



TriHealth

Your Journey to Diabetes Wellness during Pregnancy

A Diabetes Education Manual

TriHealth.com





Welcome to TriHealth's Diabetes and Pregnancy Program. Our commitment is for you to receive the special care that you need and deserve. We will provide you with the highest quality of care to promote the health and wellness of you and your baby.

The diabetes educators are available Monday through Friday between 8:30 a.m. - 5:00 p.m., with any questions or concerns you may have about diabetes, meal planning, physical activity, medication regimen and stress management. We will be happy to help partner with you and your medical providers to reach your pregnancy goals.

Please remember to bring your blood glucose (BG) log and food diary to each doctor appointment for review. If you are not scheduled to visit with your doctor, please submit your BG log weekly by email, fax, or phone call. If emailing please write: PHISECURE in subject line.

It was a pleasure meeting you and we look forward to working closely with you and your family.

TriHealth Perinatal Programs

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What is Prediabetes?

Prediabetes is a serious health problem that increases the risk of having type 2 diabetes, heart problems and stroke. Prediabetes means that your blood sugar is high but not so high that it is considered to be diabetes. A blood sugar checked first thing in the morning before you have eaten is called a fasting blood sugar. A normal fasting blood sugar is less than 100. A fasting blood sugar between 100 and 125 is considered prediabetic, or the doctor may say you have impaired fasting glucose. You may have a test called an oral glucose tolerance test. For this test, you drink a sweet liquid and have blood drawn to check your blood sugar two hours after drinking the liquid. If your two-hour blood sugar level is between 140 and 199, you are prediabetic. The doctor may say you have impaired glucose tolerance.

A lab value called a hemoglobin A1C or A1C is a blood test that shows the past three-month average blood sugar and is considered normal if it is less than 5.7%. An A1C between 5.7% and 6.4% is considered prediabetic. An A1C of 6.4% or higher is considered to be diabetic.

The Centers for Disease Control and Prevention (CDC) estimates that one in every three adults has prediabetes. That is 86 million people!

Most people living with prediabetes do not know they have it.

Without lifestyle changes to improve health, 15% to 30% of people with prediabetes will end up with type 2 diabetes within five years.

Losing 5% to 7% (10 to 20 pounds) of body weight and regular exercise can help prevent or delay type 2 diabetes by up to 58% in people with prediabetes. Getting at least 30 minutes of exercise, such as brisk walking, five days a week is important for overall health.

Risk factors for prediabetes and type 2 diabetes:

- Over 45 years of age

- Overweight
- Have a parent or sibling with diabetes
- Race: African-American, Hispanic/Latino, Indian-American, Asian-American or Pacific Islander
- Gestational diabetes or gave birth to a baby weighing nine pounds or more
- Physically active fewer than three times a week

It is important to screen early for prediabetes and type 2 diabetes because early treatment can prevent serious problems that diabetes can cause, such as blindness, nerve damage or kidney damage.

What is Diabetes?

Diabetes is a disease in which you have too much sugar in your blood (hyperglycemia). It is a lifelong disease that can lead to serious health problems. With proper care of your disease, you can greatly reduce the risk of these health problems, which include damage to your heart, blood vessels, kidneys, nerves and eyes.

Normally, insulin moves sugars from food into the cells, which the cells use for energy. The lack of insulin or the lack of normal response to insulin causes excess sugars to build up in the blood. The cells are unable to use the sugar for energy. You may be able to control your blood sugar with diet and exercise. As diabetes progresses, some people may need to add pills to control their sugar and some people may need to use insulin shots.

Type 1 diabetes is usually diagnosed in children and young adults and used to be called juvenile diabetes. Only 5% of people with diabetes have this form of the disease. In type 1 diabetes, the body does not produce insulin. The body breaks down the sugars and starches you eat into a simple sugar called glucose, which it uses for energy. Insulin is a hormone produced in the pancreas that the body needs



to move glucose from the bloodstream into the cells of the body. With the help of insulin shots and other treatments, even young children can learn to manage their condition and live long, healthy lives.

Type 2 diabetes is often linked to being overweight and inactive. The amount of insulin produced by your pancreas has already decreased by 80% at the time you are diagnosed. Your body still makes some insulin, but your cells have become resistant to insulin (insulin resistance).

Women who have type 1 or 2 diabetes should control their diabetes very well prior to becoming pregnant.

What is Gestational Diabetes?

Pregnant women who did not have diabetes before they became pregnant, but who have high blood sugars during pregnancy, have gestational diabetes. Gestational diabetes is like type 2 diabetes—the pancreas does not make enough insulin and/or the cells are less responsive to the insulin that is made (insulin resistance). As a result, high blood sugar develops. High sugar levels can cause problems for the unborn baby. About 2% to 10% of pregnant women develop gestational diabetes. Testing for gestational diabetes is done between the 24th and 28th weeks of pregnancy. Women with gestational diabetes have a three to seven times higher risk of type 2 diabetes within five to 10 years. Your baby also has a greater risk of getting type 2 diabetes.

Risk factors

You have a higher chance of gestational diabetes if you have a family history of diabetes and/or one or more of the following risk factors:

- You are obese (body mass index (BMI) greater than 30)
- You had a prior pregnancy with gestational diabetes
- You are pregnant and 25 years and older
- Previous baby weighed more than 9 pounds
- Previous still birth
- History of polycystic ovary syndrome (PCOS)
- Close relative with Type 2 diabetes
- Of African-American, Asian, Hispanic, Pacific Islander, Native-American descent

If blood sugar levels are kept in the normal range during pregnancy, women can have a healthy pregnancy. If your blood sugar levels are not well-controlled, there may be risks to you, your unborn baby, your labor and delivery, or your newborn baby. The good news is that 70-85% of women with gestational diabetes are able to control it with lifestyle changes alone.

Current guidelines from the American Diabetes Association recommend that women with gestational diabetes have blood sugar testing done 4-12 weeks after the baby is born and every one to three years thereafter depending on risk factors.

All women with a history of gestational diabetes should exercise, eat healthy and work toward a normal body weight to prevent type 2 diabetes.

Your baby is also at risk for these conditions:

- Macrosomia (excessive birth weight >9 lbs.)
- Premature birth
- Hypoglycemia (low blood sugar)
- Difficulty breathing
- Other delivery complications

Symptoms of High Blood Sugar (hyperglycemia)

- Increased thirst
- Increased urination
- Increased urination during the night
- Weight loss (may be rapid)
- Frequent infections
- Tiredness
- Weakness
- Vision changes, such as blurred vision
- Fruity smell to your breath
- Stomach pain

Diagnosis

Diabetes is diagnosed when blood sugar levels are too high. Your blood sugar level may be checked by one or more of the following blood tests:

- A fasting blood glucose test: You will not be allowed to eat for at least eight hours before a blood sample is taken.
- A random blood glucose test: Your blood glucose is checked at any time of the day, no matter when you last ate.
- A hemoglobin A1C blood glucose test: A hemoglobin A1C test provides information about blood glucose control over the previous three months.



