).
- Your body is not able to use the insulin it makes (Type 2 diabetes).
- It is the best medicine choice to control 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 can be injected with an insulin 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 three months of pregnancy.
- **If you have Type 2 diabetes** and take diabetes pills to control your blood sugar, you may not be able to take them while pregnant. Your doctor may switch your medicine to insulin.

Supplies

You will need these supplies to take your insulin. Keep at least a week's supply on hand at all times.

Injector pen:

- Insulin pen or cartridges
- Pen needles
- Alcohol swabs

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.

Syringe:

- Insulin vial
- Syringes with needles
- Alcohol swabs

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 doctor will choose the kind and amount of insulin you need. Check the label(s) on your insulin bottle(s) to be sure you have the right kind.
2. Learn the following information about your insulin:
 - Name: such as NPH, Regular, 70/30, 75/25, 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 doctor should make these changes.

3. Travel:
 - When traveling, keep your syringes or pen needles and insulin with you in case your luggage gets lost.
 - NEVER leaves your supplies in a vehicle. You want to avoid temperature extremes.
 - Insulin needs to be refrigerated. All unopened bottles should always be stored in the refrigerator. Avoid exposing your insulin to extreme temperatures and direct sunlight.
4. Once opened, insulin can be kept at room temperature safely for:
 - 14 days for NPH.
 - 28 days for Regular, Humalog, Novolog, Apidra and Lantus.
 - 10 days for mixed insulin, such as 75/25, 50/50 and 70/30.
 - 42 days for Levemir.

5. There are four types of injectable insulin:

- Rapid acting (meal time): Apidra, Humalog and Novolog
- Short acting: Regular (Humulin R, Novolin R)
- Intermediate acting: NPH (Humulin N, Novolin N)
- Long acting (basal): Lantus, Levemir, Toujeo and Tresiba
 - Long acting insulin cannot be mixed in a syringe with other insulins

Insulin is also available in premixed combinations:

- Premixed:
 - Novolin 70/30 or Humulin 70/30 = 70% NPH and 30% Regular
 - Humalog Mix 75/25 = 75% NPH and 25% Humalog
 - Humalog Mix 50/50 = 50% NPH and 25% Humalog
 - Novolog Mix 70/30 = 70% NPH and 30% Novolog
 - Ryzodeg 70/30 = 70% Tresiba and 30% Novolog

Type	Concentration	Starts	Works hardest / peaks	Duration
Rapid acting				
Apidra (Glulisine)	U-100	12 to 30 minutes	1.6 to 2.8 hours	3 to 4 hours
Humalog (Lispro)	U-100, U-200	15 to 30 minutes	0.5 to 2.5 hours	Less than 5 hours
Novolog (Aspart)	U-100	12 to 18 minutes	1 to 3 hours	3 to 5 hours
Short acting				
Regular	U-100	30 minutes	2.5 to 5 hours	4 to 12 hours
	U-500	30 minutes	2.5 to 5 hours	Up to 24 hours
Intermediate acting				
NPH	U-100	1 to 2 hours	4 to 12 hours	14 to 24 hours
Long acting				
Lantus (Glargine)	U-100	3 to 4 hours	Nearly peakless	About 24 hours
Levemir (Detemir)	U-100	3 to 4 hours	Nearly peakless	About 24 hours
Toujeo (Glargine)	U-300	6 hours	Peakless	Greater than 24 hours
Tresiba (Degludec)	U-100, U-200	1 hour	Peakless	Greater than 24 hours
Premixed				
Humulin/Novolin 70/30	U-100	30 minutes	2 to 12 hours	18 to 24 hours
Humalog 50/50	U-100	15 to 30 minutes	0.8 to 4.8 hours	14 to 24 hours
Humalog 75/25	U-100	15 to 30 minutes	1 to 6.5 hours	14 to 24 hours
Novolog 70/30	U-100	10 to 20 minutes	1 to 4 hours	18 to 24 hours
Ryzodeg 70/30	U-100	14 minutes	72 minutes	Greater than 24 hours

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

- Do not vary the time of your injection by more than one 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 15 minutes of eating.
- Apidra is to be taken within 20 minutes of eating.
- Timing does NOT matter with Toujeo or Tresiba.

Talk with your nurse or doctor if you have any of these problems

Most people have no trouble giving their insulin injections. Talk with your nurse or doctor if you notice:

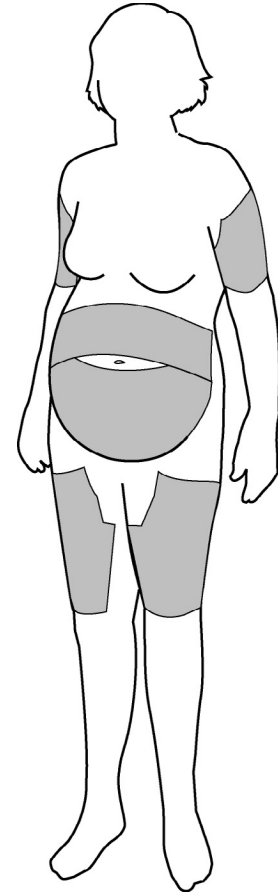
- Bruising
- Dimpled areas
- Redness
- Hard, lumpy areas
- Itching

How to Take Your Insulin

Getting ready

1. Select an area of the body for your shot.

- Insulin is absorbed differently throughout your body. **Fastest absorption is in your abdomen** followed by arms, thighs and buttocks.
- Give your insulin in the same area for 7 to 10 days before changing to a new place.
- Give your shot about 1 inch from your last shot. You may want to move from the right side of your abdomen to your left.
- Stay 1 inch away from any scars and stay 2 inches away from your belly button.



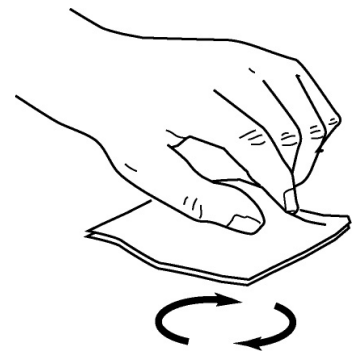
2. Gather your supplies:

- Insulin either by vial, pen or cartridge.
- Syringe or pen needle.
- Alcohol pad.
- Sharps disposal container

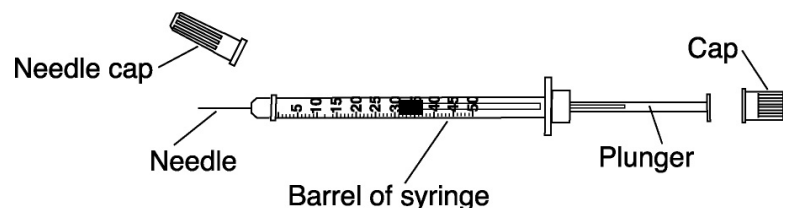
3. Wash your hands well with soap and water.

