

# Healthy You:

A Guide to Diabetes Self-Care



## DIABETES AND PREGNANCY



# Healthy You: A Guide to Diabetes Self-Care

Edited by Shannon Knapp, BSN, RN, CDE

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## F O R E W O R D

Pregnancy is a time of joy and excitement, however at times can bring many challenges to the expecting mother. Gestational diabetes (diabetes diagnosed in pregnancy) can be one of these challenges, occurring in about 7-10% of all pregnancies in the United States. To learn that your pregnancy is complicated by gestational diabetes can be overwhelming and elicit numerous questions and concerns.

Women with preexisting diabetes (pregestational diabetes) also require special attention and careful monitoring throughout their pregnancies.

This book is intended to help answer many questions and alleviate some of the anxiety that can be associated with diabetes and pregnancy. I feel this book outlines a comprehensive multidisciplinary education plan that will be invaluable for both patients and the healthcare professionals assisting them in their self-management. My hope is that it can be used as an additional resource for all patients managing gestational diabetes or pregestational diabetes, and ultimately help to improve pregnancy outcomes for both mothers and babies.

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# Basics of Pregnancy and Diabetes

You have diabetes during pregnancy. Whether it is gestational diabetes, Type 1, or Type 2, it is normal to have many questions. The purpose of this book is to answer your questions and address your concerns about having diabetes during pregnancy. Working with your health care team to learn about diabetes and pregnancy will help you to achieve the most important thing for the health of both you and your baby...the best blood sugar (glucose) control possible.

## Who should be on my health care team during pregnancy?

In order to get the best blood sugar control, it is important to have the right people on your team. The following people can help you manage your blood sugar levels during pregnancy:

- High-risk obstetrician
- Endocrinologist
- Dietitian
- Nurse diabetes educator

## What is gestational diabetes?

Gestational diabetes is diabetes that starts during pregnancy, usually beginning in the second or third trimester. Diabetes causes the mother's blood sugar to be high and this high blood sugar can affect both the baby and the mother.

Gestational diabetes happens in one out of every 20 pregnancies. Most women diagnosed with gestational diabetes are able to control their blood sugar with diet and exercise. Some women may need medicine (insulin) to control blood sugar. Gestational diabetes usually goes away after pregnancy, but having gestational diabetes increases the risk of developing Type 2 diabetes later in life.

## What increases my risk of getting gestational diabetes?

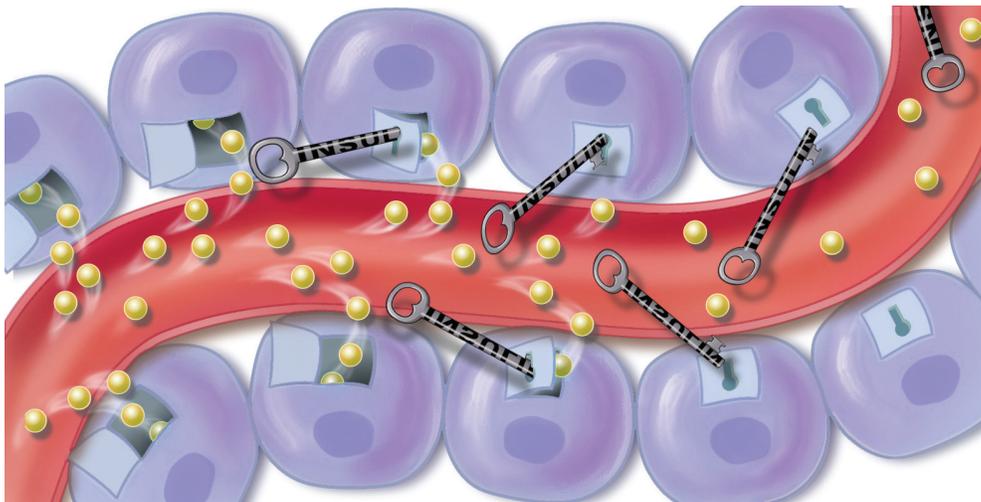
The following factors increase your chance of getting gestational diabetes:

- Being older than 35 years
- Being overweight
- Having a history of glucose intolerance
- Having a previous pregnancy with a baby larger than 9 pounds
- Having a family history of diabetes
- Having a history of polycystic ovarian syndrome

## Why does gestational diabetes happen?

Gestational diabetes occurs when there is not enough insulin being made by the mother. This causes the mother's blood sugar levels to be above normal. To understand gestational diabetes it is necessary to understand how insulin and sugar work in your body.

The pancreas is the organ that releases insulin. Insulin helps the body use sugar (glucose) for energy. Glucose in the blood comes from both food and your body's own natural release of stored glucose.



Legend: Yellow = Glucose, Keys = Insulin, Blue = Cells

Think of insulin as the “key” that opens the “doors” of the cells in your body. Once insulin opens the cell doors, sugar can leave the bloodstream and move into the cells where it will be used for energy. Without enough insulin, sugar can't get into the cells and instead builds up in the blood. Gestational diabetes is caused by the pregnant woman's changing hormone levels that cause her body to resist the action of insulin.

## How is gestational diabetes diagnosed?

Women with any risk factors for Type 2 diabetes are tested for gestational diabetes at the first prenatal visit. All other women without pre-existing diabetes are tested at 24 to 28 weeks gestation.

The test for gestational diabetes is called an oral glucose tolerance test, or OGTT. An OGTT involves the following:

- Drinking a liquid with a measured amount of sugar in it
- Bloodwork drawn after drinking the liquid

According to the American Diabetes Association's Standards of Medical Care in Diabetes – 2017, there are two ways to perform an OGTT: a one-step strategy or a two-step strategy.

In a one-step strategy, a woman's blood sugar is measured fasting, and then again one hour and two hours after drinking a measured amount of a very sweet liquid. If at least one of the three results in this 2-hour test are greater than or equal to the following numbers, a diagnosis of gestational diabetes is made:

Fasting	92 mg/dL
1 hour	180 mg/dL
2 hours	153 mg/dL

In a two-step strategy, a woman's blood sugar is measured one hour after drinking a measured amount of a very sweet liquid. If the blood sugar result for the one hour test is greater than or equal to 135 mg/dL, then a three-hour OGTT will be ordered. If at least two of the four results in this 3-hour test are greater than or equal to the following numbers, a diagnosis of gestational diabetes is made:

Fasting	95 mg/dL
1 hour	180 mg/dL
2 hours	155 mg/dL
3 hours	140 mg/dL

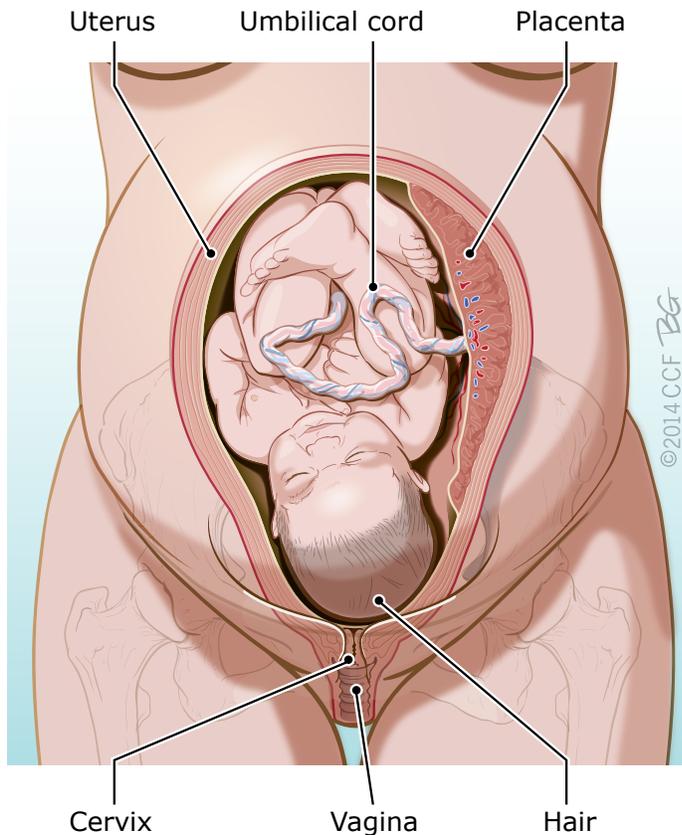
## What if I already have diabetes and then become pregnant?

Women with both Type 1 and Type 2 diabetes are able to have healthy pregnancies as long as blood sugar levels are well-controlled before, during, and after pregnancy. As with gestational diabetes, the most important part of a healthy pregnancy is good blood sugar levels.



## What is the role of the placenta?

During pregnancy, the placenta releases hormones. These hormones cause insulin resistance, which in turn requires more insulin to be made by the mother's pancreas.



- The placenta is an organ responsible for feeding and nourishing the baby.
- Hormones from the placenta increase insulin resistance in the mother.

