Diabetes During Pregnancy

Keeping your blood glucose as close to normal as possible before you get pregnant and during your pregnancy is the most important thing you can do to stay healthy and have a healthy baby. Your health care team can help you learn how to use meal planning, physical activity, and medications to reach your blood glucose goals. Together, you'll create a plan for taking care of yourself and your diabetes.

Pregnancy causes a number of changes in your body, so you might need to make changes in the ways you manage your diabetes. Even if you've had diabetes for years, you may need changes in your meal plan, physical activity routine, and medications. In addition, your needs might change as you get closer to your delivery date.

Types of Diabetes

- Diagnosed during pregnancy (Gestational diabetes).
  Gestational diabetes usually starts around 24-28 weeks gestation when your body is not able to make and use all the insulin it needs for pregnancy and subsides after pregnancy. Poorly controlled gestational diabetes can hurt your baby because blood glucose goes through the placenta, giving the baby high blood glucose levels causing the baby to grow too large (macrosomia). Babies with macrosomia face health problems of their own, including damage to their shoulders during birth. Because of the extra insulin made by the baby's pancreas, newborns may have very low blood glucose levels at birth and are also at higher risk for breathing problems. Babies with excess insulin become children who are at risk for obesity and adults who are at risk for type 2 diabetes.
- 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).

As you know, in diabetes, blood glucose levels are above normal. Whether you have Type 1 or Type 2 diabetes, you can manage your blood glucose levels and lower the risk of health problems.

A baby's brain, heart, kidneys, and lungs form during the first 8 weeks of pregnancy. High blood glucose levels are especially harmful during this early part of pregnancy, yet many women don't realize they're pregnant until 5 or 6 weeks after conception. Ideally, you will work with your health care provider to get your blood glucose under control before you get pregnant.

Treatment

Diabetes Medications

If you have Type 1 diabetes, your body's need for insulin often increases during 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 other pills that have been approved during pregnancy or insulin. Insulin is often chosen as it is safe for your baby. Insulin can be injected with an insulin pen, syringe or insulin pump.

If you have Gestational Diabetes, your doctor may prescribe pills that have been approved during pregnancy, or insulin.

Monitoring

Test your blood sugar _____ times each day. Testing your blood sugar will often show a pattern so you can determine why your blood sugars are high or low. Are the variations a result of diet, exercise, stress, or illness or has something out of the ordinary happened? It may be necessary to change your diet or begin taking insulin to maintain your blood sugar levels within the desired range. Well controlled blood sugar levels help your baby grow properly. Keep a record of your blood sugar readings so you and your doctor can see patterns of low and high blood sugar.

Frequency to check glucose levels

- Fasting – when I wake up, before I eat or drink anything
- 2 hours after the start of a meal
- Any time I feel it is necessary

TARGET GLUCOSE LEVELS	
Before a meal (preprandial)	95 mg/dl or less
1 hour after a meal (postprandial)	140 mg/dl or less
2 hours after a meal (postprandial)	120 mg/dl or less

A1c testing may be done during pregnancy, but is not as reliable due to difference in blood counts that normally change during this time.

Hyperglycemia

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:

- 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 Hyperglycemia

- Thirst
- Weight loss
- Frequent urination

Treatment of Hyperglycemia

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. Notify your primary care provider.

Hypoglycemia

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

Treatment of hypoglycemia

If your blood sugar is < 70, Consume 15-20 grams of glucose or simple carbohydrates , such as:

- glucose tablets (follow package instructions)
- gel tube (follow package instructions)
- 2 tablespoons of raisins
- 4 ounces (1/2 cup) of juice or regular soda (not diet)
- 1 tablespoon sugar, honey, or corn syrup
- 8 ounces of nonfat or 1% milk
- hard candies, jellybeans, or gumdrops (see package to determine how many to consume)

If left untreated, hypoglycemia may lead to a seizure or unconsciousness (passing out, a coma). In this case, someone else must take over and administer a glucagon injection. Glucagon kits are available by prescription. Speak with your health care provider about whether you should buy one and how and when to use it.

My Ketone Levels

When your blood glucose is too high or if you're not eating enough, your body might make chemicals called ketones. Ketones are produced when your body doesn't have enough insulin and glucose can't be used for energy, therefore your body uses fat instead of glucose for energy. Burning fat instead of glucose can be harmful to your health and your baby's health. Harmful ketones can pass from you to your baby. Your health care provider can teach you how and when to test your urine or blood for ketones.

Checking Your Baby's Health During Pregnancy

You are likely to have tests all through your pregnancy to check your baby's health. Your health care team can tell you which of the following tests you'll have and when you might have them. Your health care provider might also suggest other tests. If certain diseases or conditions run in your family, you might meet with a genetic counselor. The counselor may recommend tests based on your family history and can explain the risk of certain conditions for your baby.