Using a syringe

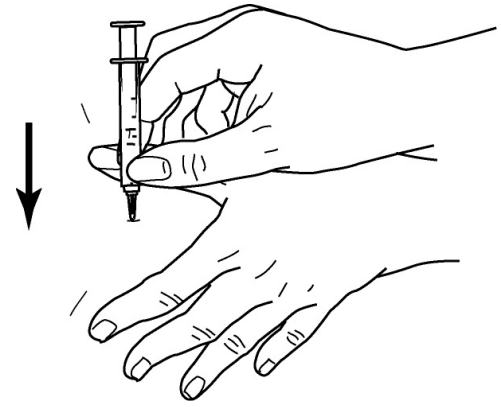
1. Clean the area with an alcohol pad using a circular motion. Let the alcohol air dry. If you have just showered or bathed, you do not need to clean the area again.



2. Take the needle cap off of the syringe and place only the cap on the table.

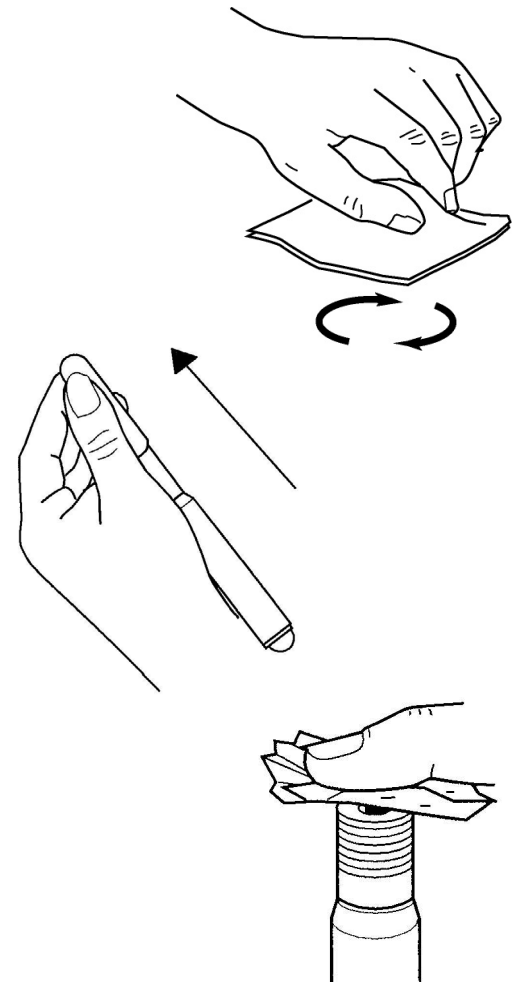


3. Pinch up and hold the skin of the area with one hand if you are using a 12 mm needle. If you are using the shorter 8 mm syringe needle, you do not need to pinch the skin unless you are very lean.
4. Put the needle straight into the skin at a 90-degree angle in a quick motion. Push the needle all of the way into the skin.
5. Using your index finger, push the plunger all the way down to inject the insulin. Hold the needle in place for a count of 10 before removing.
6. Pull out the needle.
7. Check the area for any redness, bleeding or bruising.
8. Throw the needle and syringe into the sharps disposal container.

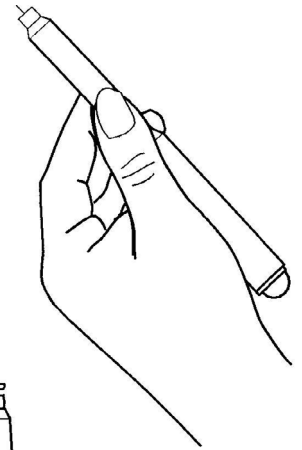


Using an insulin pen

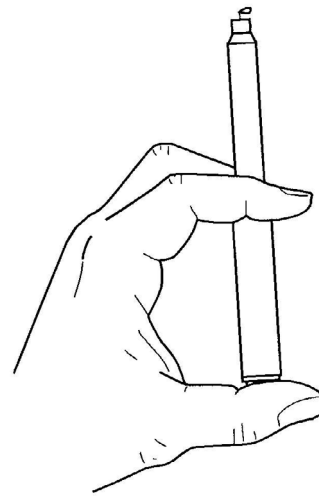
1. Clean the area with an alcohol pad using a circular motion. Let the alcohol air dry. If you have just showered or bathed, you do not need to clean the area again.
2. Remove the cover from the pen. You will be able to see the insulin in the pen.
3. If you are using a cloudy insulin (NPH, 75/25 or 70/30), 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 alcohol where the needle twists on.



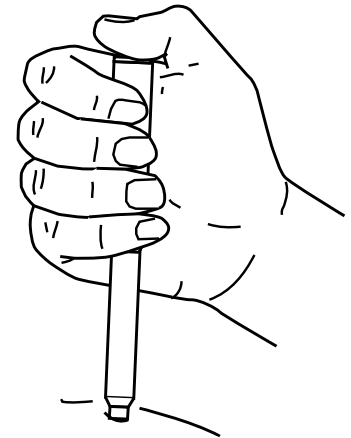
1. Attach a new needle by peeling back the paper cover and screwing it onto the pen. It should be snug but not too tight.



2. Clear the air out of the pen or prime the pen. To do this, remove the cap from the needle. Turn the knob dose dial to 2 units. Holding the pen so the needle is up in the air, 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 pushing a few times until you see the drop on the needle.



3. Dial in your insulin dose by turning the knob clockwise until you see the right number for your dose.
4. Put the needle straight into the skin at a 90-degree angle in a quick motion. Push the needle all of the way into the skin.
5. Using your thumb, push the knob down slowly to inject the insulin. Hold the needle in place for a count of 10 before removing.
6. Pull out the needle.
7. Check the area for any redness, bleeding or bruising.
8. Remove the needle from the pen. Throw it into your needle disposal container.
9. Put the cover back on your insulin pen.