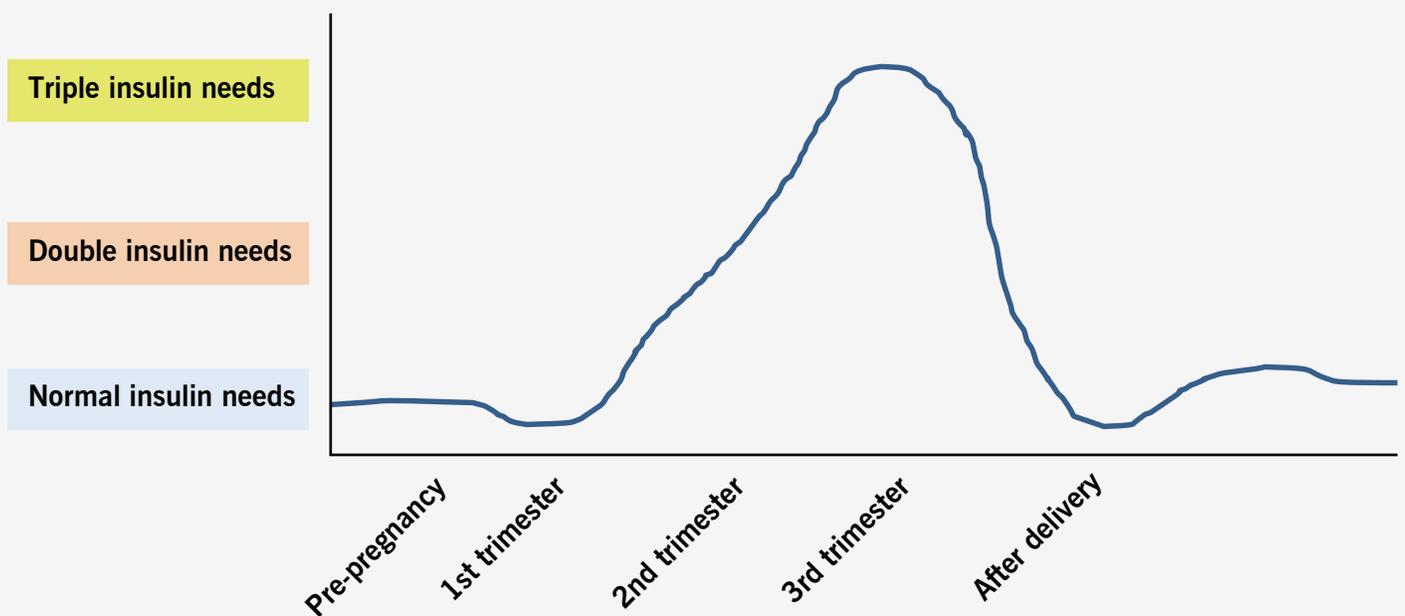
In the first three months of pregnancy, the body's insulin needs are similar to what they were before the pregnancy. But the mother's insulin needs increase throughout the pregnancy as hormone levels cause her body to resist the action of insulin. Beginning around 24 weeks, the amount of insulin needed often doubles. During the last three months of pregnancy, insulin needs may triple.

In women who do not have diabetes before pregnancy, gestational diabetes happens because their bodies are unable to respond to the increased insulin needs at 24 weeks. This causes blood sugar levels to increase. In gestational diabetes, the insulin needs of the mother usually return to normal after the baby is born.

Women who have diabetes before becoming pregnant manage their blood sugar levels during the entire pregnancy. The same hormones causing insulin resistance in gestational diabetes will cause insulin resistance in women who had diabetes before pregnancy. This insulin resistance will slowly increase their insulin needs throughout the pregnancy.

Women who were taking insulin before becoming pregnant often need three times that amount by the end of the pregnancy in order to keep their blood sugar levels in target. After the baby is delivered insulin needs often return to pre-pregnancy levels, or may be even lower if the mother is breast feeding.

## Changing Insulin Needs During Pregnancy



## What are the concerns for you and your baby?

Blood sugar levels that are higher than the target for pregnancy may cause problems for mother and baby.

In women who have diabetes before becoming pregnant, high blood sugar levels at conception and during the first trimester can affect the baby's organ development. This results in a higher risk for early miscarriage and birth defects.

When high blood sugar levels happen in the second and third trimester, the risks are different. These risks apply to all mothers with diabetes, whether they have gestational, Type 1, or Type 2. Throughout pregnancy, the mother's sugar travels to the baby and the baby makes his or her own insulin. The baby's insulin helps his or her body to use the mother's sugar for fuel. Any extra sugar that is not needed by the baby for energy will be stored in the baby's body as fat. This will cause the baby to grow too big during the second and third trimesters.

High blood sugar levels during pregnancy can lead to risks for the baby including:

- A baby larger than 9 pounds
- Harder delivery
- Higher risk for a cesarean section
- Shoulder injury to the baby during delivery
- Increased chance for obesity and diabetes later in life
- Respiratory distress syndrome

Careful control of blood sugar levels remains important during labor. Without good control at this crucial time, the baby could develop a high insulin level as a result of a high blood sugar level in the mother. If this happens, the baby's blood sugar can drop very low after birth since the sugar supply from the mother ends at that time. This low blood sugar is called hypoglycemia. If this should happen, the nurse will have your baby breast feed or bottle feed to increase the baby's blood sugar level.

High blood sugar levels during pregnancy and labor can lead to other risks for the mother including:

- High blood pressure
- Swelling
- Early labor
- Higher risk for type 2 diabetes later in life

Because of the risks to both the baby and mother, blood sugar management becomes the main goal for all pregnant women with diabetes. Education, meal planning, physical activity, blood sugar monitoring, and possibly medications are important for good blood sugar control.

## **Can my baby's health be measured before birth?**

You may hear your health care provider refer to your pregnancy as “high risk.” Having any type of diabetes during pregnancy makes it high risk. Keeping blood sugar levels in the target ranges during pregnancy will lower the risks. But high blood sugars do increase the risk of complications to both you and your baby.

Your health care team will monitor your baby's health and check for complications through antepartum testing. Speak with your obstetric health care provider for specific instructions. Examples of antepartum testing your obstetrician may order include:

- Fetal echocardiogram
- Baby kick counts
- Non-stress test (NST)
- Biophysical profile (BPP)



## What are the benefits of regular physical activity?

With approval from your obstetrician, regular physical activity can provide the following benefits during and after your pregnancy:

- Improve your mood and energy level
- Help you sleep better
- Prepare your body for labor and delivery
- Help with weight loss after delivery
- Help your body use insulin better

If you have high blood sugar levels after a meal, try taking a walk to help bring your blood sugar down. The amount and type of physical activity that is right for you depends on your general health and how active you were before you became pregnant. Walking, water aerobics, yoga, and prenatal exercise classes are good ways to stay active during pregnancy. If you have not been exercising, begin with a 10 to 15 minute walk a day. The goal is at least 30 minutes of physical activity most days of the week. Always check with your health care provider before starting or continuing any type of physical activity during pregnancy.





## Nutrition for Diabetes and Pregnancy

Healthy eating during pregnancy is important, especially if you have diabetes. You and your baby need a certain amount of nutrients for proper weight gain, to help control your blood sugars, and for overall health.

### **Food contains 3 main nutrients: Carbohydrates | Protein | Fat**

Although all of these nutrients impact your blood sugar, carbohydrates raise it the most because they turn into glucose (sugar) in the body. Whatever you eat, the goal is to get your blood sugar within your target range.

Having diabetes does not mean that you have to give up all of the foods you like, or that you should eliminate any of the above nutrients. It means that you should follow a healthy meal plan that includes a variety of foods. It will be important to understand portion sizes and how much to eat at one time.

# All About Carbohydrates

## What are carbohydrates?

Carbohydrates (carbs) are your body's main source of energy. Not eating enough carbohydrates can keep you and your baby from getting the right amount of nutrition. Carbs are needed for your baby's brain development and to help him or her grow. When you are pregnant, you need at least 175 grams of carbohydrate per day.

Not eating the right amount of carbohydrates can cause your body to produce "starvation ketones." Ketones are a substance your body makes when it breaks down fat instead of carbohydrates for energy. Ketone production during pregnancy may be harmful to the health of the your baby.

Eating the right amount of carbohydrates is the key. If you eat more carbs than your body can handle, the glucose from them will stay in the blood stream and your blood sugar will be too high. If you take medication for diabetes (pills or insulin) but don't eat enough carbohydrates, your blood sugar can go too low.

Eating healthy foods that give your body the right amount of carbohydrates at every meal and snack is one of the best ways to control your blood sugar levels. Healthy food choices include whole grains, vegetables, fruits, low-fat dairy foods, lean protein, and heart healthy fats. Carb counting is an easy way to make sure you are eating the right amount.