- An oral glucose tolerance test (OGTT): A test commonly used during pregnancy. Your blood glucose is measured at least one to three hours after you have last eaten and then after you drink a glucose-containing beverage. Because the hormones that cause insulin resistance are highest at about 24 to 28 weeks of a pregnancy, an OGTT is usually done during that time. If you are at risk for gestational diabetes, your doctor may test you for gestational diabetes earlier than 24 weeks of pregnancy. If you do not pass the oral glucose test (OGT), then a 3-hour Glucose Test will be ordered (3hr GTT or GCT). You must schedule this test with the lab and be fasting (nothing to eat or drink except water for 8-12 hours the night before).

HgA1C or A1C	<6	7	8	9	10	11	12	13	14	15
Average Blood Sugar	126	154	183	212	240	269	298	326	355	384

5.7%–6.4% = Prediabetes, Greater than 6.5% = Diabetes

The American Diabetes Association recommends an A1C of less than 7% in the general population (non-pregnant). Goal for Gestational Diabetes is 6-6.5%

Checking Blood Sugar

Checking your blood sugar (blood glucose) is important. Changes in blood sugar are common and can vary greatly throughout the day depending on your diet, activity and medications.

- Write your blood sugar results in your diary.
- Take the diary with you to your regular doctor's appointments.
- Your care team will review and discuss your results with you.
- Your doctor may adjust your medicine if your blood sugar is too high.
- The diary will also help you see how your meals, activity and medications work together to control your blood sugar.
- Controlling your blood sugar can delay or prevent diabetes complications, such as heart attack, stroke or blindness.

How do I check my blood sugar?

You will use a blood glucose meter to check your blood sugar several times a day. A meter is a small device that tests a tiny drop of blood and then displays your blood sugar level at that

moment. A lancet is a device used to prick the skin to get the drop of blood. The results are used to make decisions about food, physical activity and medications.

During pregnancy, experts recommend using the side of the fingertip to get the most accurate result.

Talk with your Diabetes Educators or pharmacist to see what meters and supplies are covered by your insurance. If you do not have insurance, store-brand meters and supplies are usually less costly. Check with your Diabetes Educators about possible discounts or coupons for glucose meter and supplies.

What are the blood sugar targets for pregnant women with diabetes?

The targets recommended by the American Diabetes Association are listed below.

- When I wake up (fasting blood glucose): 70 to 95 mg/dl
- One hour after first bite of food at breakfast, lunch, and dinner: 100 to 140 mg/dl

Always follow your doctor's recommendations since he or she may give you different target goals based on your individual case and type of diabetes.



Other times you may want to test are:

- When you have symptoms of high or low blood sugar
- When you are ill, especially if you are throwing up or dehydrated
- Before, during and after exercise
- Before you go to sleep

If you are using the results to decide on how much insulin to take, you will need to check your blood sugar several times during the day or as directed by your doctor.

How do I know if my results are accurate?

- Follow your meter's instructions when doing your check.
- Keep your meter clean.
- Check test strips to make sure they are not past their expiration date.
- Do not leave testing supplies in a hot car

or direct sunlight or in the freezer.

- Make sure skin is clean and dry before testing.
- Make sure your blood sample is big enough.
- Check your meter with control solution as recommended by the manufacturer.

All meters have a 1-800 phone number on the back in case you have questions about your meter. Your doctor will write prescriptions for your glucose meter and supplies. Insurance pays part of the cost of meters and supplies. Store-brand meters and supplies may be less expensive if you do not have insurance.

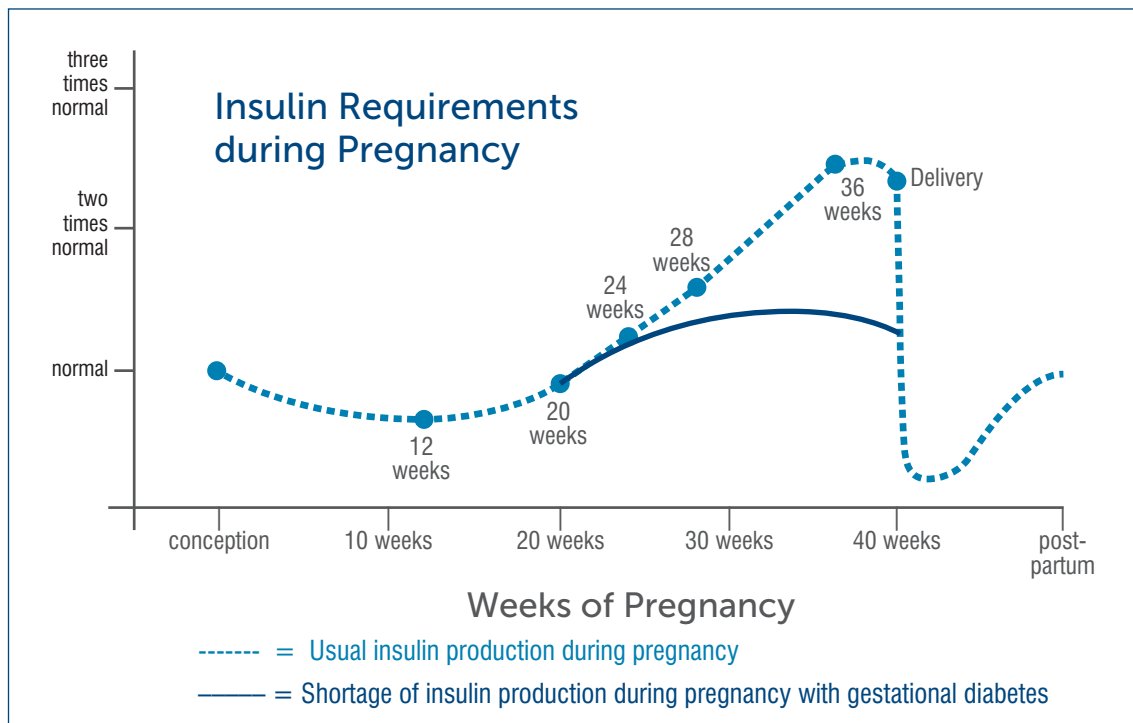


Chart adapted from Gestational Diabetes Basics, Second Edition.

Exercise

It's important to be active. Physical activity is a key factor to success when managing diabetes and pregnancy. Physical activity is vital for everyone. Choose exercise that is fun. The benefits of exercise include:

- Lowers blood sugars
- Improves the body's ability to use glucose and insulin
- Decreases the risk of heart disease
- Lowers cholesterol and blood pressure
- Decreases the risk of kidney damage
- Decreases the risk of blindness
- Reduces stress
- Improves self-esteem
- More energy
- Reduces back pain
- Better sleep
- Relieves constipation

Other recommendations:

- Please talk to your doctor before you exercise to help decide what is best for you.
- When exercising start small, for example, try walking 10 minutes after each meal, this may help your blood sugars.
- Safe exercises include water aerobics, walking, stationary bike, dancing.