Drawing Up One Insulin

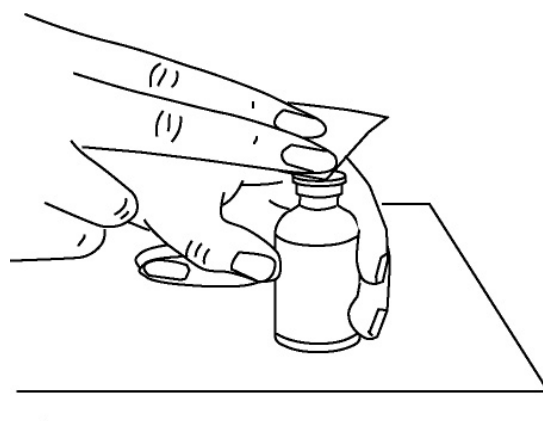
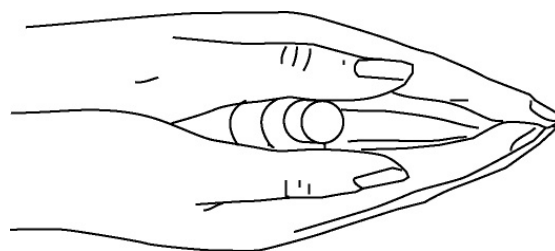
Getting insulin from the bottle into a syringe is called drawing up insulin. Follow these instructions if you need to draw up insulin and talk to your care team if you have questions.

Gather your supplies

- Insulin - Check the label on the bottle to make sure you have the right insulin and **be sure the insulin is not expired**. Regular, Humalog (Lispro), Novolog (Aspart) and Lantus insulin should be clear in the bottle. NPH, 70/30 or 75/25 insulin should look cloudy in the bottle.
- Insulin syringe
- Alcohol pad

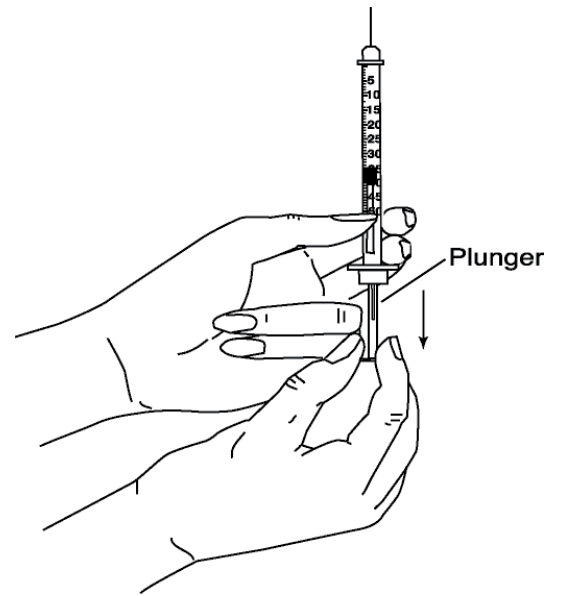
Follow these steps

1. Wash your hands with soap and water.
2. Gently roll the bottle of insulin between your hands until it is mixed. Do not shake the insulin because it causes air bubbles in the bottle.
3. Clean the top of the insulin bottle with an alcohol pad, then let it air dry.

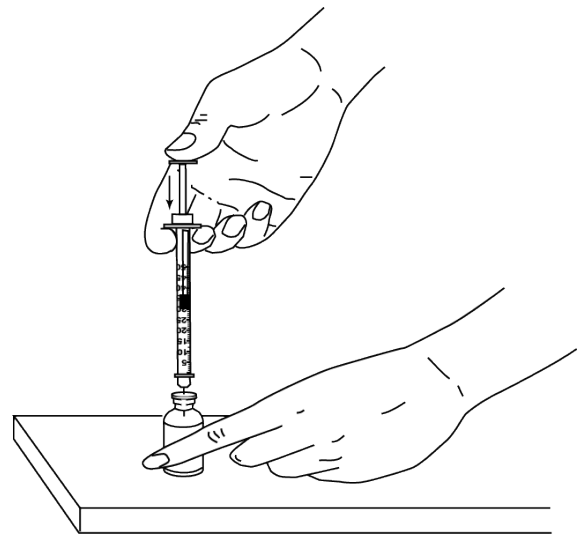


4. Take the syringe out of its package or box and remove the plastic end cap off of the syringe plunger.
5. Take off the needle cap and place it on the table.

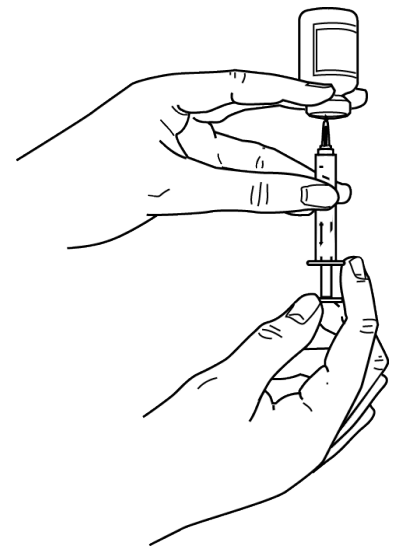
- Pull the plunger of the syringe down to the number of units of insulin you need (_____ units). This will fill the syringe with air.



- Carefully put the needle through the rubber stopper of the insulin bottle and push the plunger down to push the air into the bottle.



- Turn the bottle upside down with the syringe still in place. Pull the plunger down to the number of units of insulin you need (_____ units). Be careful to support the bottle so it does not bend the needle.
- Take the needle out of the insulin bottle and set the bottle down.



10. Check for air bubbles in the syringe. If air bubbles are present:

- Tap the syringe firmly with your fingernail to move the bubbles to the top and center of the syringe.
- Put the needle into the rubber stopper again and turn the insulin bottle upside down with the syringe in place.
- Push the plunger up a few units until the air bubbles go back into the insulin bottle.
- Pull down on the plunger and fill the syringe with the correct amount of insulin (_____ units).
- Check again for air bubbles. If present, repeat the steps above. Air bubbles will not hurt you, but they take the place of insulin, so you would get less than your full dose if there are air bubbles in the syringe.