## Common foods that contain carbohydrates:

<b>Starches</b>	Bread, cereal, pasta, rice, noodles, potatoes, corn, peas, crackers, black and red beans, lentils, popcorn, etc.
<b>Fruits</b>	Fresh fruit, fruit juice, canned fruit, dried fruit
<b>Milk</b>	Milk, yogurt
<b>Sweets and desserts</b>	Cookies, ice cream, candy, smoothies, snack foods
<b>Beverages</b>	Any sweetened drinks

### How much carbohydrate do I need?

Eating smaller meals and snacks with the right amount of carbohydrates can help you to control your blood sugar levels. A Registered Dietitian (RD), can create an individualized meal plan for you. Before your visit with the RD, you can use the following guidelines to get started:

#### Main meals should be 4-6 hours apart

<b>Breakfast:</b>	2 Carb Choices (30 grams) *	<b>Protein with every meal and snack</b>
<b>Morning Snack:</b>	1-2 Carb Choices (15-30 grams)	
<b>Lunch:</b>	3-4 Carb Choices (45-60 grams)	
<b>Afternoon Snack:</b>	1-2 Carb Choices (15-30 grams)	
<b>Dinner:</b>	3-4 Carb Choices (45-60 grams)	
<b>Evening Snack:</b>	2 Carb Choices (30 grams)	

\*One of the hardest times of day to control blood sugar is after breakfast. This is because your body produces a higher amount of certain hormones in the morning. As a result, breakfast is usually smaller than lunch and dinner.

## Are all carbohydrates the same?

Certain foods can increase your blood sugar more than others, even if these foods have the same amount of carbohydrates. Some examples of foods that could increase your blood sugar levels more than others are:

- Breakfast cereals
- Sweetened beverages such as fruit juice
- White rice, potatoes, and pasta
- Pizza
- Fast food

It is important to work closely with your dietitian so he or she can help create a meal plan specifically for you. Being aware of how different types of carbohydrate affect your blood sugar is necessary to help you achieve good blood sugar control. Your food and blood sugar logs will help you and your dietitian identify the foods that will work best for you.

## How do I count carbohydrates?

You can count carbohydrate grams or carbohydrate choices. There are several tools that can be used to determine the number of carb grams or carb choices in the foods you eat:

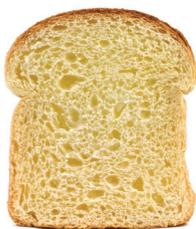
- The Nutrition Facts label on the package
- A brochure or book that lists foods and their portions sizes
- The Internet or smartphone applications

## What is a carbohydrate choice?

**One carbohydrate choice = 15 grams of carbohydrate.**

Below are examples of one carbohydrate choice or 15 grams of carbs:

- grains/starches - **1 slice of bread**
- fruits - **1 small apple**
- milk - **1 cup of milk**
- sweets - **½ cup of ice cream**



**Most meats and fats do not have any carbs in them so do not count them.**

## How do I use nutrition information to count carbohydrates?

Serving size



Total Carbohydrate



### Homestyle Potato Casserole

#### Nutrition Facts

Serving Size **1 cup** (120g)  
Servings per container: 8

#### Amount Per Serving

**Calories** 180

Calories from Fat 20

% Daily Value\*

**Total Fat 2.5mg** 4%

Saturated Fat 1g 4%

**Cholesterol 10mg** 4%

**Sodium 430mg** 18%

**Total Carbohydrate 34g** 11%

Dietary Fiber 2g 3%

Sugars 3g

Other Carbohydrate 30g

#### Protein 7g

Vitamin A 0% • Vitamin C 0%

Calcium 4% • Iron 8%

Thiamin 15% • Riboflavin 10%

Niacin 8%

\*Percent Daily Values (DV) 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 Carb.		300g	375g	
Dietary fiber		25g	30g	

Calories per gram:

Fat 9 • Carbohydrate 4 • Protein 4

**Ingredients:** Water, enriched flour (flour, niacin, iron, thiamin, riboflavin, folic acid), dehydrated potatoes (potatoes, mono and diglycerides, sodium and pyrophosphate, citric acid), dehydrated cheese, eggs, margarine, salt, dehydrated onions, spices.

1. Look at the **servings size**. If you are eating more or less than the serving size listed, then adjust the number of carb grams you are counting.

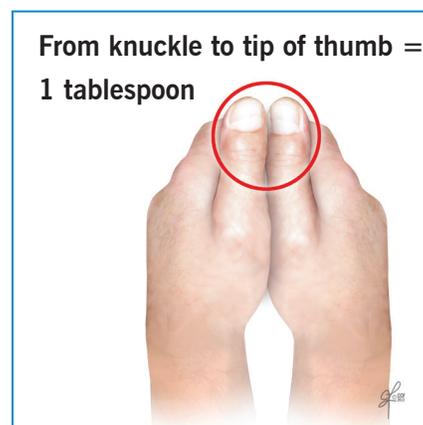
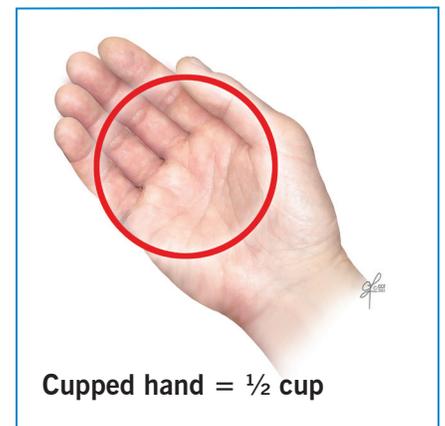
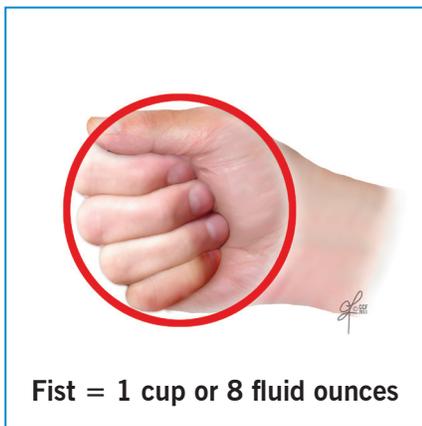
2. Look at the **total carbohydrate** grams (g). Do not look at sugar grams. If your carb target is in grams, then the number listed is the amount of grams for this food. If your target is in choices, then go to step 3.

3. Divide the carb grams by 15 to determine the number of carb choices to count for this food. You can also use the chart on the next page to determine the number of carb choices.

To count the number of carbohydrate choices in a particular serving, refer to the table below.

<b>Grams of carbohydrate:</b>	<b>Carbohydrate choices:</b>
0-5	Do not count
6-10	½ carbohydrate choice
11-20	1 carbohydrate choice
21-25	1½ carbohydrate choices
26-35	2 carbohydrate choices
36-40	2½ carbohydrate choices
41-50	3 carbohydrate choices
51-55	3½ carbohydrate choices
56-65	4 carbohydrate choices

When you don't have measuring utensils, you can use your hands. The "hand method" provides an easy way to decide what is a reasonable portion of food. The portion sizes use an adult hand as a guide.



## How many carbs are in some of the foods we commonly eat?

On the following pages, you will find estimated carb grams and choices for some common foods.

### STARCHY FOODS

#### One serving = 1 carb choice (15 grams)

- 1 slice bread
- 2 slices low calorie bread
- ½ cup cooked oatmeal
- ½ cup cooked grits
- ¼ cup granola
- ¼ cup cooked couscous
- ⅓ cup cooked pasta or rice (1 cup = 3 carb choices or 45 grams)
- ⅓ cup cooked wild rice
- ¾ cup unsweetened cereal
- 1 frozen waffle or pancake
- 2 hard taco shells or 1 6-inch tortilla

#### One serving = 2 carb choices (30 grams)

- 1 English muffin
- 1 hot dog/hamburger bun
- 1 pita bread
- 1 medium roll

#### One serving = 4 carb choices (60 grams)

- 1 bagel (bakery size)

## BEANS, PEAS, LENTILS

### One serving = 1 carb choice (15 grams)

- 1/3 cup baked beans
- 1/2 cup beans, cooked  
(black, garbanzo, kidney, lima, pinto, white, navy)
- 1/2 cup lentils, cooked (brown, green, yellow)
- 1/2 cup peas, cooked (black-eyed, split)
- 1/2 cup refried beans

## STARCHY VEGETABLES

### One serving = 1 carb choice (15 grams)

- 1/2 cup corn or peas
- 1/2 cup mashed potatoes
- 1 cup mixed vegetables (with corn/peas/pasta)
- 1 cup winter squash (acorn or butternut)
- 1/2 cup spaghetti sauce

### One serving = 2 carb choices (30 grams)

- 1 ear of corn
- 1 medium potato or sweet potato (6 ounces)

### One serving = 4 carb choices (60 grams)

- 1 large potato or sweet potato (12 ounces)
- Fries (medium to large fast food fries)

## NON-STARCHY VEGETABLES

**One serving = 5 grams (less than one carb choice)**

**One serving = 1 cup raw or 1/2 cup cooked**

Non-starchy vegetables are some of the most important foods to include at meals. These foods are low in calories, fill you up, increase your fiber intake, and have little effect on raising blood sugar. Including a variety of vegetables is an important part of successful long-term weight loss.