Maternal Blood Screening Test

The maternal blood screening test is also called the multiple marker screen test, the triple screen, or quad screen. It measures several substances in your blood. Results can tell you whether your baby is at risk for spinal cord and brain problems, Down syndrome, and other birth defects. If the results show an increased risk for problems, additional tests such as ultrasound or amniocentesis can provide more information.

Ultrasound

Ultrasound uses sound waves to provide a picture of areas inside the body. The picture produced by ultrasound is called a sonogram. Ultrasound can show the baby's size, position, structures, and sex. It can also help estimate age, evaluate growth, and show some types of birth defects.

Fetal Echocardiogram

The fetal echocardiogram uses ultrasound to check for problems in the structures of the baby's heart.

Amniocentesis

Amniocentesis uses a thin needle inserted through the abdomen into the uterus to obtain a small amount of the fluid that surrounds the baby. Cells from the fluid are grown in a lab and then analyzed. Amniocentesis can help tell whether your baby has health problems and if your baby's lungs have finished developing. Developed lungs are needed for the baby to breathe without help after delivery.

Chorionic Villus Sampling (CVS)

CVS involves a thin needle inserted into the placenta to obtain cells. Cells then are analyzed to look for health problems. Ultrasound is used to guide the needle into the placenta, either through the vagina and cervix or through the abdomen and uterus. The placenta is composed of tissue and blood vessels that develop to attach the baby to the mother's uterus so the developing baby can get nutrition from mom.

Kick Counts (Fetal Movement Counting)

Counting kicks is an easy way to keep track of your baby's activity. You'll count how many times the baby moves during a certain period of time.

Nonstress Test

A fetal monitor checks whether your baby's heart rate increases as it should when the baby is active.

Biophysical Profile

Ultrasound checks your baby's muscle tone, breathing, and movement to obtain a biophysical profile. Ultrasound also estimates the amount of amniotic fluid surrounding the baby.

Contraction Stress Test

This test measures the baby's heart rate during contractions using a fetal monitor. The results can help your doctor decide whether the baby needs to be delivered early.

Blood Glucose Control During Labor and Delivery

Keeping your blood glucose levels under control helps ensure your baby won't have low blood glucose after birth. Because you'll be physically active when you're in labor, you may not need much insulin. Hospital staff will check your blood glucose levels frequently. Some women take both insulin and glucose, as well as fluids, through an intravenous (IV) line during labor. Infusing insulin and glucose directly into your bloodstream through a vein provides good control of blood glucose levels. If you are using an insulin pump, you might continue to use it throughout labor.

If you are having a c-section, your blood glucose levels may increase because of the stress of surgery. Your health care team will closely monitor your blood glucose levels and will likely use an IV for insulin and glucose to keep your levels under control.

Meal Planning

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 carbohydrates, protein, and fat. Carbohydrates have the largest and quickest effect on blood sugar.

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.

The amount of carbohydrates you need is based on your height, weight, activ-

ity 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. They will give you a meal plan and review it with you.

Vitamin and Mineral Supplements

Your health care team will tell you whether you need to take a vitamin and mineral supplement before and during pregnancy. Many pregnant women need supplements because their diets don't supply enough of the following important vitamins and minerals:

- Iron—to help make extra blood for pregnancy and for the baby's supply of iron
- Folic Acid—to prevent birth defects in the brain and spinal cord
- Calcium—to build strong bones

Alcoholic Beverages

You should avoid alcoholic beverages while you're trying to get pregnant and throughout pregnancy. When you drink, the alcohol also goes to your baby. Alcohol can lead to serious, lifelong problems for your baby.

Artificial Sweeteners

Artificial sweeteners can be used in moderate amounts. If you choose to use sweeteners, talk with your dietitian about how much to have.

Physical Activity

Daily physical activity can help you reach your target blood glucose levels. It can also help you reach your blood pressure and cholesterol target levels, relieve stress, improve muscle tone, strengthen your heart and bones, and keep your joints flexible. Talk with your health care team about moderate physical activity, such as walking or swimming. Consider whether you have any health problems and which exercises would be best for you.

After Your Baby Arrives

About Breastfeeding

Breastfeeding is highly recommended for the babies of women with diabetes. Breastfeeding provides the best nutrition and helps your baby stay healthy.

Post Delivery Meal Plan

If you're breastfeeding, you might need more calories each day than you needed during your pregnancy. Your dietitian can provide personalized recommendations and answer any questions you have about what, when, and how much to eat.

Your Medications

After you've given birth, you might need less insulin than usual for several days. Breastfeeding can also lower the amount of insulin you need. Diabetes pills are not recommended during breastfeeding.

Low Blood Glucose

You'll be at increased risk for low blood glucose, especially if you're breastfeeding. You might need to have a snack before or after you breastfeed your baby. Your health care team may suggest that you check your blood glucose more often than usual.

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.

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.

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.

Reference

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

American Diabetes Association • www.diabetes.org

Centers for Disease Control and Prevention • www.cdc.gov/diabetes

National Diabetes Education Program • http://ndep.nih.gov

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