Mixing Two Insulins

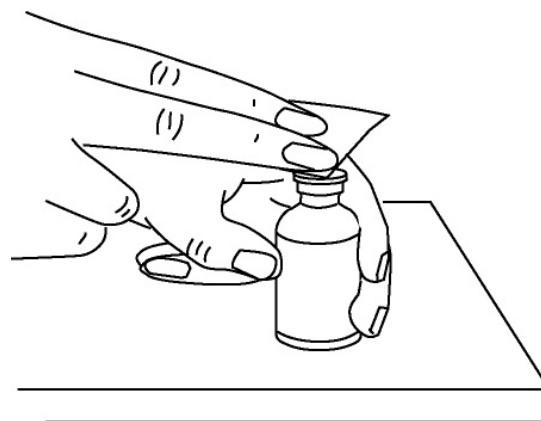
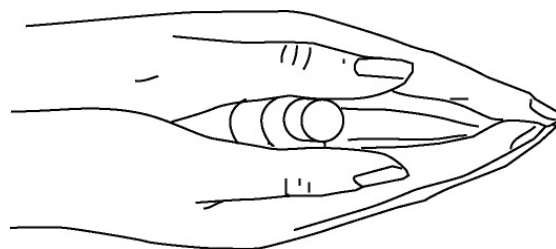
Follow these instructions if you need to mix two insulins into one syringe. Talk to a member of your care team if you have questions.

Gather your supplies

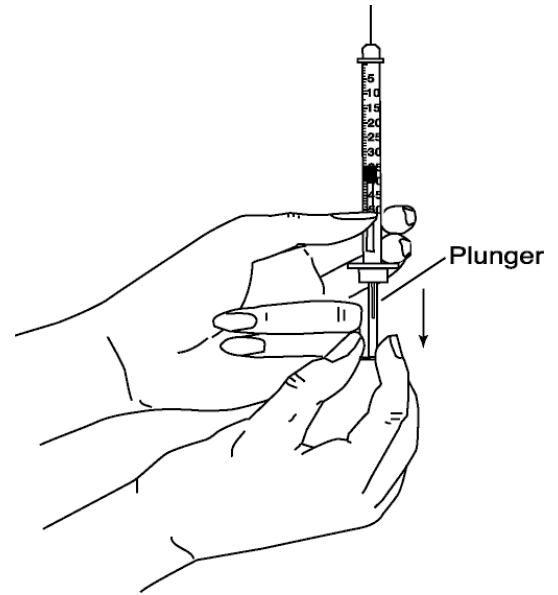
- Insulin:
_____ (cloudy insulin) and _____ (clear insulin).
Check the labels on the bottles to make sure you have the right insulin and **be sure the insulins are not expired**. NPH should look cloudy in the bottle. Regular, Humalog (Lispro) and Novolog (Aspart) insulin should be clear in the bottle.
- Insulin syringe
- Alcohol pad

Follow these steps

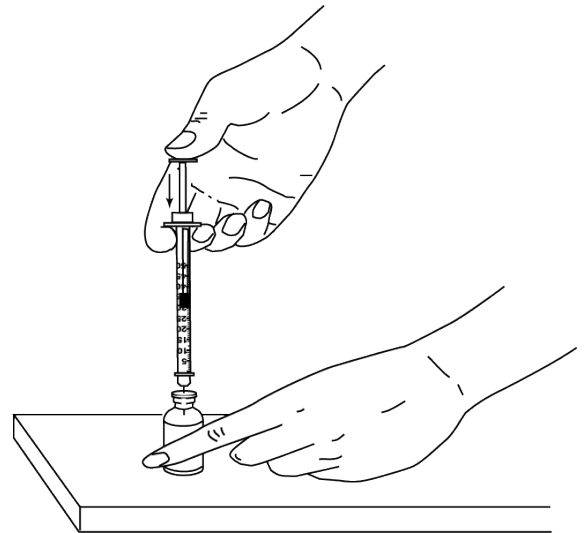
1. Wash your hands with soap and water.
2. Gently roll the bottle of **cloudy** insulin between your hands until it is mixed. Do not shake the insulin because it causes air bubbles in the bottle.
3. Clean the tops of the insulin bottles with an alcohol pad, then let them air dry.
4. Take the syringe out of its package or box and remove the plastic end cap off of the syringe plunger.



5. Take off the needle cap and place it on the table.
6. Pull the plunger of the syringe down to the number of units of **cloudy** insulin you need (_____ units). This will fill the syringe with air.

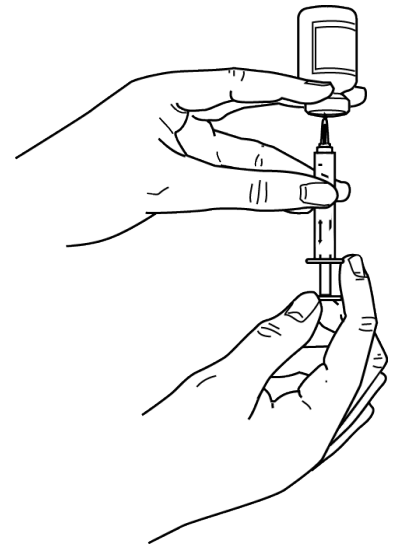


7. Carefully put the needle through the rubber stopper of the **cloudy** insulin bottle and push the plunger down to push the air into the bottle.



8. Take the needle out of the **cloudy** insulin bottle. Do not put any of the **cloudy** insulin into the syringe. Set the **cloudy** insulin bottle down.
9. Pull the plunger of the syringe down to the number of units of **clear** insulin you need (_____ units). This will fill the syringe with air.
10. Carefully put the needle through the rubber stopper of the **clear** insulin bottle and push the plunger down to push the air into the bottle.

11. Turn the **clear** insulin bottle upside down with the syringe still in place. Pull the plunger down to the number of units of **clear** insulin you need (_____ units). Be careful to support the bottle, so it does not bend the needle. Take the needle out of the **clear** insulin bottle.



12. Check for air bubbles in the syringe. If air bubbles are present:

- Tap the syringe firmly with your fingernail to move the bubbles to the top and center of the syringe.
- Put the needle into the rubber stopper of the **clear** insulin bottle. Turn the insulin bottle upside down with the syringe in place.
- Push the plunger up a few units until the air bubbles go back into the insulin bottle.
- Pull down on the plunger and fill the syringe with the correct amount of **clear** insulin (_____ units).
- Check again for air bubbles. If present, repeat step 11. Air bubbles will not hurt you, but they take the place of insulin, so you would get less than your full dose if there are air bubbles in the syringe.

13. Put the needle into the rubber stopper of the **cloudy** insulin bottle. Be careful not to push any **clear** insulin into the **cloudy** insulin bottle.

14. Say out loud the total number of units needed by adding the number of units of **clear** and **cloudy** units together:

_____ units of cloudy insulin + _____ units of clear insulin = _____ **total number of units**

15. Slowly pull the plunger back to the **total number of units** needed. This lets the **cloudy** insulin fill the syringe. If you accidentally draw up more units of cloudy insulin than are needed, do not push any insulin back into the bottle. If this happens, remove the syringe and break the plunger in two. Place all parts of the syringe into a heavy plastic container then start over.