**Listed below are types of non-starchy vegetables:**

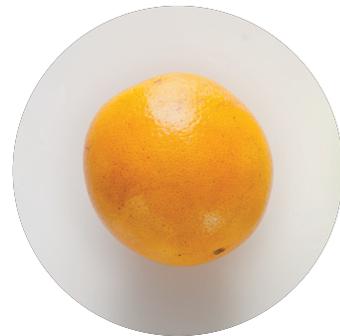
Asparagus	Eggplant	Pea Pods
Baby Corn	Green Onions or Scallions	Peppers
Bamboo Shoots	Greens (Collard, Kale, Mustard, Turnip)	Rutabaga
Bean Sprouts	Jicama	Sauerkraut
Beans (Green, Wax, Italian)	Kohlrabi	Soybean Sprouts
Beets	Leeks	Spinach
Broccoli	Mixed Vegetables, without Corn, or Peas, or Pasta	Squash (Summer, Crookneck, Zucchini)
Brussels Sprouts	Bean Sprouts	Sugar Snap Peas
Cabbage	Mushrooms	Swiss Chard
Carrots	Okra	Tomatoes
Cauliflower	Onions	Turnips
Celery		Water Chestnuts
Chayote		Yardlong Beans
Cucumber		
Daikon		

Source: Choose Your Food: Exchange List. (2008) American Diabetes Association/American Dietetic Association.

## FRUITS

### One serving = 1 carb choice (15 grams)

- 1 small apple / orange / peach / pear / nectarine  
(the size of a tennis ball, 4 ounces when weighed with skin/core/peel)
- $\frac{3}{4}$  cup blueberries/blackberries
- 1 cup raspberries
- 6 strawberries or  $1\frac{1}{4}$  cup
- $1\frac{1}{4}$  cup watermelon or one slice
- 1 cup cantaloupe or honeydew melon
- 12 to 17 grapes or  $\frac{1}{2}$  cup
- 12 cherries or  $\frac{1}{2}$  cup
- 2 Tbsp dried fruit
- 4 apricots (fresh or dried)
- 1 kiwi
- $\frac{3}{4}$  cup fresh pineapple
- $\frac{1}{2}$  cup of light canned fruit
- $\frac{1}{2}$  cup fruit juice
- 3 dates or prunes



### One serving = 2 carb choices (30 grams)

- 1 large apple / orange / peach / pear / nectarine  
(8 ounces when weighed with skin/core/peel)
- 1 banana (8 ounces with peel)
- 1 mango or papaya
- 1 whole grapefruit



## DAIRY

### One serving = about 1 carb choice (12 grams)

- 1 cup milk (skim, 1%, 2%, Whole)
- 1 cup soy, lactose-free, or rice milk
- 1 light or sugar-free yogurt

### One serving = about 2 carb choices (25-30 grams)

- 1 cup chocolate milk
- $\frac{3}{4}$  cup non-fat yogurt



## SWEETS OR DESSERTS

### One serving = 1 carb choice (15 grams)

- 1 small brownie (2 inch piece)
- 2 small cookies (2 inch)
- ½ cup sugar-free pudding
- ½ cup ice cream (vanilla, chocolate)
- ½ cup frozen yogurt
- 1 frozen fruit bar (3 ounces)
- 1 piece cake without frosting (2 inch piece)

### One serving = 2 carb choices (30 grams)

- 1 glazed doughnut
- 1 slice banana / fruit / zucchini bread
- ½ cup regular pudding
- ½ cup sherbet
- 1 piece frosted cake (2 inch piece)

### One serving = 3 carb choices (45 grams)

- ½ cup fruit cobbler
- ½ fruit pie
- 1 glazed cake doughnut

### One serving = 4 carb choices (60 grams)

- 1 large muffin

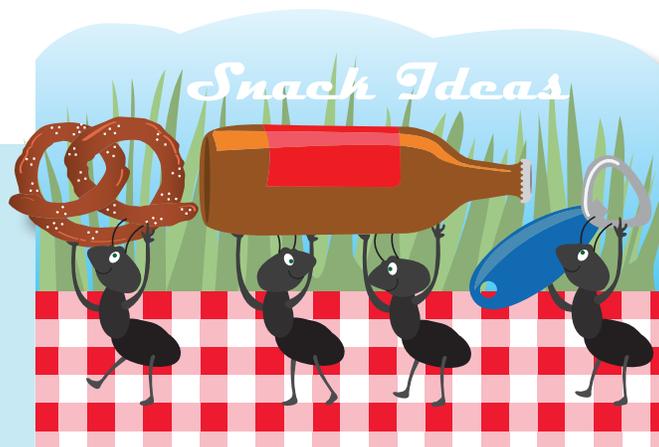
## SNACK FOODS

### One serving = 1 carb choice (15 grams)

- 3 cups air-popped popcorn (without butter)
- 1 oz. baked chips (about 17)
- 1 cup berries
- 2 small cookies (2 inch)
- ½ cup sugar-free pudding
- ½ cup low-fat ice cream
- 3 ginger snaps or vanilla wafers

### One serving = 2 carb choices (30 grams)

- 1 medium granola bar
- 25 mini crackers
- 1 small bagel (2 ounces)
- 1 medium banana (8 ounces)
- ½ cup regular pudding
- ¾ cup low-carb cereal with 1 cup low-fat milk



## OTHER CARBOHYDRATES

### One serving = 1 carb choice (15 grams)

- Coffee creamer (flavored) (2 Tbsp liquid or 2 Tbsp dry)
- 1½ Tbsp fruit spread (100% fruit)
- 1 Tbsp jam or jelly
- 1 Tbsp honey
- 1 Tbsp sugar (brown/white)
- 1 Tbsp chocolate syrup
- 1 Tbsp syrup (regular)
- 2 Tbsp syrup (light)
- 2 Tbsp barbecue sauce
- 2 Tbsp sweet and sour sauce
- 3 Tbsp ketchup
- ½ cup gravy = ½ carb choice (7 grams)
- 2 Tbsp of sweetened salad dressing  
(French, honey mustard)
- ½ cup spaghetti sauce



## Other Nutrients

### What about protein and fat?

You have learned that food contains three main nutrients: carbs, protein, and fat. Now that you know how to count your carbs, you may be wondering about the other nutrients. Although protein and fat can impact your blood sugar, they do not affect it nearly as much as carbs. These two nutrients can, however, impact calories and heart health. Protein and fat are not usually counted for blood sugar management, but portion control and good choices are still important for healthy eating.

Protein is one of the three main nutrients in food. When you are pregnant, you need more protein. Meeting with a Registered Dietitian (RD) will help you to determine exactly how much protein you need every day.

Eating a healthy source of protein at every meal and most daily snacks will help you get the protein you and your baby need. Eating protein foods will also help to keep you feeling more satisfied when eating controlled portions of carbohydrates.



## **P r o t e i n s**

### **Here are some tips for choosing and preparing proteins:**

- Choose lean proteins (see the list that follows).
- Trim any visible fat from meat.
- Remove skin from poultry.
- Choose baking, grilling, or broiling instead of frying.
- Try low sodium broth instead of gravies or sauces.
- Aim for a serving size of meat that is equal to a deck of cards.

### **Here are some examples of lean proteins:**

- Chicken and turkey
- Fish (refer to the Food Safety section for specific instructions)
- Lean pork chops
- Canadian bacon or turkey sausage/bacon
- Low fat cottage cheese
- Low fat cheeses (3 grams of fat or less per serving)
- Egg whites
- Extra lean ground beef (93% lean), sirloin, or New York strip steak
- Beans or legumes (1/2 cup also counts as 1 carb choice or 15g of carb)
- Tofu

## **F a t s**

Fat is another one of the three main nutrients in foods. Fat requirements often increase slightly when you are pregnant. It is important to remember that dietary fat adds more calories than carbohydrates and proteins. But like protein, fat will help you to feel more satisfied at meals when eating controlled portions of carbohydrates. Eating healthy sources of fat at meals is important to help you get the right nutrients you need during pregnancy.

Most meals already include some fat, so when adding fat to meals do so in very small amounts. Meeting with the dietitian will help you to know exactly how much to have each day. Below is a list of sources of fat in foods:

## CHOOSE MORE OFTEN

- Olive oil (1 teaspoon)
- Canola oil (1 teaspoon)
- Nuts (1 ounce)
- Avocado (2 tablespoons)
- Soybean or corn oil (1 teaspoon)
- Oily fish (salmon, trout)
- Olive oil based margarine (1 teaspoon)

## LIMIT

- Butter (1 teaspoon)
- Cream (2 tablespoons)
- Whole milk
- French Fries
- Red meat
- Dessert (cake, ice cream)
- Animal skin (chicken, turkey)

## AVOID

- Trans fats, often found in:
  - Donuts
  - Bakery foods
  - Some packaged snacks and candies
  - Vegetable shortening
  - Stick margarine

## What can I eat that will not raise my blood sugar?

Foods with fewer than 5 grams of carbohydrate are considered “free” foods. These include sugar-free beverages, spices, and seasonings.

**A word of caution: “dietetic,” “diabetic,” “no-sugar-added,” and “low-carb” foods are not necessarily carbohydrate-free or low in calories. Please read food labels carefully. Listed below are some examples of foods that are truly “carb-free”.**

### Carb-Free Foods:

- Horseradish
- Lemon and Lime Juice
- Miso
- Mustard
- Pickle Relish
- Dill Pickles
- Salsa
- Soy Sauce, Light or Regular
- Sweet Chili Sauce
- Taco Sauce
- Vinegar

## Are there any minerals or nutrients that are important to include in my meal plan for pregnancy?

Minerals are essential nutrients that are needed in small amounts to keep you healthy and help your body work well. Foods high in iron, calcium, and magnesium are important to include in your meal plan while pregnant.