Healthy diet and exercise are likely as strong as any medication I will ever prescribe for your diabetes and should be continued forever.

Dr. Heile,
Diabetologist

- Low blood sugar (hypoglycemia) can be a side effect of exercise, if you take insulin or other medicine for diabetes. Check your blood sugar before and after exercise.
- Be sure to drink plenty of water to avoid dehydration.
- Recommended goal: 150 minutes per week or 30 minutes per day of moderate exercise

Gauging Intensity of Exercise by How You Feel:

Here are some clues to help you judge your exercise intensity.

Moderate exercise intensity:

Moderate activity feels somewhat hard. When your exercise intensity is at a moderate level:

- Your breathing quickens, but you're not out of breath.
- You develop a light sweat after about 10 minutes of activity.
- You can carry on a conversation, but you can't sing.

Vigorous exercise intensity: (avoid during pregnancy)

Vigorous activity feels challenging. When your exercise intensity is at a vigorous level:

- Your breathing is deep and rapid.
- You develop a sweat after only a few minutes of activity.
- You can't say more than a few words without pausing for breath.
- Carry a source of carbohydrates with you in your gym bag or pocket in case your blood sugar gets low while exercising.

Hints for a Successful Exercise Program

- Talk with your doctor before starting any exercise program.
- Set short- and long-term goals for yourself. Reward yourself when you meet them.
- Exercise with music or in front of the television.
- Wait one hour after eating before exercising.
- Pick an exercise you like that fits into your lifestyle.
- Exercise with a friend for both safety and motivation.
- Stop exercising. Call your doctor, the after-hours line or 9-1-1 immediately if you have any of these symptoms during, or even several hours after, exercise:
 - Lightheadedness or dizziness
 - Rapid heart beat
 - Chest discomfort
 - Jaw, arm or upper back discomfort
 - Contractions
 - Cramping
 - Vaginal bleeding
 - Blood sugar >200
 - Blood sugar <70
 - Nausea
 - Unusual shortness of breath
 - Sudden weakness
 - Severe or unusual fatigue or sleepiness
 - Leakage or loss of vaginal fluids
 - Severe discomfort of any kind



Grains, beans and starchy vegetables



1 corn tortilla = 1 carb choice



1/3 cup of rice or pasta = 1 carb choice



6 crackers



3/4 cup cereal = 1 carb choice



1/2 cup beans, peas, corn = 1 carb choice



Carbohydrate foods affect blood sugars the most.
Your meal plan will tell you how many carb choices at each meal/snack.

Count Carbohydrates
1 carbohydrate = 15 gram

Fruits

15 medium grapes



1/2 banana



1 cup berries



Milk and Yogurt

1 cup



6-8 oz. yogurt



Non-starchy vegetables



Always eat a protein food with a carbohydrate food to help your blood sugars

Low Carbohydrate Vegetables

Protein

Low

Protein

Eggs



Chunk light tuna



Sunflower kernels



Peanut Butter



Cheese



Nuts



Cottage Cheese



Fish



Chicken, Meat, Pork

How Foods Affect Blood Sugar

Carbohydrates raise the blood sugar the most.



* Preferably whole wheat

Nutrition Guidelines for Diabetes and Pregnancy

- Eat every 2.5 to 3 hours to total three meals and three snacks per day.
- Remove foods from your diet that are high in sugar, especially corn syrup.
- Avoid adding white/brown sugar and/or honey to foods.
- Avoid regular soda pop, sweet tea, lemonade and sweetened yogurt.
- Remove fruit juices, but instead use whole pieces of fruit. Limit serving size.
 - Eating fruit before lunch and at bedtime snack may raise blood sugars.
- Spread carbohydrates throughout the day.
 - Remember protein at breakfast.
- Choose foods high in fiber and high in protein.
 - Whole grain cereal, whole wheat pasta, whole fruits and vegetables, beans, lentils and legumes or oatmeal. Try to find a bread with the words WHOLE wheat/grain appearing as the first ingredient.
- Choose foods low in fat and limit extra fat, such as gravy, sauces, vegetable oil, margarine, or butter. Choose low-fat meats, such as lean cuts of beef and pork. Choose more fish and poultry (chicken/turkey) without the skin.
 - Baked, broiled, or roasted instead of fried chicken or fish.
 - Eat light yogurt instead of regular yogurt. Greek yogurt usually has double the protein.
 - Try garlic, onions and spices to season vegetables. Limit cream or butter sauces, salad dressing and mayonnaise.
 - Try low-fat versions of salad dressing and mayonnaise to reduce calories if needed.
- Drink low fat milk unless you are underweight.
- Limit food from fast food restaurants. Ask for nutritional information on menu selections and choose foods that are low in fat. For many women, a burger and french fries, large portions of white rice, ribs, or more than 2 pieces of pizza may cause high blood sugars.
- The recommended weight gain is as follows:
 - If you were underweight pre-pregnancy, 28-40 lbs.
 - Normal weight 25-35 lbs.
 - Overweight 15-25 lbs.
 - Obese 11-20 lbs.
 - Discuss your weight goals with your doctor or dietitian.
- Avoid alcohol, cigarettes and street drugs for the safety of you and your baby.
- Discuss with your doctor before taking any herbal supplements or medications, including over-the-counter medications.
- Eat a variety of foods from all major food groups. Pregnant women need approximately an additional 340 calories in the second trimester and an additional 450 calories in the third trimester to support baby's growth.
- Caffeine is a stimulant – limit to less than 200 mg/day while pregnant. Examples include coffee, tea, soft drinks, energy drinks, some medications and chocolate.
- Tell your healthcare provider if you crave unusual or nonfood items, for example, dirt, clay, etc. Eating nonfood items may be harmful to you and your baby.
- Fish is nutritious but during pregnancy limit to 12 ounces/week maximum.
- Avoid high mercury fish during pregnancy: swordfish, shark, tile fish, king mackerel and orange roughy.

- Chunk lite tuna has less mercury and usually costs less than albacore tuna.
- The Institute of Medicine recommends pregnant women drink approximately 80 ounces of water or other beverages daily.
- Adequate water may help prevent excessive swelling, constipation, hemorrhoids and bladder infections. Dehydration may trigger preterm labor.
- Take your prenatal vitamin daily.

Food Safety Tips

- While pregnant, avoid raw meat, raw fish, uncooked hot dogs. Avoid refrigerated meat spreads and reheat deli meat to steaming hot to avoid a possible harmful bacteria called Listeria.
- Rinse fresh fruits and vegetables before using.
- Wash hands with soap and water before food preparation and before eating.
- Clean countertops before and after food prep.
- Avoid unpasteurized juice, milk and cheese.
- Avoid raw sprouts.