16. Take the needle out of the **cloudy** insulin bottle and give yourself your insulin.

My Diabetic Meal Plan during Pregnancy

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

Calories come from carbohydrate, protein or fat. Carbohydrates have the largest and quickest effect on blood sugar. High carbohydrate food groups include:

- Starch, which includes whole grain foods and starchy vegetables
- Milk and yogurt
- Fruit

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

The plan

- **Your meal plan will have 3 meals and 3 snacks a day.** The goal is to keep your blood sugar at a healthy level all day long. Do not skip meals.
- **Each meal and snack should have at least one serving of carbohydrate** from the Starch, Fruit or Milk Groups **and one serving of protein** from the Meat / Meat Substitute Group.
 - **The amount of carbohydrate you need is based on your height, weight, activity level, blood sugar control and pregnancy.** Your dietitian or nurse will talk to you about the amount of calories and carbohydrate you need in your diet during pregnancy.
- You will want to eat your meals and snacks at about the same times each day. This will help to keep your blood sugar controlled for your health and the growth of your baby.

Carbohydrate counting

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

Carbohydrates are one of the main nutrients found in food and drinks. Protein and fat are the other main nutrients. Carbohydrates include starches, sugars and fiber. Carb counting can help to control your blood sugar because carbohydrates affect your blood sugar more than other nutrients.

How to count carbohydrates

When reading food labels, use these 4 tips to help you count carbohydrates:

- 1. Check the serving size.** All nutritional information on the label is based on one serving. Be sure to 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 sample product on the next page is 1 cup (228 g).

- 2. Look for total carbohydrates in grams.** This includes the fiber, sugars and other carbohydrates in the food. Use this number when counting carbohydrates. **Do not look at sugars alone. You need to consider total carbohydrates in a product.**

There are 31 grams of carbohydrate in this product per serving. If you ate 2 servings of this food, you would be getting 62 grams of carbohydrate.

- 3. Understand the sugar alcohol rule.** Sugar alcohols, like fiber, are another form of carbohydrate on product labels. Sugar alcohol is not an alcoholic drink. It refers to a specific group of sugars that come from plants and have names, such as xylitol, mannitol or sorbitol. They are in food and drinks because they have fewer calories and do not cause spikes in blood sugar.

The sugar alcohol rule: if eating a food with sugar alcohols, you can subtract half of the total grams of sugar alcohols listed from the total grams of carbohydrates.

This sample product label shows there are no sugar alcohols in it.

- 4. Compare labels.** First compare the serving sizes of products you eat. Then compare the grams of total carbohydrate. Look at the fiber and sugar content. For some products, like cookies or candy, you will find that sugar-free does not mean carbohydrate-free.

Carbohydrate serving sizes

If you have a food exchange book or list, you can use it to look up grams of carbohydrate 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.

Starch Group – 1 serving equals 15 grams of carbohydrate or 1 carb choice

Choose whole grains over refined grains. 1 serving equals:

- 1 (1 ounce) slice of bread
- 1 (1 ounce) small roll

Nutrition Facts			
Serving Size 1 cup (228g)			
Servings Per Container 2			
Amount Per Serving			
Calories 250		Calories from Fat 110	
		% Daily Value*	
Total Fat	12g		18%
Saturated Fat	3g		15%
Trans Fat	1.5g		
Cholesterol	30mg		10%
Sodium	470mg		20%
Total Carbohydrate	31g		10%
Dietary Fiber	0g		0%
Sugars	5g		
Protein	5g		
Vitamin A			4%
Vitamin C			2%
Calcium			20%
Iron			4%
* Percent Daily Values are based on a 2,000 calorie diet. Your Daily Values may be higher or lower depending on your calorie needs:			
	Calories:	2,000	2,500
Total Fat	Less than	65g	80g
Sat Fat	Less than	20g	25g
Cholesterol	Less than	300mg	300mg
Sodium	Less than	2,400mg	2,400mg
Total Carbohydrate		300g	375g
Dietary Fiber		25g	30g

- ¼ (1 ounce) bagel
- ½ 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 pretzels
- 3 cups hot air popped or microwave popcorn with no more than 3 grams of fat per serving

Fruit Group – 1 serving equals 15 grams of carbohydrate or 1 carb choice

Pregnant women should eat fruit every day. 1 serving equals:

- 1 small apple, orange or nectarine
- ½ cup fresh grapes
- 1 medium peach
- 1 kiwi
- ½ banana, grapefruit, mango or pear
- 1 cup fresh melon, raspberries or strawberries
- ¾ cup fresh pineapple, blueberries or blackberries
- ½ cup canned fruit in juice or light syrup
- ½ cup (4 ounces) fruit juice with no sugar added
- 2 tablespoons dried fruit

Milk Group – 1 serving equals 15 grams of carbohydrate or 1 carb choice

Pregnant women should drink milk or eat yogurt every day. 1 serving equals:

- 1 cup (8 ounces) fat-free or low-fat milk
- 1 cup (8 ounces) plain yogurt
- 6 ounces light yogurt

Sweets

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. Do not add table sugar, honey or other sweeteners to your foods or beverages. Limiting sweets will help to keep your blood sugar under control.

Foods that have little effect on blood sugar

Non-Starchy Vegetable Group - 1 serving equals 5 grams of carbohydrate

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

You may eat an unlimited amount of foods from this group. 1 serving equals:

- 1 cup raw vegetables or salad greens
- ½ cup cooked vegetables
- ½ cup vegetable juice

Meat / Meat Substitutes Group

Avoid meats that are high in saturated fat, such as bacon and sausage. 1 serving equals:

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

Fats

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 or 5 grams of fat equals:

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

My meal plan

Your goal for carbohydrate is based on your calorie needs during pregnancy. Your dietitian or nurse will let you know how many calories you should eat each day. 35 to 40 percent of your calories will come from carbohydrate.

Calorie level	Carbs in grams
1,900	175 to 190
2,100	185 to 210
2,300	200 to 230
2,500	220 to 250
2,700	235 to 270

It is important to spread your carbs out throughout the day rather than eating a large amount at one time. **Limit carbs to 30 to 60 grams at meals and 15 to 30 grams for snacks.** The following table gives examples of how to spread out your carbs.