### **I r o n**

Iron helps carry oxygen throughout your body. Not enough iron can make you feel tired and run-down.

#### **Foods High in Iron**

- Red meat
- Eggs
- 100% Iron-fortified cereal
- Instant oatmeal
- Cream of Wheat
- Grits (instant)
- Dark, leafy vegetables
- Soybeans (cooked)
- Lentils
- Kidney beans

- Iron from meat is better absorbed than iron from plant foods.
- Eating foods high in vitamin C (citrus juice/fruits, melons, dark leafy vegetables, potatoes) will help your body absorb more iron.
- Coffee and tea will limit iron absorption so avoid coffee and tea at mealtimes.
- If you follow a vegetarian diet, meet with a registered dietitian (RD) to learn how to get enough iron during your pregnancy.

## **Folate/Folic Acid**

Folic acid (folate) is used to make the extra blood your body needs during pregnancy. It also helps prevent neural tube defects (serious birth defects of the spinal cord and brain). The increased need for folic acid during pregnancy may be difficult to achieve through diet alone. Your health care provider will recommend a prenatal vitamin supplement to ensure than you obtain enough folic acid and other nutrients.

### **Foods High in Folic Acid**

- Green leafy vegetables (spinach, romaine lettuce, kale, broccoli)
- Lentils
- Beans (navy, black, kidney, pinto, garbanzo)
- Citrus fruits
- Nuts

## **Magnesium**

Magnesium is a mineral that your body uses to form bone, protein, and fatty acids. It can help to prevent premature contractions by relaxing the muscles of the uterus.

### **Foods High in Magnesium**

- Beans
- Soy
- Whole grains, including bran
- Nuts (almonds, walnuts, Brazil nuts)
- Seeds (flaxseeds, pumpkin seeds, sesame, sunflower)
- Dry cocoa powder and dark chocolate

## **F i b e r**

Dietary fiber is the part of food that is not broken down in the body.

It has several benefits during pregnancy. Fiber can:

- Prevent constipation
- Help you to feel fuller after meals
- Possibly lower your blood sugar
- Lower blood pressure

### **Foods High in Fiber**

- Some cereals (ex: All Bran, Fiber One, Raisin Bran, Mini Wheats)
- Beans (kidney, navy, pinto, black)
- Lentils
- Brussel sprouts
- Okra

Use the following tips to increase your fiber intake:

- Add fiber gradually and drink plenty of water to prevent constipation.
- Choose whole grain foods.
- Choose fresh fruits and vegetables.
- Do not peel fresh fruits and vegetables.
- Add beans, peas, and lentils to soups, stews, and salads.
- Top casseroles with wheat germ or bran.



# Weight Management

## How many extra calories do I need during pregnancy?

You need about 300 additional calories per day from nutrient-dense foods during pregnancy compared to when you are not pregnant.

## How much weight should I gain during pregnancy?

There are several benefits to gaining the ideal amount of weight during pregnancy:

- Provides nourishment to help baby grow
- Helps with blood sugar control
- Helps with your weight loss after baby is born

The specific number of pounds you should gain during pregnancy depends on your pre-pregnancy weight. Below are some general guidelines for weight gain during pregnancy based on pre-pregnancy weight:

- Underweight: 28-40 pounds
- Normal weight: 25-35 pounds
- Overweight: 15-25 pounds
- Obese: 11-20 pounds

If you are pregnant with more than one baby, you will likely need to gain more weight than for a single baby. Talk with your health care provider about how much weight gain is right for you. A registered dietitian can help you develop a healthy eating plan to meet your needs.



# Food Safety

## Are there any foods I should avoid while I am pregnant?

Hormonal changes during pregnancy can weaken your immune system. This puts you at greater risk for contracting a foodborne illness. Listeria and other types of bacteria can cause premature delivery or miscarriage. Avoid the following foods to decrease your chances of contracting a foodborne illness:

- Hot dogs, deli/luncheon meats, cold cuts, and deli salads
- Sushi
- Rare or undercooked meat and poultry
- Raw eggs
- Raw sprouts
- Unpasteurized (raw) milk
- Soft cheese made with unpasteurized milk
- Mayonnaise
- Unpasteurized apple cider and apple juice

Another food of concern for pregnant women is fish. Fish can be a healthy choice that includes protein and healthy fats. But some fish contains high levels of mercury. Eating these types of fish during pregnancy has been associated with brain damage and developmental delay in babies.

High-mercury fish to avoid include the following:

- Shark
- Swordfish
- King mackerel
- Tile fish

Up to 12 ounces of low-mercury fish per week is considered safe in pregnancy. If you enjoy tuna, note that albacore tuna is higher in mercury than traditional tuna and should be limited to no more than 6 ounces per week.

Here are some other things that can be harmful to your baby so should be avoided during pregnancy:

- Herbal teas (unless cleared by your dietitian)
- Alcohol

Other foods should be limited during pregnancy but may be consumed in small amounts:

- Limit caffeine to no more than 200 mg per day (the amount in 12 ounces of coffee).
  - Tea, pop, and energy drinks also contain caffeine.
- Artificial sweeteners – discuss types and amounts with your dietitian.
  - Examples include saccharin, aspartame, sucralose, acesulfame K, and neotame.



# Sample Menus

## Traditional American

Day 1

### Breakfast:

- 2-egg white omelet with 1 ounce of cheese
- 2 slices whole wheat toast

### Morning Snack:

- 1 Greek yogurt
- 1 medium apple

### Lunch:

- 1 cup chicken soup
- 5-6 crackers
- ½ cup red grapes

### Afternoon Snack:

- 2 rice cakes
- 2 Tbsp. peanut butter

### Dinner:

- ⅓ cup brown rice
- ½ cup black beans
- 1 six-inch tortilla
- 1 ounce shredded cheddar cheese
- ½ cup sautéed mixed peppers

### Evening Snack:

- 1 cup milk
- 3 graham cracker squares

## Traditional American

**Breakfast:**

- 1 whole wheat English muffin
- 1 Tbsp. peanut butter

**Morning Snack:**

- 10-12 crackers
- 1 ounce cheese

**Lunch:**

- 2 cups mixed salad greens
- 2 Tbsp. dressing
- 2 Tbsp. dried cranberries
- 1 medium sweet potato
- 3 ounces lean beef

**Afternoon Snack:**

- 1 cup milk
- 1 small granola bar

**Dinner:**

- 1 cup whole wheat pasta
- 1 cup steamed green beans
- 3 ounces baked chicken

**Evening Snack:**

- 1 cup Mandarin orange slices
- ½ cup reduced fat cottage cheese

**Breakfast 30g | AM snack 15-30g | Lunch 45-60g | PM snack 15-30g**  
**Dinner 45-60g | Bedtime snack 30g**

**Breakfast:**

- 1 slice whole-grain toast
- 1 egg scrambled with 1 ounce cheese
- 2 tsp margarine
- 1 cup skim milk

**Morning Snack:**

- 10-12 crackers
- 1 Tablespoon peanut butter

**Lunch:**

- Sandwich with 2 slices whole-grain bread, 3 ounces lean beef, and 1 Tbsp. mayonnaise
- 1 small apple
- Carrot and celery sticks

**Afternoon Snack:**

- 3 cups popcorn
- 1 small orange
- 1 ounce string cheese

**Dinner:**

- 3 ounces baked chicken breast
- 4 inch baked potato
- 2 Tbsp. sour cream
- Cooked broccoli
- Small green salad with 2 Tbsp. vinaigrette
- 1 cup skim milk

**Evening Snack:**

- 8 ounces Greek yogurt
- 1 cup blueberries

### Breakfast:

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- 1 ten-inch dosa
- 1 Tbsp. chutney
- 1 egg

### Morning Snack:

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- 1 cup tea with milk
- 1 small piece barfi

### Lunch:

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- ½ cup basmati rice
- ¼ cup dhal
- ½ orange
- ½ cup yogurt with cucumber

### Afternoon Snack:

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- 1 ½ cups sweet lassi

### Dinner:

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- 1 ½ cups curried chicken and vegetable stew (2 ounces chicken per serving)
- 1 six-inch chapatti
- 1 cup saag

### Evening Snack:

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- 1 cup tea with milk
- 1 medium apple

**Breakfast 30g | AM snack 15-30g | Lunch 45-60g | PM snack 15-30g**  
**Dinner 45-60g | Bedtime snack 30g**

### Breakfast:

---

- 1/3 cup garlic rice with egg omelette & tomatoes
- 1/2 slice mango
- 8 ounces soy milk

### Morning Snack:

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- 1/2 cup steamed sweet rice with coconut flakes

### Lunch:

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- Asian salad:
  - broccoli slaw
  - red & green pepper
  - 1/4 cup Mandarin orange
  - 2 Tbsp. Asian dressing
  - 2-4 Tbsp. roasted almonds
- 4-6 pieces chicken & vegetable pot stickers with low-sodium soy sauce
- 3/4 cup strawberries

