

Diabetes in Pregnancy

Diabetes occurs when the body cannot make enough of the hormone insulin or cannot use the insulin it makes. Insulin is a hormone that allows sugar to enter the cells where it is turned into energy. When there is not enough insulin or the insulin the body makes is not working, sugar cannot get into the cells. This causes high levels of sugar in the blood. When diabetes is not treated, high levels of sugar can build up in the blood and damage blood vessels, eyes, kidneys and other organs.

About one in 100 women of childbearing age have diabetes before pregnancy (preexisting). Another two to four percent develop diabetes for the first time during pregnancy. This is called gestational diabetes and is one of the most common problems of pregnancy. You may be more likely than other women to develop gestational diabetes during pregnancy if: you are 30 years or older; you are overweight or you have gained a lot of weight during pregnancy; you have a family history of diabetes (one or more of your family members has diabetes); you are African-American, Native American, Asian, Hispanic or Pacific Islander (these ethnic groups are more likely to have gestational diabetes than other groups); you had gestational diabetes in a previous pregnancy; or in your last pregnancy, you gave birth to a baby who weighed more than 9 ½ pounds or was stillborn. Even women without any of these risk factors can develop gestational diabetes. This is why we test you during pregnancy to see if you have this condition.

If you are diagnosed with diabetes, it is very important to keep the blood sugar levels as close to normal as possible, in order to lower the risks for the mother and her unborn baby. When blood sugars are kept at the normal level, the chance of having a successful pregnancy is about the same as a non-diabetic woman.

To keep blood sugar in the normal range, a special meal plan is essential and may need to be changed as pregnancy progresses. The number of calories, how much and what types of food you should eat will depend on many factors, including height, weight, stage of pregnancy, and the baby's growth rate. Exercise can help by allowing your body to better use the insulin. Most women can keep blood sugar at the normal level with diet and exercise. Some women need insulin injections.

You will check your blood sugar several times a day using a small drop of blood from your finger and a special meter. The results of these daily tests will help us fine tune your treatment and better control your blood sugar.

Your blood sugar targets (mg/dl):

Before breakfast: 65 – 95 or _____

1 hour after meals: 110- 140 or _____

2 hours after meals: 65 – 120 or _____

After bedtime snack: Use 1 hour or 2 hour goals as above

Check your blood sugar at the times indicated below:

_____ Before breakfast

_____ Afterbreakfast __ 1 hour __ 2 hours

_____ Afterlunch __ 1 hour __ 2 hours

_____ Afterdinner __ 1 hour __ 2 hours

_____ Before bedtime or after snack __ Yes __ No

Gestational diabetes usually goes away after you give birth. But if you have it in one pregnancy, you are more likely to have it in your next pregnancy. You are also more likely to develop diabetes later in life. We recommend that our patients remain active, eat healthy foods that are low in sugar, and maintain a lowerbody weight so that you may reduce your chances of developing diabetes later in life.

Controlling Diabetes

The first step in treating gestational diabetes is to modify your diet to help keep your blood sugar level in the normal range, while still eating a healthy diet. Most women with well-controlled blood sugar deliver healthy babies without any complications.

One way of keeping your blood sugar levels in normal range is by monitoring the amount of carbohydrates in your diet. Carbohydrate foods digest and turn into blood glucose (a type of sugar). Glucose in the blood is necessary because it is the fuel for your body and nourishment your baby receives from you. However, it's important that glucose levels stay within target.

Carbohydrates in Food

Carbohydrates are found in the following foods:

- Milk and yogurt
- Fruits and juices
- Rice, grains, cereals and pasta
- Breads, tortillas, crackers, bagels and rolls

- Dried beans, split peas and lentils
- Potatoes, corn, yams, peas and winter squash

Sweets and desserts, such as sugar, honey, syrups, pastries, cookies, soda and candy also typically have large amounts of carbohydrate.

Carbohydrates in foods are measured in units called grams. You can count how many carbohydrates are in foods by reading food labels and learning the exchange lists. The two most important pieces of information on food labels for a carbohydrate-controlled diet is the serving size and grams of total carbohydrate in each serving.

Dietary Recommendations

The following are dietary recommendations that will help you maintain safe blood sugar levels:

- **Distribute your foods between three meals and two or three snacks each day.** Eat small, frequent meals (about every 3 hours, and include a good source of protein). Eating too much at one time can cause your blood sugar to rise too much. It is very important that you do not skip meals. During pregnancy, you have increased nutritional needs and your baby requires balanced nutrition.
- **Include a good source of protein in your meals.** Low-fat meat, chicken, fish, low-fat cheese, nuts, peanut butter, cottage cheese, eggs, or turkey are good choices to include at every meal and snack.
- **Eat reasonable portions of starch.** Starchy foods eventually turn into glucose so it's important not to be excessive. However, starch should be included in every meal. A reasonable portion is about one cup of total starch per meal, or two pieces of bread.
- **Drink one cup of milk at a time.** Milk is a healthy food and an important source of calcium. However, milk is a liquid form of carbohydrate and drinking too much at one time can raise your blood sugar.
- **Limit fruit portions.** Fruit is a healthy food, but it is high in natural sugars. You may eat one to three portions of fruit per day, but only eat one at a time. A portion of fruit is either one very small piece of fruit, half of a large piece of fruit, or about one-half cup of mixed fruit. Do not eat fruit that has been canned in syrup.
- **Breakfast matters: Eat a small breakfast.** Blood sugar can be difficult to control in the morning because of normal fluctuations in hormone levels. Refined cereals, fruits and even milk may not be well tolerated in your morning meal. If your post-breakfast blood sugar level increases too much after having these foods, then you should not eat them for your breakfast. A breakfast that consists of starch plus protein is usually tolerated the best.
- **Avoid fruit juice.** It takes several fruits to make a glass of juice. Juice is a concentrated source of carbohydrate. Because it is liquid, juice can raise blood sugar quickly.
- **Choose high fiber foods.** Whole grain breads and cereals, beans and legumes, fresh and frozen vegetables are good choices.
- **Strictly limit sweets and desserts.** Cakes, cookies, candies and pastries tend to have excessive amounts of carbohydrate. These foods often contain large amounts of fat and offer very little in terms of nutrition. Additionally, avoid all regular sodas and sugar-sweetened beverages.