Sources: USDA, March of Dimes, ACOG, Office of Women's Health; U.S. Department of Health and Human Services

Photo: nutrifusion.com



Quick Healthy Breakfast Ideas

Choose one from the carbohydrate list and one from the protein list.

CARBOHYDRATE	AND	PROTEIN
2 slices whole wheat toast		2 tablespoons peanut butter
2 slices whole wheat English muffin		Tuna salad with cheese (melted)
2 slices whole wheat toast		Scrambled eggs
1 whole wheat tortilla & 1 cup milk		Grated cheese and chopped ham
Low sugar oatmeal packet made with milk		¼ cup chopped nuts or sunflower kernels
6 graham cracker squares		2 tablespoons peanut butter
10 Triscuits		Egg salad or chicken salad
Lite yogurt and 1 slice whole wheat toast		¼ cup sunflower kernels added to yogurt
12 whole wheat crackers		Cottage cheese and tomato wedges
Whole wheat tortilla wrap and 1 cup milk		Scrambled eggs and cheese made with egg/ milk mixture
2 slices French toast (sugar free syrup)		
Grilled cheese sandwich		

Quick Healthy Snack Ideas

Choose one from the carbohydrate list and one from the protein list.

CARBOHYDRATE	AND	PROTEIN
Popcorn		String cheese
Crackers		Tuna salad
Apple (size of tennis ball)		Peanut butter
Light yogurt		Sunflower kernels
Pretzels		Cheese cubes
Granola bar		Nuts
Pear		Deviled egg
Triscuits		Cottage cheese
Flavored rice cakes		Hardboiled egg
Peach		Hummus/cheese
Lite yogurt smoothie		Peanut butter on celery
Sugar free pudding, Graham crackers		Peanut butter
Whole wheat tortilla		Chicken strips/cheese
½ English muffin		Cheese

** Remember to check label for total carbohydrates and serving size

** Try lite Greek yogurt and try high protein cereal bars

Overcoming Sweet Cravings

What triggers cravings?

- Psychological and Emotional Triggers
 - Boredom and depression
 - Stress and anxiety
 - General need for comfort
 - Habit
- Physical Triggers
 - Low blood sugar
 - Thirst/dehydration

How can I overcome cravings?

- Change your routine if your craving is linked to a certain activity (such as watching TV).
 - Go for a walk, call a friend, or just wait it out for 15 minutes.
- Drink more water. Thirst is often perceived as hunger.
- Drink water with lemon. Sour/spicy foods have been known to help combat sweet cravings. Avoid spicy foods if you have heartburn issues.
- Limit refined flours and sugar.
- Eat breakfast every morning. Start the day off with a healthy, well-balanced meal to help curb midday food cravings.
- Eat small, frequent meals and snacks throughout the day. Eat every 2½ -3 hours. Preventing hunger will help prevent cravings.
- Buy fruit instead of sweets. Limit portion of fruit. Eat with protein. For example, apples with peanut butter.
- Think small. If you must have something sweet, eat smaller portions.
- Exercise daily. Exercise releases endorphins, which help to reduce cravings. Walk at least

10 minutes every day.

- Reduce or eliminate caffeine. The highs and lows of caffeine may contribute to dehydration and blood sugar imbalances, making cravings more urgent and frequent. Instead, choose decaffeinated coffee, decaf tea, caffeine-free and sugar-free soft drinks, or water.
- Get enough rest. Many of us are sleep-deprived. We need rest and sleep to feel rejuvenated instead of sugar and stimulants.
- Check your blood glucose regularly. Monitor and record your blood sugar level as recommended by your doctor.
- Be good to yourself. Reduce anxiety/stress by taking time for daily “down time”, even if only for a few minutes. Treat yourself to something relaxing you enjoy.

Sugar Substitutes and Pregnancy

Some sugar substitutes cross through the placenta and some do not. Here is a list of the sugar substitutes that are considered SAFE in pregnancy by the American Diabetes Association(2013) and DO NOT cross the placenta to the baby.

Name	Common Name	What you should know...
Acesulfame Potassium (Ace-K)	Sweet One, Sunnett	**
Aspartame	Equal, NutraSweet, Nutra Taste	**
Sucralose	Splenda	**
Neotame	Added to foods only by manufacturers	**
Sugar Alcohols	Erythritol, isomaltitol (isomalt) lactitol, maltitol and maltitol syrups, mannitol, sorbitol, xylitol and hydrogenated starch hydrolyzates (HSH)	Sugar alcohols are absorbed more slowly and often have a laxative effect if eaten in excess. Remember – These do provide carbohydrate and calories to the diet.

**Limit total intake of all types of sugar substitutes to about 2-3 servings per day

These are sugar substitutes to QUESTION USE in pregnancy. Check nutrition label for serving size.

Name	Common Name	What you should know...
Saccharin	Sweet 'n Low	Does cross the placenta to the baby
Stevia	Truvia, Zing	Effect on baby or mom is unknown
Agave Nectar	Agave Nectar	Effect on baby or mom is unknown

Portion Equivalents

Measure food portions so you know exactly how much food you are eating. When measuring cups are not available you can still estimate your portions.

1 cup			1 cup of pasta = 3 Carb choices (45g) Medium apple or peach = 1 carb choice (15g)
1/2 cup			1/2 cup: corn, peas, macaroni and cheese, quinoa, black beans, red beans, chick peas, or oatmeal = 1 carb choice (15g)
1/3 cup			1/3 cup: rice, baked beans, cranberry or grape juice = 1 carb choice (15g)
1/4 cup			1/4 cup is approximately 1 serving of nuts **Low carb, high protein option
2 tablespoons			2 tablespoons of peanut butter is about the size of a golf ball **Low carb, high protein snack
1 ounce, cheese			1 serving of cheese **Low carb, high protein snack
3 ounces, meat			1 serving of meat **Low carb, high protein snack

One Carbohydrate Choice or Serving**(15 grams of carbohydrates)**

1 slice of high fiber bread (whole wheat)

1 small fresh fruit (size of a tennis ball)

½ small whole wheat bagel

½ cup cooked unsweetened oatmeal

½ cup potatoes or 1/3 cup of pasta

½ whole wheat English muffin

½ hamburger or hot dog bun

¾ cup unsweetened dry high fiber cereal

1 cup milk or 6 oz. of Lite yogurt

Three (4-inch) graham cracker squares

½ cup corn, peas, lima beans

½ cup sweet or mashed potatoes or yams

½ cup dried beans(cooked)

½ cup regular/no added sugar ice-cream

4-6 whole wheat crackers

Granola bar (check label for total carbohydrates)