### Afternoon Snack:

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- 4 ounces pan fried sweet potato

### Dinner:

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- 3 ounces beef ribs
- 1 cup green beans with ginger sauce & sesame seeds
- 2/3 cup rice
- 1/2 cup jackfruit
- 8 ounces soy milk

### Evening Snack:

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- 8 ounces plain yogurt with pomegranite

## Sample Menu: Middle Eastern

### Breakfast:

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- 2 eggs cooked with 2 tsp. oil
- ½ pita bread
- 1 cup plain yogurt

### Morning Snack:

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- 10-12 whole grain crackers
- 1 ounce string cheese
- 6-7 nuts

### Lunch:

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- 4 ounces baked chicken
- 1 cup lentil soup
- 1 small orange
- Carrot sticks and cucumber slices
- 1 Tbsp. ranch dressing

### Afternoon Snack:

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- 1 banana
- 6-7 nuts

### Dinner:

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- 3 ounces grilled salmon
- 1 cup rice
- ½ pita bread
- 2 tsp. oil
- Green salad with 2 Tbsp. vinaigrette dressing

### Evening Snack:

---

- 1 cup plain yogurt
- ½ cup grapes

**Breakfast 30g | AM snack 15-30g | Lunch 45-60g | PM snack 15-30g**  
**Dinner 45-60g | Bedtime snack 30g**

## Sample Menu: **Hispanic**

### **Breakfast:**

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- 2 slices toast
- 2 eggs
- 2 tsp. margarine

### **Morning Snack:**

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- 10-12 crackers
- 1 ounce string cheese

### **Lunch:**

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- 2 ounces beef strips
- 1 cup onion and pepper strips  
cooked with 2 teaspoons oil
- $\frac{2}{3}$  cup rice
- 1 six-inch flour tortilla

### **Afternoon Snack:**

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- $\frac{2}{3}$  cup sliced/cooked plantain
- 1 Tbsp. peanut butter

### **Dinner:**

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- 3 ounces baked chicken
- $\frac{1}{2}$  cup mixed beans and rice
- 1 six-inch flour tortilla
- 1 cup lite yogurt
- Shredded lettuce, sliced tomato
- $\frac{1}{4}$  cup sliced avocado
- 2 Tbsp. vinaigrette

### **Evening Snack:**

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- 1 small orange
- 5-6 crackers
- 1 ounce string cheese

## Sample Menu: Filipino

### Breakfast:

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- ½ cup champorado with soy milk
- 1 hard boiled egg
- 8 ounces soy milk

### Morning Snack:

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- Medium coconut bun
- Tea with cream

### Lunch:

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- 1 cup beef pan fried noodles
- Mixed Asian vegetables
- 3 pieces shu mei with lemon sauce
- ½ cup Pummelo

### Afternoon Snack:

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- Medium red bean pastry
- 4 ounces soy milk

### Dinner:

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- 3 ounces chicken casserole with:
  - green papaya
  - spinach
  - ginger flavored broth
- ⅔ cup rice
- ½ cup Asian pear
- 8 ounces soy milk

### Evening Snack:

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- 8 ounces plain yogurt with blueberries

**Breakfast 30g | AM snack 15-30g | Lunch 45-60g | PM snack 15-30g**  
**Dinner 45-60g | Bedtime snack 30g**

# Monitoring Your Diabetes

## Why should I check my blood sugar?

If you have never checked your blood sugar, you may have many questions about doing this during pregnancy. Many women have concerns and fears about checking blood sugars. This section will help answer many of your questions and concerns.

Blood sugar monitoring is one way to know for certain if all of your hard work is keeping your blood sugar level at goal. It will also help your health care provider determine if you need medicine. Keeping blood sugars in a safe range for you and baby will prevent many of the problems that can occur from high blood sugar levels during pregnancy.

There are many different things that can affect your blood sugar, including:

- Food
- Activity
- Stress
- Illness
- Medicine

Monitoring your blood sugar is the only way to determine the best diabetes regimen for you and your baby.

## When should I check my blood sugar?

Women with gestational diabetes and some women with Type 2 diabetes are typically asked to check their blood sugar four times per day:

- Fasting (right when you wake up before you eat or drink anything)
- 1-2 hours after the start of each meal

Women with Type 1 diabetes and some other women with Type 2 diabetes are typically asked to check their blood sugar seven times per day:

- Fasting (right when you wake up before you eat or drink anything)
- Before lunch and dinner
- 1-2 hours after the start of each meal
- Bedtime

Your health care provider will let you know whether you should check one hour or two hours after the start of your meals.

The one or two hour after-meal check helps your health care provider see how high your blood sugar goes after eating since blood sugar rises to its highest point about 1 ½ hours after the beginning of a meal.

Talk with your health care provider to find out the best times to check. YOUR blood sugar.

## What are my blood sugar targets?

The chart below includes the American Diabetes Association's 2017 blood sugar goals during pregnancy for women with gestational, Type 1, or Type 2 diabetes.

Testing Time	ADA Guidelines	My Target Range
Fasting or pre-meal	Less than or equal to 95 mg/dL	
1 hour after meals	Less than or equal to 140 mg/dL	
2 hours after meals	Less than or equal to 120 mg/dL	

## What do these numbers mean and what should I do with them?

Fasting, pre-meal, and after-meal blood sugars tell you and your health care provider different things about how well your diabetes regimen is working to keep you and your baby healthy.

Fasting and pre-meal readings show how well your body can control the sugar in your blood when no food is affecting it. Fasting numbers (before breakfast) are sometimes the most challenging to control since pregnancy hormones make it difficult for the insulin in your body to work properly. After-meal blood sugars, whether one or two hours after the start of a meal, show you how well your insulin moves glucose from the carbohydrates you eat out of your blood and into your body cells.

Send your blood sugar readings to your health care provider weekly. This will allow your provider to determine if your meal plan and activity level are keeping your blood sugar in a safe range or if medication changes are needed.

There are several ways to keep track of your blood sugar readings and communicate them to your provider. Some blood sugar monitors work with mobile phone apps to upload the readings automatically and provide reports. These reports can then be sent to your provider's office. You can also keep a written log of your readings to send to your provider. See the appendix at the end of this book for a sample blank log.

## How do I check my blood sugar?

1. Wash your hands with soap and warm water. If you are not able to wash with soap and water, use an alcohol wipe. The testing area must be completely dry. Do not use hand sanitizers.



2. Place a new lancet into the lancing device using instructions in the user manual.
3. Insert a test strip into the meter.

4. Place the lancing device firmly on the side of your fingertip. Press the button on the lancing device to obtain a drop of blood.



5. Place the testing strip against the drop of blood and allow the strip to absorb it.

6. Read the result from the meter. Write down your blood sugar in your log book. Throw the lancet away in a hard plastic container.



# TIPS

- Avoid using the pad of the finger, where there are more nerve endings. Gently massage the length of your finger before poking.
- Adjust the setting on your lancing device. Changing the setting allows you to decide how deep the lancet needs to go into the skin in order to get the best drop of blood.
- Touch the test strip to the drop of blood using the technique described in the user manual. Do not move your finger away from the test strip until meter reading has begun.
- Write down your blood sugar number in your log book. Include:
  - Date and time
  - Before or after a meal
  - Other comments
- Throw away your lancet in a hard plastic container with a screw-on lid such as a laundry detergent bottle or “sharps” container.
- When you travel, carry your meter and all your supplies with you at all times. Diabetes supplies are permitted through airport security.

## Where do I get supplies to check my blood sugar?

You can get supplies from local pharmacies or mail order companies that specialize in diabetes supplies.

### **With insurance:**

Some insurance plans cover the cost of a meter and supplies. Be sure to call your insurance company for more information. You will need a prescription from your doctor for your meter and supplies. Your certified diabetes educator (CDE) can help you choose the best meter for your needs.

### **Without insurance:**

Talk to your health care provider for other options.

# Medications

## Will I need to take medication during my pregnancy?

For some women with gestational diabetes or Type 2 diabetes, medicine may be needed in addition to meal planning and exercise to keep blood sugars within target ranges. All women with Type 1 diabetes require insulin to control their blood sugar levels.

Your blood sugar readings will determine if your body needs medication or if your medication doses need to be adjusted. If you are not on diabetes medications prior to becoming pregnant, medications will be started when blood sugar readings are over target.

- Insulin is the recommended treatment for high blood sugars during pregnancy. It does not cross over the placenta to the baby.
- Glyburide and metformin are oral medications that can help with blood sugar control during pregnancy in women with gestational or Type 2 diabetes. Both of these medications cross the placenta to the baby. Although no adverse effects on the baby have been shown with these medications, studies to show long term safety have not been done.



## What do I need to know about insulin?

There are two main reasons you may need to take insulin:

- Some insulin manages the body's need for insulin between meals and during the night. This is called "background" insulin. This type of insulin is started if the fasting blood sugar levels are above target.
  - o Background insulins are either long-acting or intermediate-acting.
  - o These insulins are usually taken once or twice a day.
  - o Background insulins are taken at the same time each day.
  - o Examples of background insulins include Levemir (detemir), Lantus (glargine), and NPH.
- Some insulin manages the rise in blood sugar after meals. This is called "mealtime" insulin. This type of insulin is started if the after-meal blood sugar levels are above target.
  - o Mealtime insulins are either rapid-acting or short-acting.
  - o These insulins are usually taken within 15 to 30 minutes before each meal.
  - o Examples of mealtime insulins include Humalog (lispro), Novolog (aspart), and Regular.