Calorie level	Breakfast	Morning snack	Lunch	Afternoon snack	Dinner	Evening snack	Total carbs in grams
1,900	30	15	45	30	45	15	180
2,100	45	15	45	30	45	15	195
2,300	45	15	45	30	60	15	210
2,500	45	30	60	30	60	15	240
2,700	45	30	60	30	60	30	255

For a well-balanced diet, aim for the following servings per food group each day. Choose Meat / Meat Substitutes that are lean or medium-fat with 5 grams or less of fat per ounce.

Calorie level	Starch	Fruit	Milk	Vegetables, Non-Starchy	Meat / Meat Substitutes	Fat
1,900	6	2 to 3	2 to 3	5	9	7
2,100	7	2 to 3	2 to 3	5	10	8
2,300	8	2 to 3	2 to 3	6	11	9
2,500	9	3 to 4	2 to 3	6	12	9
2,700	10	3 to 4	2 to 3	6	13	10

Use your recommended total carbs and servings per food group to create a sample meal plan on the next page. You do not need to eat a serving from each food group at every meal or snack. We do recommend eating **at least one serving of carbohydrate** from the Starch, Fruit or Milk Groups **and one serving of protein** from the Meat / Meat Substitute Group with each meal and snack to help control your blood sugar.

Share your meal plan with your dietitian or nurse and ask questions if you need help creating a meal plan.

My sample meal plan

Meal or Snack	Food Group	Number of Servings	Total grams of carb	Menu Ideas
Breakfast	Starch			
	Milk			
	Meat / Meat Substitutes			
	Fat			
Morning snack	Starch			
	Fruit			
	Milk			
	Vegetables, Non-Starchy			
	Meat / Meat Substitutes			
	Fat			
Lunch	Starch			
	Fruit			
	Milk			
	Vegetables, Non-Starchy			
	Meat / Meat Substitutes			
	Fat			
Afternoon snack	Starch			
	Fruit			
	Milk			
	Vegetables, Non-Starchy			
	Meat / Meat Substitutes			
	Fat			
Dinner	Starch			
	Fruit			
	Milk			
	Vegetables, Non-Starchy			
	Meat / Meat Substitutes			
	Fat			
Evening snack	Starch			
	Fruit			
	Milk			
	Vegetables, Non-Starchy			
	Meat / Meat Substitutes			
	Fat			
My sample meal plan has _____ total grams of carb.				

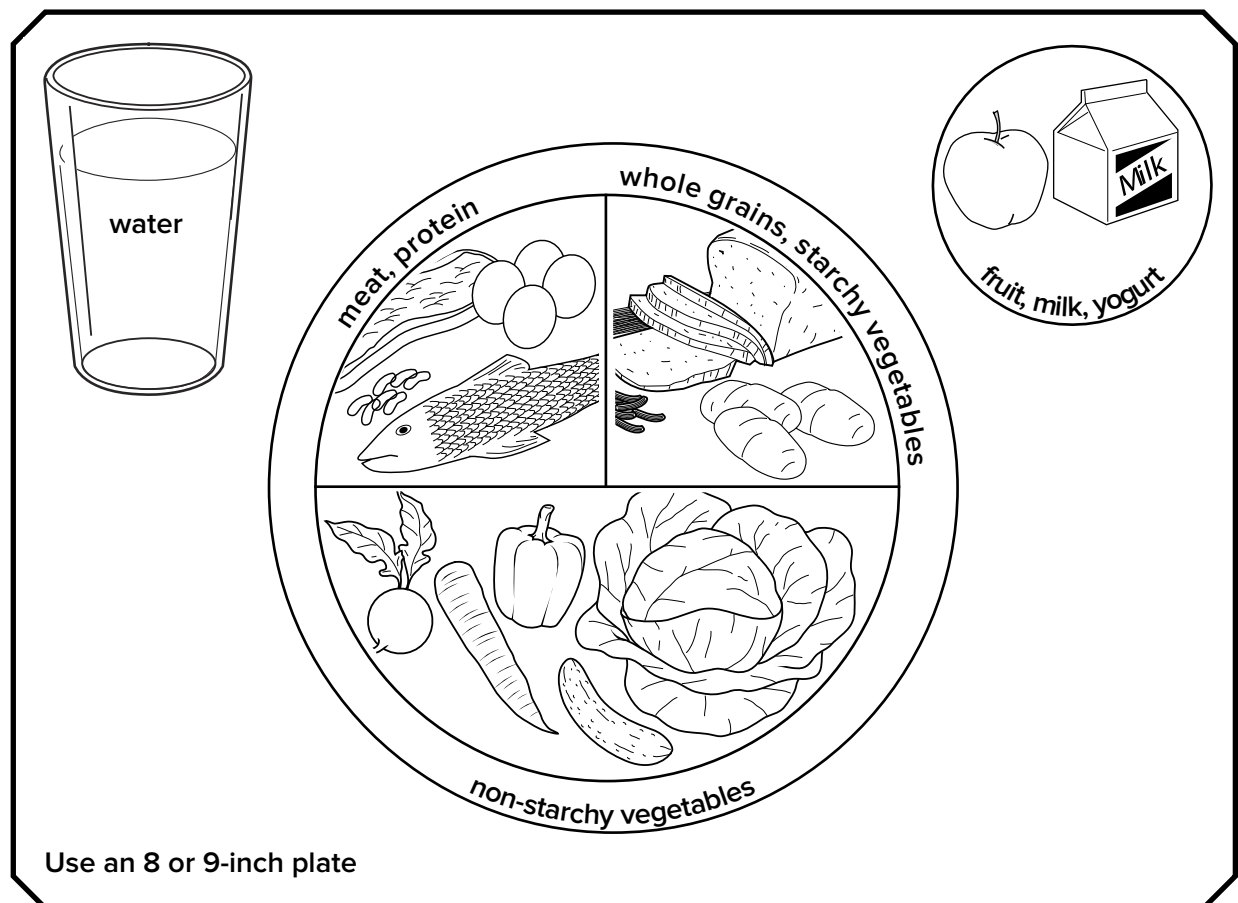
Healthy Meals for Blood Sugar Control

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

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

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

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



Follow these 5 steps to eat meals with the Plate Method

1. Divide an 8 or 9-inch plate in half and fill half of the plate with non-starchy vegetables.

These 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 added salt, sugar or fat in a variety of colors to get a variety of vitamins and minerals.

Non-starchy vegetables:

- Provide 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.