1/3 cup of rice

15 medium grapes

3 cups of low fat popcorn

Two Carbohydrate Choices or Servings**(30 grams of carbohydrates)**

2 slices of whole wheat bread

8-12 whole wheat crackers

2/3 cup of whole wheat pasta

6 cups of low fat popcorn

4 inch baked or sweet potato

1 whole wheat English muffin

1 hamburger or hot dog bun

Six (4") graham cracker squares

1 cup corn or peas

One cup sweet potatoes or yams

1 cup cooked beans

Three Carbohydrate Choices or Servings**(45 grams of carbohydrates)**

1 cup milk, ¾ cup unsweetened dry cereal and 1 small banana

2/3 cup whole wheat pasta and ½ cup of spaghetti sauce

2 slices whole wheat bread and 1 cup of vegetable soup

2 slices of whole wheat bread and 1 small fresh fruit

½ cup potatoes, ½ cup corn and 1 slice of whole wheat bread

½ cup cooked beans, 1/3 cup rice and 1 small corn muffin

*** Always eat a carbohydrate food with a protein food at all meals and snacks ***

TriHealth Blood Glucose & Food Record

Name: _____ Date of Birth: _____ 15gms= 1 carb = 1 carb choice, 30 gms= 2 carbs, 45 gms= 3 carbs, 60 gms= 4 carbs

Date	Breakfast	Mid-Morning Snack	Lunch	Mid-Afternoon Snack	Dinner	Bedtime	Physical Activity Goal: 150minutes per week or 30 min. per day x 5 days/week
Date: _____ Fasting: <input type="text"/>	Time: _____ 1hr after meal <input type="text"/>	Time: _____	Time: _____ 1hr after meal <input type="text"/>	Time: _____	Time: _____ 1hr after meal <input type="text"/>	Time: _____	
Date: _____ Fasting: <input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>		
Date: _____ Fasting: <input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>		
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Date: _____ Fasting: <input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>		
							This Week Goal:

Insulin: Before Breakfast A.M.: Log (Clear) _____ Before Dinner P.M.: Log (Clear) _____ Bedtime: _____
NPH (Cloudy) _____ NPH (Cloudy) _____ NPH (Cloudy) _____

If Babies Could Talk, They'd Say: "Mom, Please Breastfeed Me!"

Breastfeeding is the healthiest way to feed your baby.

But what if you have pre-existing or gestational diabetes? Breastfeeding is even better for you and your baby for many reasons. Breastfeeding and a mother's own milk are associated with...

For baby:

- Reduces risk of type 1 diabetes and type 2 diabetes when older
- Provides antibodies that help protect baby against infections of ears, lungs (respiratory), stomach and GI tract
- Provides exactly the right proportions of protein, fat and carbohydrates your baby needs for growth and development
- Reduces risk of SIDS
- Reduces risk of childhood cancers, juvenile rheumatoid arthritis and allergy, such as eczema and asthma
- Promotes optimal brain development; possibly higher I.Q. scores
- Promotes optimal jaw and tooth development
- Results in less constipation, diarrhea and gas

For mother:

- Decreased insulin requirements for most women having a pre-existing diabetic condition
- Lower risk of developing type 2 diabetes later for those with gestational diabetes – especially if ideal body weight is reached and then weight and exercise are maintained
- Lower risk of breast, ovarian, uterine and endometrial cancers
- Lower risk of osteoporosis
- Increased calorie use to help with weight loss after pregnancy

- Lower cost compared to formula (artificial baby milk)
- No preparation, heating, clean-up or worry about contamination (Mother's milk is always ready, warm, convenient and uncontaminated)
- Decreased bleeding after birth with a quicker return of the uterus to its normal size
- More relaxed due to the release of the hormone oxytocin during every breastfeeding
- Increased emotional satisfaction that helps with forming a warm, loving bond with baby.

The American Academy of Pediatrics (AAP) recommends exclusive breastfeeding for six months (no formula or baby food until six months unless medically necessary), and then continued breastfeeding for at least one year – and longer if mother and baby still enjoy the breastfeeding relationship. Breast milk continues to provide important nutrients and immunity factors no matter what the baby's age. Breast milk is truly a gift that keeps on giving.



For more information, take the breastfeeding class at TriHealth (call 513 475 4500 or 513 661 5655). If you have questions about breastfeeding or want to rent/purchase a good quality breast pump, call the TriHealth Breastfeeding Center for a TriHealth International Board-Certified Lactation Consultant (IBCLC) at 513 862 PUMP.

Sick Day Rules and Meal Plan

- Colds and flu as well as other illness may affect your blood sugars because eating food, taking medicine and exercising may be difficult.
- Call your diabetic nurse for more information if ill or vomiting.

Sick Days and Pregnancy

- When you are sick or have an infection, your blood sugar level can go up. This is because your body is under stress, and stress raises blood sugars. Here are some important points to remember:
 - Follow your usual meal plan, if possible.
 - If you take medicine to help control your blood sugars, take your normal dose of that medicine. Call your healthcare provider right away if you cannot take your medicine or if you have more than two high or low blood sugars in one day.
 - Test your blood sugar even more often, preferably every four hours.
 - Drink more low-carbohydrate liquids, such as water, clear broth, unsweetened decaffeinated tea or diet ginger ale, every hour that you are awake to keep hydrated.
 - If you can't eat enough to follow your meal plan, try drinking small amounts of beverages that provide 15 grams of carbs (1 cup milk, ½ cup regular soda pop, ½ cup fruit juice, ½ cup non-diet ginger ale, ½ cup regular gelatin, 1 cup soup (broth type), 8 oz. sports drink, ½ cup ice-cream, 1 small frozen juice bar) but monitor your blood sugar closely if you do!
 - If you cannot eat or drink enough carbohydrates, you may need to check your urine for ketones especially if you have type 1 diabetes when you are sick. Ask your doctor if this would be important for you. Ketone test strips are available at your local pharmacy.

Call your doctor or nurse right away if:

- Your blood sugar is less than 60-70 mg/dL and/or greater than 200 mg/dL 2 times in a row in 24 hours.
- Your temperature is greater than 100 F degrees.
- You vomit more than once in six hours and cannot keep any fluids down.
- You have diarrhea more than five times that lasts longer than six hours.
- Your ketones are moderate to large.
- You are feeling more tired, weak and confused.
- You have trouble breathing.
- You do not feel better in 24 hours.
- You are not sure what to do or have questions.

Low Blood Sugar (hypoglycemia)

Low blood sugar – or hypoglycemia – occurs when there is too little sugar in your blood. When low blood sugar occurs too often, you could have problems.

Causes

You might experience low blood sugar if you:

- Eat too few carbohydrates
- Skip or delay meals
- Take certain medications
- Take too much insulin or too many diabetes pills (ask your Diabetes Educators if this could apply to you)
- Are more active than usual

If low blood sugar is not treated, it can be fatal.

If low blood sugar is a problem for you, talk to your doctor or Diabetes Educators.

Always follow your doctor's recommendations since he or she may give you different target

goals based on your individual case and type of diabetes.