Your health care provider will determine the type and amount of insulin you need based on your lifestyle, daily schedule, eating habits, and blood sugar levels. As the pregnancy progresses your insulin dose might need to be changed.

On the following page is a list of the different types of insulin. Your healthcare provider will help you to decide which type and brand will be the safest and the most effective for you during pregnancy.

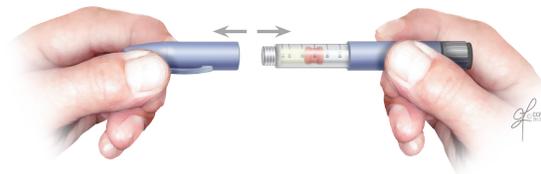
<b>Injectable Insulin</b>	<b>Onset</b> (Start of Action)	<b>Peak</b> (When it Works its Hardest)	<b>Duration</b> (How Long it Stays in Body)	<b>Use</b> (When to Take)
<b>Rapid Acting</b>				
<i>Examples:</i>				
Insulin aspart (Novolog®) Insulin lispro (Humalog®)	5-20 min	1-3 hrs	3-5 hrs	Take 5-15 minutes before eating; may be mixed with NPH
<b>Short Acting</b>				
<i>Examples:</i>				
Regular (Novolin®R) Regular (Humulin®R)	30-60 min	2-4 hrs	5-8 hrs	Take 30 minutes before eating; may be mixed with NPH
<b>Intermediate Acting</b>				
<i>Examples:</i>				
NPH (Novolin®N) NPH (Humulin®N)	1-2 hrs	4-12 hrs	14-24 hrs	Take twice daily
<b>Long Acting</b>				
<i>Examples:</i>				
Insulin detemir (Levemir®) Insulin glargine (Lantus®)	— —	3-14 hrs No peak	Up to 24 hrs Up to 24 hrs	Take 1-2 times daily Take once daily
<b>Pre-mixed (Int. + Short)</b>				
<i>Examples:</i>				
Humulin®70/30 Novolin®70/30	30 min	2-12 hrs	10-16 hrs	Usually taken 30 minutes before breakfast and dinner
<b>Pre-mixed (Int. + Rapid)</b>				
<i>Examples:</i>				
Humalog® Mix 75/25™ Humalog® Mix 50/50™ Novolog® Mix 70/30	5-20 min	1-2 hrs	10-16 hrs	Usually taken 5-15 minutes before breakfast and dinner

# Instructions for Injections Using a Pen

- 1** Wash your hands and gather supplies: insulin pen, pen needle, and alcohol swab.



- 2** Remove the pen cap.



- 3** Wipe stopper with alcohol swab.



- 4** If insulin is cloudy roll the pen (do not shake) in your hands and turn from side to side for one full minute. Rolling is not necessary if insulin is completely clear.

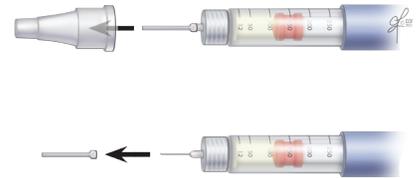


- 5** Attach new pen needle to pen.



\* Pen needles come in a variety of sizes. Talk to your health care provider to choose the pen needle that is best for you.

**6** Pull off the outer and inner needle caps.\*



**7** Follow the pen manufacturer's directions to prepare or prime your pen.



**8** Select dose of medication.



**9** Prepare the injection site by cleaning with alcohol swab.  
Perform the injection using the recommended technique.

Hold for **6-10** seconds.



**10** Place the outer cap on the needle and remove the disposable needle from the pen. Throw the needle away in a hard container.

Replace pen cap.



# Instructions for Injections Using a Vial (Bottle) and Syringe

1

Wash your hands and gather supplies: insulin bottle, syringe, and alcohol swab.



2

If insulin is cloudy roll the bottle (do not shake) in your hands and turn from side to side for one full minute. Rolling is not necessary with completely clear insulins.



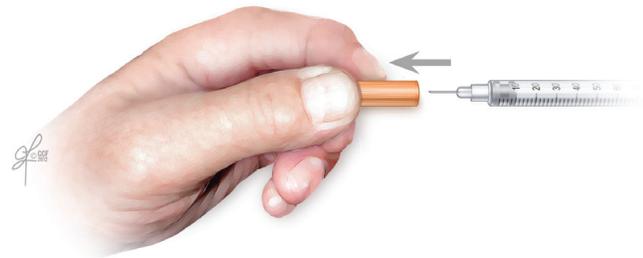
3

If opening a new bottle remove the plastic cap (it will not be replaced). Wipe the top of the bottle with an alcohol swab.



4

Remove the caps from both the top and bottom of the insulin syringe. Do not touch the needle.



5

Pull the plunger down to the correct unit mark for the insulin dose ordered for you.



- 6** Insert the needle into the top of the bottle with the bottle on the table. Push the plunger down to inject the air into the bottle.



- 7** Turn the bottle upside down with the needle still in it. Hold the bottle at eye level. Make sure the needle is in the insulin and no air is in the syringe.



- 8** Pull the plunger down to the correct unit mark for the insulin dose ordered for you.



- 9** Check that the dose is correct, then pull the needle out of the bottle. Set the syringe down without letting the needle touch anything. Prepare the injection site by cleaning with the alcohol swab.



- 10** Holding the syringe like a pencil, insert the needle into the skin at a 90 degree angle. Make sure the needle is all the way through the skin. Push plunger until all insulin is injected. Throw the syringe away in a hard container.



## What are some guidelines for insulin injections?

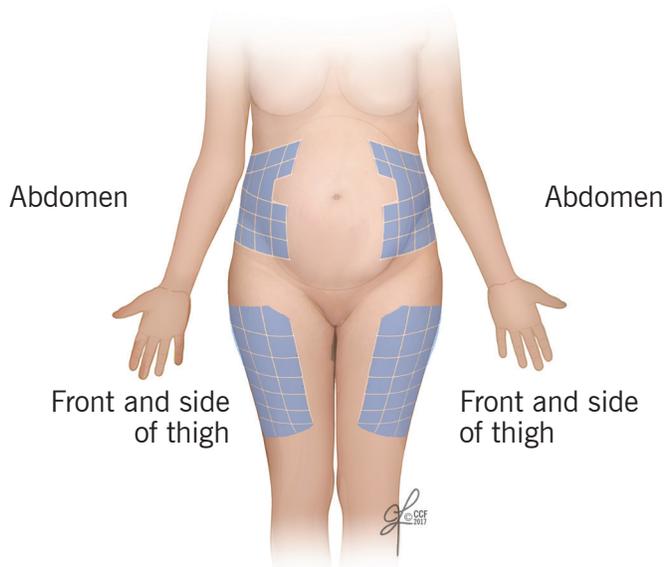
- Use a new pen needle or syringe with each injection.
- Do not use insulin that contains lumps, is discolored, or has been frozen.
- Dispose of needles in a hard plastic container or as instructed by your local city hall.
- Rotate injection sites. If the same location is used over and over for injections, it may lead to hardened areas under the skin that can prevent insulin from being absorbed.

## Does insulin have side effects?

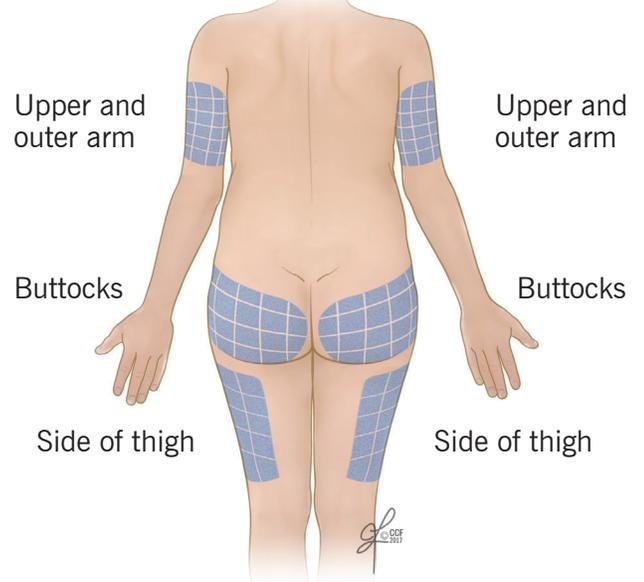
The most common side effect of insulin is low blood sugar. Please refer to the Problem Solving section of this book to learn more about low blood sugar.

## What are the recommended injection sites?

### Front



### Back



# Problem Solving

## Low Blood Sugar (Hypoglycemia)

In most people with diabetes, blood sugar is too low when it is less than 70 mg/dL. But when a woman with diabetes is also pregnant, blood sugar targets are lower. As a result, low blood sugar during pregnancy does not happen until the blood sugar is less than 60 mg/dL.