- **Stay away from added sugars.** Don't add sugar, honey or syrup to your foods.
- **Use artificial sweeteners instead of added sugars.** The following sweeteners have been approved as safe to eat during pregnancy: Aspartame (which includes Equal, NutraSweet and Natra Taste); Acesulfame K (which includes Sunett); Sucralose (which includes Splenda); and Rebaudioside A (which includes Stevia).
- **When a product says it is "sugar-free", take a closer look.** Products containing sugar-alcohols are often labeled "sugar-free," but they may still contain significant amounts of total carbohydrate. Look at the food label to see the grams of total carbohydrate contained. Sugar alcohols may have a laxative effect or cause gas and bloating. The following are examples of sugar-alcohols: Mannitol, Maltitol, Sorbitol, Xylitol, Isomalt, and Hydrogenated starch hydrolysate. Some products labeled "sugar-free" are indeed carbohydrate-free and will not affect your blood sugar, including diet sodas and sugar-free Jell-O.
- **Avoid convenience foods.** No instant noodles, canned soups, instant potatoes, frozen meals or packaged stuffing. These foods are very high in sodium.
- **Free Foods.** Eat the following vegetables as desired: cabbage, cucumber, radishes, green onions, mushrooms, zucchini, spinach, celery, green beans and lettuce.

KEEP A DIET LOG!

Writing down what, how much, and when you eat as well as the time and value of each blood sugar test is important! This will help you (and us) fine tune your diet and/or your care plan as your pregnancy progresses. Use a notebook to set up a log such as the one below.

If you require additional diet counseling we recommend the following registered dietitians:

- Laura Kovacs, MS, RD, CDN, CDE
212.241.9393
Email: Laura.Kovacs@mssm.edu
5 East 98th Street
- Elyse Sosin, RD
(212) 327-2989
- Tamara Freuman, RD
(212) 535-4500

-Drs. Adler, Kurtz, Kassenoff, Carranza, Cohen, Hernandez & Walia

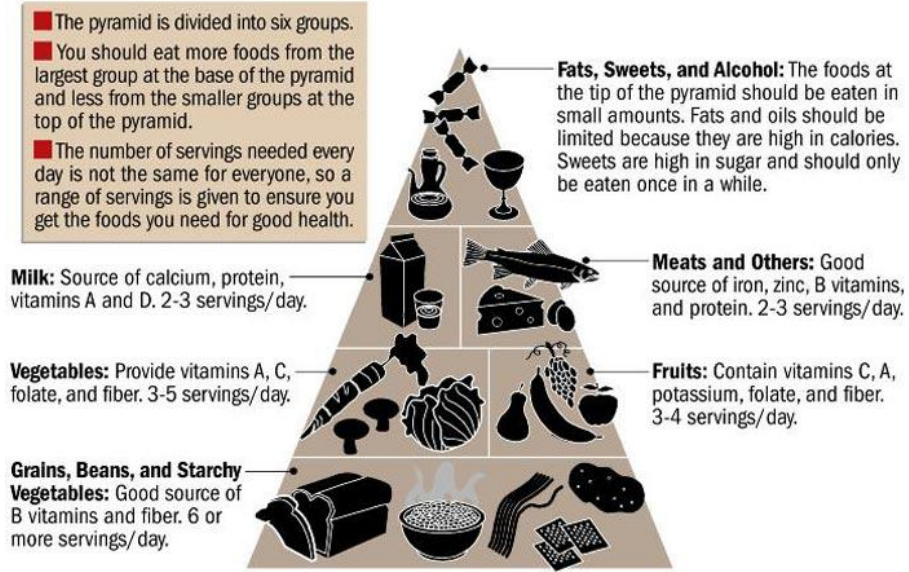
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Date	Breakfast	Lunch	Dinner	Snacks	Blood Sugar Time/Result
2/1/2019	<p style="text-align: center;">9am</p> Toast tsp butter 1 egg tea	<p style="text-align: center;">12 noon</p> 1 Burger 1 Bun Lettuce Tomato 1 pear	<p style="text-align: center;">6 pm</p> 3 oz steak 1 potato (med.) 1 cup broccoli 1 cup milk (1%) 2 T sour cream	<p style="text-align: center;">3 pm</p> 6crackers 1 oz cheese <p style="text-align: center;">9 pm</p> 4 crackers 2 T peanut butter	8:30 am/100 7:00pm/110
2/2/2019					
2/3/2019					

What is the Diabetes Food Pyramid?

The Diabetes Food Pyramid is a general guide of what and how much to eat each day. It is similar to the Food Pyramid you

see on many food packages. The food groups and suggested servings per day are listed below:



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Date	Breakfast	Lunch	Dinner	Snacks