What to do about low blood sugar

Follow the **Rule of 15**:

- Check blood sugar. If less than 70, drink or eat 15 grams of a fast acting carbohydrate:
 - 4 oz. (1/2 cup) regular juice
 - 4 oz. (1/2 cup) regular soda
 - 8 oz. (1 cup) of skim milk
 - 3 or 4 glucose tablets
 - 5 or 6 candies you can chew quickly, such as mints
- Wait 15 minutes and check blood sugar again. If it is still low, repeat with 15 grams of a quick acting carb or eat your next meal/ snack early.
- If your blood sugar does not improve after eating or drinking carbohydrates, call 9-1-1 and continue to eat/drink carbohydrates and check your blood sugar every 15 minutes while waiting for help.

Signs and Symptoms of Low Blood Sugar



Shaky



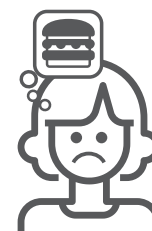
Sweaty



Dizzy



Confusion
and difficulty
speaking



Hungry



Weak or tired



Headache



Nervous or upset

High Blood Sugar (hyperglycemia)

High blood sugar – or hyperglycemia – occurs when there is too much sugar in your blood.

Over time, that can cause serious health problems.

Causes

High blood sugar can happen if you:

- Skip a dose of insulin or diabetes medicine
- Eat more than usual
- Are less active than usual
- Are under stress
- Are sick

What to do about high blood sugar

The best way to avoid high blood sugar is to follow your diabetes care plan.

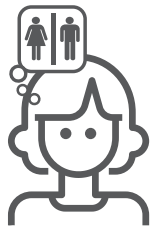
Call your diabetes care team if your blood sugar has been higher than your goal for three days and you don't know why.

Of course, the best way to know if you have high blood sugar is to check your levels regularly, as directed by your doctor.

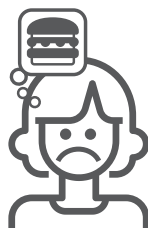
Signs and Symptoms of High Blood Sugar



Very thirsty



Needing to pass urine more than usual



Very hungry



Sleepy



Blurry vision



Infections or injuries heal more slowly than usual

Diabetes Action Plan

GREEN ZONE: All Clear

If you have any of the following:

- Most fasting blood sugars are less than 95
- Average blood sugars one hours after meals are less than 130-140
- No low blood sugars are less than 70
- HbA1C is less than 6.5%

Then:

- Your blood sugars are under control
- Continue taking your diabetes medications and doing home blood sugar testing
- Follow healthy eating habits and activity goals
- Bring your blood glucose (BG) log and food diary to every prenatal visit

YELLOW ZONE: Caution

If you have any of the following:

- Most fasting blood sugars are over 95
- Average blood sugars one hour after meals are over 140
- Low blood sugars one to two times a week are less than 70
- HbA1c is above 6.5%

Then:

- You may need a medication change
- Improve your eating habits
- Increase your activity level
- If your blood sugars are not better in 1-3 days, call your doctor, diabetes educator or home health nurse

RED ZONE: Medical Alert

If you have any of the following:

- Most fasting blood sugars are greater than 100
- Average blood sugars one hour after meals are greater than 200
- Frequent low blood sugar
- Moderate to large ketones (type 1 only)
- Use of glucagon kit
- HbA1c is above 6.5%

Note: Consider insulin therapy.

Then:

- You need to be seen by your health care provider.
Call your doctor or diabetes team.

Note: You may need to be seen by your doctor weekly for follow-up to get your blood sugar under control.

Always follow your doctor's recommendations since he or she may give you different target goals based on your individual case and type of diabetes.

Contact information for home care, family doctor or endocrinologist

Name: _____

Phone: _____

Name: _____

Phone: _____

Problem-solving

Controlling your blood sugar is hard work. People are busy and have a lot of responsibilities. Eating a healthy diet, exercising regularly, taking medication and monitoring your blood sugar all take time and effort. Having a routine and being prepared for unexpected roadblocks can make controlling your blood sugar easier.

The key to meeting the challenge of controlling your blood sugar is to plan ahead, act and learn from your mistakes. Keep a diary of your blood sugar values, your diet and your activity. Looking at a record of these three things can help you see what is working and what is not working. Forgive yourself for mistakes. Join a support group to learn from others who have faced the same problems.

Problem: *There are so many things I need to control my blood sugar.*

Solution:

- Keep your blood sugar meter and supplies, insulin and syringes, or insulin pens and needles in a safe place together.
- Store unopened insulin in the refrigerator.
- Buy or make a pouch or case to keep the needed supplies together when away from home.
- Keep all medications and needles away from children.

Problem: *Eating right is hard, especially when time is tight.*

Solution:

- Plan meals and snacks ahead of time.
- Consider creating a menu for several days into the future.
- Write a grocery list with all the needed ingredients on it.
- Prepare several meals at a time and freeze to eat later.

- Pack leftovers for lunches at work to avoid missing a meal or grabbing whatever is available. Bring a snack to work in case your blood sugar gets low.

Problem: *Eating right when I am away from home is even harder.*

Solution:

- Carry food with you so that you have healthy food choices, even if you are delayed on the road.
- Download an app on your phone to help you keep track of carbs when eating at popular restaurants.

Problem: *What about eating on holidays and special occasions?*

Solution:

- Decide ahead of time what one holiday treat you cannot skip and have a small portion.
- Bring a dish to the party that you can enjoy and share.
- Experiment with holiday recipes to reduce sugar and fat.
- If well-meaning family urges you to eat too much, politely explain that you are eating for your health.

Problem: *What about emergencies?*

Solution:

- When the weather forecast is bad, make a trip to the store so that you have healthy food at home.
- Have some foods on hand that do not need to be in the refrigerator in case there is a power outage.
- Keep some hard candy in your purse or pocket, in your glove compartment and next to your bed so if your blood sugar is low, a source of carbohydrates is handy.

Problem: *Finding time to exercise is hard.*

Solution:

- Pick activities that you enjoy so that you will make time.
- Have both outdoor and indoor choices so that bad weather doesn't prevent you from exercising.
- Find an exercise buddy. You can encourage each other on the days one of you does not feel like exercising.
- Exercise while watching a favorite show. Take a 10-minute walk on your lunch break.
- When traveling, pack exercise videos, use the motel pool or gym, or take walks.
- Exercise can be broken down into smaller time periods. Being active is better than sitting still.

Problem: *No matter what I do, my blood sugars are too high or too low or both.*

Solution:

- Keeping a diary of your blood sugars, exercise and food will help you and your doctor figure out what may be the cause of high or low blood sugars.
- Ask for expert help. Take your diary to appointments with your doctor and with your diabetic educator. They may be able to spot the reason your blood sugar has been out of control.

Diabetes Care Checklist

Vaccination recommendations

Vaccines are very important for people with type 1 or type 2 diabetes. People with diabetes are more likely to get the flu and other infections than people without diabetes. Diabetes can make the immune system less able to fight infections while the infection makes blood sugar control more difficult.

When people with diabetes get sick, they are at risk for pneumonia, bronchitis, sinus infections and ear infections. The good news is the immune system of a diabetic person responds to vaccinations as well as a nondiabetic person's.