### What are some things that can cause my blood sugar to be low?

- Not eating meals on time or skipping meals
- Not eating the whole meal or enough carbohydrates
- Being more active than usual
- Taking more medicine than needed
- Drinking alcohol without eating
- Any combination of the above

## What are some symptoms of low blood sugar?



Here are some other symptoms:

- Racing heart beat
- Irritability, nervousness
- Sudden hunger
- Confusion
- Numbness of mouth or tongue
- Nightmares, bad dreams, restless sleep
- Seizures

Note that your ability to feel the symptoms of a low blood sugar may be decreased during pregnancy. As a result, you should treat a low as soon as you start to feel symptoms. If your blood sugar reading is less than 60 mg/dL but you don't feel symptoms, it is still important to treat the low.

If you have any of the above symptoms or any other unexplained feelings, check your blood sugar.

### **WARNING:**

*You could pass out if a low blood sugar is not treated.*

# rule of 15

## How do I treat low blood sugar?

### Rule of 15

1. If possible, check your blood sugar level. Treat if below 60 mg/dL or having symptoms of low blood sugar.
2. Treat with 1 carb choice (**15 grams**) as listed:
  - ½ cup fruit juice **OR**
  - ½ cup regular soda **OR**
  - 1 cup of low-fat milk **OR**
  - 3 or 4 glucose tablets, chewed **OR**
  - 1 tube instant glucose gel **OR**
  - 3 - 5 pieces of hard candy, chewed (not sugar-free)
3. Wait **15 minutes**. Retest. If your blood sugar is less than 60 mg/dL or you still have symptoms, repeat treatment.
4. **If you still do not feel better after 3 treatments, call your health care provider or 911.**
5. If your next meal is more than one hour away, follow up with a small snack, one that has both protein and carbohydrate in it.

Examples of snacks include **one** of the following:

- ½ sandwich
  - 1 oz cheese with four to six crackers
  - 1 tbsp peanut butter with four to six crackers
6. Record this episode. Write down the date and time your low blood sugar occurred, any possible causes, and what you did to treat it.

## High Blood Sugar (Hyperglycemia)

Hyperglycemia, or high blood sugar, occurs when there is too much sugar in the blood. When you have high blood sugars for long periods of time, damage to nerves, blood vessels, and other body organs can occur.

### What are some things that can cause my blood sugar to be high?

- Skipping or forgetting your insulin or diabetes medication
- Not following your meal plan
- Eating too much food
- Infection
- Illness
- Increased stress
- Decreased activity

### How can I prevent high blood sugar?

- Check your blood sugar as instructed.
- Make sure you are following your meal plan, exercise program, and medication routine.

### How do I treat high blood sugar?

- Drink non-caffeinated and non-alcoholic beverages that do not contain sugar, so as to prevent dehydration.
- If you have Type 1 diabetes and your blood sugar is more than 250 mg/dL, test your urine for ketones.
- Call your health care provider if your fasting blood sugar or your after-meal blood sugar is above your goal two or more times in one week.

## What are some symptoms of high blood sugar?

**THIRSTY**

**TINGLING  
FEET**

**BLURRY  
VISION**

**FATIGUE**

**WEIGHT LOSS**

**FREQUENT  
URINATION**

**HUNGER**

### Here are some other symptoms:

- Vaginal and skin infections
- Slow-healing cuts and sores

If you are following your diabetes plan but blood sugars are still above goal, it may mean that your medicine regimen needs to be changed or your dose(s) increased. It is important to contact your health care provider for guidance.

**REMEMBER:** Blood sugar levels above goal increase the risk of problems for both you and your baby.

# Sickness and Stress

## What should I do if I am sick?

Illness, infection, and any other stress on the body can cause blood sugar levels to increase. These high blood sugar levels can further weaken the body's immune system, making it harder for your body to fight the infection or illness. Below are some rules that will help with blood sugar control when you are sick:

- Continue to check your blood sugar as instructed and call your health care provider if blood sugars are above your target ranges.
- If you are taking diabetes medicine, continue to take it as ordered. If you are on mealtime insulin, check with your health care provider to see if the dose needs to be changed.
- Drink at least 8 ounces of water every hour while awake to prevent dehydration. Dehydration is dangerous during pregnancy and can lead to premature labor.
- If you are able to keep down solid food, follow your regular meal plan. Examples of carbohydrate choices that are easier to eat with an upset stomach include crackers, gelatin, bananas, rice, applesauce, toast.
- Call your health care provider if you have fever, vomiting, or diarrhea. These problems can lead to dehydration and premature labor.

## What should I do if I am stressed?

Pregnancy is a very exciting time in your life. It can be very stressful as well. You are planning for a new member of the family! Even happy events can be stressful. It is important that you understand the effects that stress can have on you and your blood sugar.

Stress causes hormones that make blood sugar levels go up to be released in your body. This makes it difficult to keep blood sugar readings at goal. Healthy coping is an important part of controlling your diabetes. You can improve how your body reacts to stress by finding healthy ways to relax:

- Listening to music
- Praying or meditating
- Doing stretching exercises (as allowed by your obstetrician)
- Getting enough sleep
- Seeking support from family and friends

If you are having trouble coping with stress, it is important to discuss your concerns with your health care team. It is okay to ask for help!



# Delivery and Beyond

## How will my diabetes be managed during labor?

You have worked very hard to keep your blood sugar levels in good control during your pregnancy. When you go to the hospital to have your baby, it is important that the health care team in the hospital knows you have diabetes. Your health care provider should have your pregnancy records at the hospital, but it is still important to let the nursing staff know all of your medical history, including diabetes.

The health care team at the hospital will check your blood sugar levels as needed. Your blood sugar testing during labor will be determined by your obstetrician or endocrinologist (diabetes doctor).

Labor is hard work. Your insulin needs may be less in labor than they were before labor. It is important that your blood sugar during delivery is at a safe range so that your baby will have a normal blood sugar level after delivery. One of the risks with diabetes is that your baby could have a low blood sugar after delivery. When your blood sugar is stable during labor and delivery, this will also help your baby to have a stable blood sugar after delivery.

Your baby will have his or her blood sugar checked immediately after delivery to be certain it is at a safe level. Your baby may also have his or her blood sugar checked before and after the first three or four feedings (check with the nursery in the hospital for more information).

If you are planning to breastfeed, do so as soon as possible after delivery. This is good for baby's blood sugar and good for you. If you had diabetes before your pregnancy, breastfeeding after pregnancy may help to control your blood sugar levels. But it could also cause low blood sugar if your diabetes medication doses are not adjusted. Be sure to talk to your diabetes health care provider about the best diabetes medication doses while breastfeeding.

## Going Home

*Congratulations!* Going home with your new baby is very exciting. You have done a great job taking care of your blood sugar levels. Are you done? Not yet!

### **Special instructions for gestational diabetes:**

Women with gestational diabetes are at an increased risk of developing Type 2 diabetes. It is recommended that you have another oral glucose tolerance test four to twelve weeks after delivery, much like the one you had during pregnancy that was used to diagnose gestational diabetes. After delivery, this same test is used to ensure that you no longer have diabetes and your blood sugar levels have returned to normal. Even if results are normal, your health care provider may want to screen for diabetes or pre-diabetes at least every three years.

Some women might also be asked to continue to check their blood sugar after the baby is born to be certain that their blood sugar has returned to a normal range. Occasionally, a woman will continue to have high blood sugars after delivery. Discuss with your health care provider whether or not you should continue to check your blood sugar after your baby is born.

If you are asked to continue checking your blood sugar after delivery, you may only need to do it one or two days a week: usually fasting and two hours after a meal from the time you get home from the hospital until you return for your six week postpartum checkup. Your health care provider will give you specific instructions.

## Your blood sugar goals after delivery are:

### Testing Time

Fasting or pre-meal	Less than 100 mg/dL
2 hours after meals	Less than 140 mg/dL

**Don't wait!** Call your health care provider if your blood sugar levels are above these goals even before your six week checkup.

The best way to decrease your chance of developing Type 2 diabetes is to continue the healthy lifestyle habits you learned during your pregnancy.

- Healthy eating
  - o Helps maintain a healthy weight and improve general health
- Staying active
  - o Helps the body use insulin and sugar better, helps maintain a healthy weight, and helps to improve mood and general health.
- Keeping a healthy weight
  - o Being overweight increases the risk of Type 2 diabetes.
- Breastfeeding as able
  - o Breastfeeding has been shown to decrease the risk of becoming overweight later in life.

***Remember that lifestyle changes are meant to last a lifetime!***



**To schedule a diabetes education visit at a Cleveland Clinic location near you, call one of the following numbers:**

Akron General	330.344.7791
Ashtabula or Conneaut	440.994.7598
Euclid, Mentor, or Willoughby Hills	216.491.7385
Hillcrest	216.491.7385
Independence	216.986.4000
Lakewood	216.529.5300
Main campus	216.444.3672
Medina	330.721.5700
South Pointe, Solon, or Twinsburg	216.491.7385
Stephanie Tubbs Jones Health Center	216.767.4242



**Every life deserves world class care.**