2. Divide the other half of the plate in half again.

- **Fill one section with whole grains or starchy vegetables:**

Whole grain options include:

- Barley
- Brown rice
- Oats, oatmeal
- Quinoa
- Bulgur
- Polenta
- Whole wheat
couscous
- Whole grain breads
- Whole grain cereals
- Whole wheat pasta
- Wild rice

Starchy vegetable options include:

- Beans, such as black, great northern, kidney, navy and pinto beans
- Black-eyed peas
- Corn
- Lentils
- Peas
- Potatoes with skin
- Sweet potatoes with skin

- **Fill the other section with protein foods.**

These include:

- Beef, round and loin cuts, fat trimmed
- Cheese
- Chicken, no skin
- Cottage cheese, low-fat
- Eggs
- Fish (eat fish at least 2 times per week)
- Pork, loin cuts, fat trimmed
- Turkey, no skin

3. Add a serving of fruit, milk or yogurt to your meals or eat a serving for a snack.

Aim for 2 to 4 servings of fruit and 2 to 3 servings of milk or yogurt each day.

1 serving of fruit includes:

- 1 cup fresh melon, raspberries or strawberries
- $\frac{3}{4}$ cup fresh pineapple, blueberries or blackberries
- $\frac{1}{2}$ cup fresh grapes
- 1 small fresh fruit, such as an apple the size of a baseball
- $\frac{1}{2}$ of a large piece of fresh fruit, such as $\frac{1}{2}$ of a large banana or $\frac{1}{2}$ of a large pear
- $\frac{1}{2}$ cup canned fruit in juice or light syrup
- 2 tablespoons of dried fruit
- 4 ounces of fruit juice with no sugar added

1 serving of milk or yogurt includes:

- 8 ounces fat free milk
- 6 ounces light or plain yogurt
- 6 ounces light or plain Greek yogurt

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
- 1 to 2 tablespoons of avocado
- $\frac{1}{4}$ cup of nuts or seeds

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 will not raise your blood sugar.

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.
- Read food labels and ingredient lists on packaged foods. Avoid foods that have trans fats and partially hydrogenated oils.

Healthy Snacks for Blood Sugar Control

Snacking can be a part of a healthy diet, ensuring your body gets the energy it needs every 3 to 5 hours. This helps to control appetite. It also helps to control blood sugar, which is important when you have diabetes. A snack, as opposed to a treat, is a “mini meal” meant to provide nutrients your body needs. Snacks that combine carbohydrates with fiber and protein and that are low in sugar are better at controlling blood sugar and appetite. These snacks can be healthy choices for everyone regardless if they have blood sugar problems.

Snacks with about 15 grams of carbohydrate (1 carb serving)

- 3 (2.5 inch) graham crackers topped with 1 tablespoon natural peanut butter
- ½ cup tuna, chicken, or egg salad made with light mayonnaise in one half of a whole wheat pita
- One small apple or 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 1/3 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 whole wheat toast with one 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

Other 1 carb serving snacks

Here are some less healthy 1 carb serving snacks that can fit into a healthy eating plan when eaten in moderation:

- 1 frozen fruit bar
- 3 ginger snaps
- 5 vanilla wafers
- 2 small cookies
- 8 animal crackers
- 12 reduced fat Wheat Thins
- 15 mini twist pretzels
- 10 to 12 baked Tostitos tortilla chips
- 1 ounce (about 15) potato chips
- ½ cup sugar free pudding
- ½ cup frozen yogurt
- ½ cup ice cream

Snacks with 30 grams of carbohydrate (2 carb servings)

- One half a large banana and 1 tablespoon natural peanut butter placed and rolled in 6" whole wheat tortilla
- 1 ¼ cup whole strawberries dipped in ½ cup sugar free chocolate pudding
- 1 cup fat-free or 1% low-fat milk with ¾ cup unsweetened cereal (such as Cheerios or Bran Flakes)
- 1 cup homemade trail mix (2 tablespoons dried cranberries or raisins, ¼ cup almonds and 1 cup puffed cereal, such as Rice Krispies or Kix)
- ½ cup fruit blended with 6 ounces plain or light yogurt and 2 tablespoons flaxseed meal
- Mini pizzas made from 1 split whole wheat English muffin, topped with tomato sauce and 1 ounce mozzarella cheese and then baked
- One, 6-inch whole wheat tortilla filled with ½ cup low-fat refried beans, 1 ounce cheese and salsa, and heated in the microwave
- 1 to 2 rice cakes topped with 1 tablespoon natural peanut butter and 2 tablespoons dried fruit
- 1 cup cantaloupe cubed and 1 cup unsweetened or light vanilla soy milk
- ½ cup oatmeal with 2 tablespoons dried fruit and ¼ cup pistachios

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 woman's fist
1 ounce	4 dice or 2 dominoes

Dealing with Sick Days

Minor illnesses, such as a cold or the flu, can make your diabetes hard to control. An illness, which the body sees as stress, often raises the blood sugar level. It can also decrease your appetite, making it harder to follow your carbohydrate controlled diet. An upset in the balance between diet, medicines and activity may cause problems with your blood sugar level (too high or too low).

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

Prevention

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

- 1. Get a flu (influenza) vaccine each year.** The CDC recommends that pregnant women get a flu shot during any trimester of their pregnancy to protect themselves, their developing babies and their newborn babies from the flu. These shots are available each fall.
- 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 doctor to change your diabetes medicines, diet and exercise to keep your diabetes in good control. Many people find that they are more likely to get ill when their diabetes is out of control.
- 3. Drink at least eight, 8-ounce glasses of liquid 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 doctor.
- 5. Treat any illness in its early stages to prevent it from getting worse.** Report signs of illness or infection early to your doctor. 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 bracelet is the best choice, since it can be easily seen. Another good idea is to carry a wallet card that lists your:
 - Name
 - Address and phone number
 - Doctor’s name and phone number
 - All of the medicines you are taking
 - A family member’s name and phone number

Place this card next to your driver’s license. **Medical identification speaks for you when you are not able to.**

Preparing for sick days

1. **Keep at least a week's worth of diabetes supplies on hand.**
2. **If you do not already have a sick day meal plan, make an appointment with your dietitian to make an individualized plan.**

Stock your kitchen with soft and liquid foods that can be used in your sick day meal 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 soft drinks like Diet 7UP, Diet Pepsi
- Regular soft drinks like Coke, Sprite, Ginger Ale
- Tea bags
- Unsweetened fruit juices

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 hospitalization.

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 doctor.
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 the results. Talk with your nurse or doctor if you do not know how to check your ketones.
3. **NEVER stop taking your diabetes medicine.** Take your usual dose unless your doctor has told you differently. When ill, you may need more diabetes medicine to keep your blood sugar under control. Some people wrongly believe that because they are ill and are 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 you are ill. Your body sees the illness as a stress and usually more medicine is needed to control diabetes.