People with diabetes should take everyday precautions including avoiding sick contacts. Those with flu-like symptoms should stay home for 24 hours after the fever is gone (without the use of fever-reducing drugs). Covering nose and mouth when sneezing and coughing with a tissue; not touching eyes, nose and mouth; washing hands often; and cleaning surfaces such as keyboards and phones between users are all recommended as everyday preventive actions.

Diabetics should have a sick-day plan and supplies to implement the plan on hand. *(See section on sick-day plans.)*

CDC vaccine recommendations for diabetes in pregnancy

- Flu vaccine every year
- Tdap vaccine to protect against tetanus, diphtheria and whooping cough
- Hepatitis B vaccine series to protect against hepatitis B. Discuss with your OB provider.



Know your numbers

Diabetes affects many aspects of your health. Uncontrolled high blood sugar over the long term can lead to health problems for people with type 1 and type 2 diabetes. These problems include:

- Damage to nerves (neuropathy), which can cause numbness or discomfort in your hands or feet or may affect organs such as your stomach
- Damage to blood vessels in the eyes (retinopathy), which may lead to blindness
- Damage to blood vessels in the kidneys, which may lead to kidney failure
- Blockages in blood vessels, which can cause heart disease or stroke
- Blockages in the blood vessels in the legs, which can lead to slow-healing sores on the legs and feet and even to amputation

In addition to controlling your blood sugar, regular follow-up with your doctor is important in maintaining overall wellness. Regular monitoring of the items below will help keep you on track.

A1C: at least two to four times per year

- Goal A1C: less than 6-6.5% in pregnancy

My A1C: _____

Blood pressure: check with every doctor's visit

- Goal blood pressure in pregnancy: <130/80 mmHg _____

My blood pressure: _____

Pregnant women with type 1 or type 2 diabetes may be prescribed a 81 mg aspirin beginning at the end of the first trimester to reduce the risk for preeclampsia.

Cholesterol check: at least once every year

- Goal HDL (good) cholesterol: men greater than 40 mg/dl, women greater than 50 mg/dl
- Goal LDL (bad) cholesterol: based on your risk for heart disease—discuss with your doctor

- Goal triglycerides: less than 150 mg/dl

My HDL: _____

My LDL: _____

My triglycerides: _____

Complete eye exam: every year. Call your eye care specialist with any changes in vision.

Date of next complete eye exam: _____

Complete foot exam: every year. Let your doctor know if you have problems such as loss of feeling or tingling, changes in shape, or sores on your feet. Take your socks and shoes off during every office visit.

- At home, check your feet every day. Inspect for cuts, blisters, cracks, swelling and dry skin. Wear shoes and socks that fit well. Do not go barefoot or wear sandals.

Date of next complete foot exam: _____

Kidney exam: every year. Have your urine and blood tested to monitor kidney function.

Date of next kidney exam: _____

Dental exam: at least every year. Let your dentist know if you have bad breath or bad taste; red, sore, swollen, tender or bleeding gums; receding gums; loose teeth or teeth that have moved; pain while chewing or sensitive teeth; longer-appearing teeth, change in bite; change in fit of partial dentures; or a history of mouth or gum abscesses.

- Brush teeth twice daily with a soft-bristled toothbrush and fluoride toothpaste. Floss daily.

Date of next dental exam: _____

Quit smoking: decide on a quit date and reward yourself for small victories. For free help, call 1 800 QUIT NOW or visit smokefree.gov.

My quit date: _____

It is recommended that people with diabetes wear a medical ID bracelet and/or carry an ID card indicating that you have diabetes.

Coping

People with diabetes are more likely to have depression than people without diabetes. This may be due to:

- The strain of managing diabetes on a daily basis
- Feeling alone and “different” from family and friends
- Feeling out of control if you are having trouble keeping your blood sugar in your target range

Depression can make it hard to follow your diabetes care plan. If you are depressed, you may not have the energy to:

- Prepare and eat healthy meals
- Get regular exercise
- Take diabetes medicines
- Check your blood sugar

Tell your health care team if you:

- Don't have interest or find pleasure in your activities
- Avoid talking about your diabetes with family and friends
- Are worrying that diabetes is affecting your baby's health
- Sleep most of the day or can't sleep at night
- Struggle with finding motivation or making a plan to manage your diabetes
- Don't see the use in taking care of yourself
- Feel like diabetes is controlling you
- Feel like you can't take care of yourself

Diabetes is also linked to stress. Stress can increase your blood sugar and make you more likely to overeat. Consequently, increased blood sugar levels can cause stress.

Consider healthy ways to cope with depression and stress from living with diabetes:



- Physical activity
- Breathing exercises/relaxation
- Make small, reachable goals and celebrate when you achieve them
- Replace negative, defeating thoughts with positive, more realistic ones
- Ensure healthy sleep patterns
- Get help from your diabetes care team
- Go outside
- Help others/volunteer/make social contact
- Consider joining a support group

Free Smartphone Apps for Diabetes Management

1. **Bant** – Log blood sugar readings and provide trend data for up to 90 days (iPhone)
2. **Blood Sugar Tracker** – Log blood sugar levels, set target blood sugar ranges and view history and simple graphs to identify numbers that are out of range (iPhone)
3. **Diabetes Companion** – Complete nutrition facts for common foods, tons of recipes, videos, Q&A for common diabetes-related issues and blood sugar tracking tools (iPhone)
4. **Diabetes Log** – Track sugar readings, carbohydrate intake and insulin dosage by date (iPhone)
5. **GluCoMo** – Track blood sugar levels, insulin intake and other health areas such as blood pressure, weight, activity and heart rate (iPhone)
6. **Glucose Buddy** – Enter blood sugar numbers, carbohydrate intake, insulin dosage and activity (iPhone and Android)
7. **Vree for Diabetes** – Blood sugar tracking, nutrition tracking, activity tracking, medication tracking, progress charts and blood pressure tracking (iPhone)
8. **WaveSense Diabetes Manager** – Track blood sugar results, carb intake and insulin doses. Features include a logbook, trend chart, email reports, color-coded results, video content and customizable target ranges for high/low blood sugar limits and mealtime schedules (iPhone)
9. **Carb Master Free** – Track carbohydrate intake plus calories, fat, sugar, protein and fiber for the day (iPhone)
10. **Diabetes Buddy Lite** – Track factors that influence blood sugar levels such as daily carb intake, glucose measures, medication and food and water intake (iPhone)