4. Follow your sick day meal 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.
- **Drink more liquids when ill.** Try to drink twelve, 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 everyday 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 for example. 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 doctor about getting a prescription for use at home.
 - ▶ Rest in a reclining chair. Do not lie flat.
 - ▶ **After one 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 doctor or go to the Emergency Room.

5. Keep a list of how you are feeling. Write down your signs and symptoms. Be ready to share this information with your doctor.

- **Temperature:** Current temperature? If fever is present? How long? How high? Have you taken 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-diarrhea medicine?
- **Ketones:** Do you have moderate or large ketones in your urine?

6. Call your doctor early in the illness. Together you can work to relieve symptoms and control your blood sugar. If you are unable to reach your doctor by phone, call or go to the nearest emergency room. This is very important if you have been vomiting or have had diarrhea for 4 or more hours.

Call your doctor if you are unsure of what to do or have:

- Blood sugar level 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. One or two days of rest at the start of an illness may prevent the loss of several days of 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 doctor, nurse and dietitian can help you get started.

Sick Day Meal Plan

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 twelve, 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 meal plan with any of the carbohydrate foods listed below. These carbs are easier on your stomach when you are sick.

Carbohydrate

15 gram servings:

Starch replacement

- ½ cup regular sweetened Jell-O or other brand gelatin (not diet or sugar free)
- ½ cup or 4 ounces of regular soft drink (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 Meat / Meat Substitutes Group, such as eggs, cottage cheese, baked chicken, turkey or ground beef.

Sample sick day meal plan

A regular 2,000 calorie meal plan has been changed into a 1,500 calorie sick day meal 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 meal plan into a sick day meal plan that meets your calorie and nutrition needs.

	2,000 Meal Plan	1,500 Sick Day Meal Plan
Breakfast	½ cup cooked rolled oats (1 Starch) 1 slice toast (1 Starch) 1 tablespoon peanut butter or 1 cooked egg (1 Meat / Meat Substitute) 1 cup fat free skim milk (1 Milk) coffee, tea (Free)	1 slice toast (1 Starch) 1 soft cooked egg (1 Meat / Meat Substitute) 1 cup fat free skim milk (1 Milk) coffee, tea (Free)
Morning snack	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)
Lunch	Meat sandwich (2 Starch and 3 Meat / Meat Substitute) 2 tablespoons avocado or 1 tablespoon light mayonnaise (1 Fat) Tossed garden salad (1 Vegetable, Non-Starchy) 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 Meat / Meat Substitute) ½ cup sweetened soda (1 carb choice)
Afternoon snack	½ cup cottage cheese (2 Meat / Meat Substitute) ½ cup or 1 small piece fruit (1 Fruit)	½ cup regular (not sugar free) gelatin (1 carb choice)
Dinner	3 ounces baked chicken (3 Meat / Meat Substitute) 2/3 cup rice pilaf (2 Starch) 1 dinner roll (1 Starch) 1 cup cooked broccoli (2 Vegetables, Non-starchy) 2 teaspoons margarine (2 Fat) 1 cup skim milk (1 Milk)	¾ cup cream soup (1 Starch) ½ cup mashed potatoes (1 Starch) 1 cup tomato juice (1 Vegetable, Non-starchy) ½ cup baked custard (1 Milk)
Evening snack	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 the key to good diabetes control.

Benefits of exercise

Some of the benefits of exercise are to:

- Improve your blood sugar control.
- Help you feel more in control.
- Help with weight control.
- Improve your body's ability to use its own insulin.
- Help you feel better and have more energy.
- Lessen your risk of diabetes complications.
- May help lower your lipid levels (cholesterol and triglycerides).

All of these are good reasons to begin and stick with a regular exercise program.

Getting started

Talk to your health care provider about the type of exercise and activities safe for pregnancy.

Most women can continue to exercise during pregnancy and get the health benefits of low to moderate routines.

Testing your blood sugar

Blood sugar testing with record keeping should be done before and after exercise, especially when you first start exercising. This will let you see the affects of exercise on your blood sugar. 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 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 control your blood sugar, 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

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 your baby 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 heart beat, 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 control your diabetes.** Uncontrolled diabetes 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?

- Apathy or lacks emotion or interest
- Avoiding people
- Clenched teeth
- Constant tiredness
- Crying spells
- Diarrhea
- Emptiness
- Feeling discouraged
- Feeling helpless
- Frequent or prolonged boredom
- 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 towards 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 two or three 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?

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:

- Good nutrition.
- Exercise.
- A way to improve your attitude.
- Training on relaxation techniques and stress management.
- A commitment to life long 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. Many communities offer courses on a variety of stress or behavior modification techniques.

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.

Although we cannot control all the stress in our lives, we can learn to control our reactions to it. Controlling stress will also have a positive effect on your diabetes.

After Delivery for the Woman with Diabetes

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 as many new mothers do. 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 his or her 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 mothers' blood sugar supply. 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 his or her new environment, the IV will be removed.

Breastfeeding

As a mother with diabetes, you can breastfeed your baby. Like all nursing mothers, 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 three months, you may need to increase your calories more. Your health care team will help you adjust your diet and insulin needs for nursing 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 one of the keys to planning a successful pregnancy when you have diabetes. Discuss birth control methods with your doctor or nurse 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.**

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 meal plan, take your diabetes medicine if ordered, check your blood sugar and be active to control your diabetes. This will allow you to be a healthy mother to your new baby.

Resources for Diabetes

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

- **Ohio State’s Diabetes Research Center**
www.diabetesresearch.osu.edu, 614-685-3333
- **American Diabetes Association**
www.diabetes.org
- **Academy of Nutrition and Dietetics**
www.eatright.org
- **American Heart Association**
www.heart.org - select “Conditions” and then “Diabetes”
- **Centers for Disease Control and Prevention**
www.cdc.gov/diabetes
- **Central Ohio Diabetes Association**
<http://diabetesohio.org>
- **JDRF**
www.jdrf.org/t1d-resources - Type 1 diabetes resources and support
- **U.S. National Library of Medicine’s MedlinePlus**
www.nlm.nih.gov/medlineplus - select “Health Topics” and then “Diabetes Mellitus”
- **National Diabetes Education Program**
<http://ndep.nih.gov>
- **National Institute of Diabetes and Digestive and Kidney Diseases**
www.niddk.nih.gov

patienteducation.osumc.edu



**THE OHIO STATE
UNIVERSITY**

WEXNER MEDICAL CENTER