Free Nutrition Information/Healthy Living Apps

1. **CalorieKing** – Calorie, fat and carb counts for 70,000+ foods with an up-to-date list that includes 260 fast-food chains and restaurants (iPhone and Android)
2. **GoMeals** – Large list of restaurant foods and grocery store items; has customized settings for counting daily calories, carbs, fats and other nutrients (iPhone and Android)
3. **MyFitnessPal** – Allows user to set a daily calorie goal and record daily food intake and exercise. Has a very large food database. Calculates calories burned by exercise (iPhone and Android)
4. **Lose It!** – Can be used as a weight-loss tool; helps with keeping track of food intake and exercise (iPhone and Android)
5. **ShopWell** – Can help you build a healthy grocery list, create a profile with health, nutrition and weight goals, as well as scan item barcodes of more than 60,000 foods (iPhone and Android)
6. **Cook'n** – Allows you to create, edit and view recipes. Helps organize, search and email your favorite recipes and allows you to make a cookbook and do grocery list and menus (iPhone and Android)
7. **MyPlate** – Allows you to see food nutrition labels with total carb/protein content and tracks daily intake. Has many popular restaurant menus

Websites and Resources

American Diabetes Association

diabetes.org

Local Office:

4555 Lake Forest Drive, Suite 396
Cincinnati, OH 45242
513 759 9330

Centers for Disease Control and Prevention

cdc.gov/diabetes

Choose My Plate

choosemyplate.gov

JDRF—Type 1 Diabetes

jdrf.org

Joslin Diabetes Center

joslin.org

Nation Health Information Center

health.gov/nhic

National Institute of Diabetes and Digestive and Kidney Diseases

niddk.nih.gov

Children With Diabetes

childrenwithdiabetes.com

Cincinnati Children's Diabetes Center

cincinnatichildrens.org/service/d/diabetes/team

TriHealth Diabetes

TriHealth.com/Diabetes

TriHealth Seniority Group

TriHealth.com/institutes-and-services/senior-services/seniority

TriHealth Weight Management

TriHealth.com/hospitals-and-practices/trihealth-weight-management

TriHealth Fitness Pavilion

TriHealth.com/hospitals-and-practices/trihealth-fitness-and-health-pavilion

Health Coach Programs

Novo Nordisk Cornerstones4Care®

cornerstones4care.com

AstraZeneca Fit2Me

fit2me.com

TriHealth Employees

TriHealthLifestyles.com

Prediabetes

Do I Have Prediabetes?

doihaveprediabetes.org

YMCA Diabetes Prevention Program

ymca.net/diabetes-prevention

cincinnatiymca.org/health-fitness/healthy-living

National Diabetes Prevention Program

cdc.gov/diabetes/prevention/index.html

After Pregnancy Outpatient Diabetes Education

To make an appointment with a diabetes educator and dietitian, call:

Bethesda North Hospital 513 569 6777

Good Samaritan Hospital 513 569 6602

McCullough-Hyde Memorial Hospital | TriHealth 513 524 5555

Your insurance company may cover the cost of your visits, or you can make self-payment arrangements. Currently, Medicare allows 10 hours of education the first year after you are diagnosed and then pays for two hours each year after for an update of current information.

Talk with your primary care doctor if you would like to enroll in any of the classes below.

1. Diabetes self-management education/training program

A series of classes will be scheduled. During the first class, the educator performs an initial review to develop a teaching plan designed specific to the patient's needs. The patient may also receive education on blood sugar testing and basic diet guidelines.

Throughout the next classes, the program educators work with the patient, family and doctor so the patient can manage diabetic symptoms and lead a healthy, normal life. During the classes, patients will learn a variety of self-care skills, including:

- Self-monitoring of blood sugar
- Medications
- Healthy eating
- Behavior change to lower risk for diabetes-related problems
- Exercise

2. Medical nutrition therapy (MNT) for diabetes

Nutrition therapy with a registered dietitian (RD) for a meal plan designed for you. Medicare allows for three hours in the first year and two hours each year after.

3. Annual review classes (follow-up training)

After you complete the diabetes self-management education/training program, you may meet with an RN and RD every year for a two-hour review class. Topics include healthy eating, blood sugar testing, medications, exercise, lifestyle changes and problems related to diabetes.

4. Prediabetes classes

Prediabetes classes are offered for a \$20 fee (cash only). No insurance claim is filed and no provider order is needed (Bethesda North Hospital and Good Samaritan Hospital only).

Bethesda North Hospital

10496 Montgomery Road
Suite 206
Cincinnati, OH 45242
Fax: 513 569 6617
Scheduling: 513 569 6777
or 513 569 6602
Contact: 513 865 1126

Good Samaritan Hospital

375 Dixmyth Avenue
Cincinnati, OH 45220
Fax: 513 569 6617
Scheduling: 513 569 6777
or 513 569 6602
Contact: 513 862 2879

McCullough-Hyde Memorial Hospital | TriHealth

110 North Poplar Street
Oxford, OH 45056
Fax: 513 524 5409
Scheduling: 513 524 5555
Contact: 513 524 5692
or 513 524 5691

Glossary

Blood glucose or blood sugar – The amount of a sugar called glucose in the blood. Normal blood sugar is between 70 and 180 mg/dl.

Carbohydrates – Food group consisting of starchy and sugary foods, both naturally sweet foods, such as fruit and foods to which sugar has been added. Carbohydrates are changed to glucose in the digestive tract. 15 grams of carbohydrates equals one carbohydrate serving.

Cholesterol – A waxy, fat-like substance used by the body to build cell walls. If too much is present, it can build up and block arteries.

Diabetes – A group of diseases that results from too much sugar in the blood.

Diabetic ketoacidosis (DKA) – A health emergency in which the body does not have enough insulin and cannot break down sugar. Without enough insulin, your body begins to break down fat as fuel. This process produces a buildup of acids in the bloodstream called ketones.

Diabetologist – A doctor that specializes in diabetes care.

Endocrinologist – A doctor who specializes in diabetes and how hormones work in the body.

Fasting blood sugar – A blood sugar that is checked after you have not eaten for at least eight hours.

Glucagon – A hormone that quickly raises blood glucose levels.

Glucose – A simple sugar needed by the body for energy. Carbohydrates are digested to glucose.

Glucose meter – A machine that shows the amount of sugar in the blood using a small drop of blood.

Hemoglobin A1C – A blood test that shows the average blood sugar level for the past two to three months.

Hormone – A chemical produced in the body that acts as a signal for another part of the body to produce a particular response.

Hyperglycemia – A condition in which there is too much glucose in the blood. Usually defined as a blood sugar level greater than 140 mg/dl.

Hypoglycemia – Blood sugar that is lower than the normal range. Usually defined as a blood sugar less than 70 mg/dl.

Hypoglycemia unawareness – When a diabetic does not have symptoms of low blood sugar even though her blood sugar is less than 70 mg/dl.

Impaired fasting glucose – The condition in which a blood sugar obtained at least eight hours after the last time you ate is high (100 to 126 mg/dl) but lower than the blood sugar level used to diagnose diabetes.

Impaired glucose tolerance – The condition in which a blood sugar obtained two hours after drinking a sweet liquid during an oral glucose tolerance test is high (140 to 199 mg/dl) but lower than the blood sugar level used to diagnose diabetes.

Insulin – A hormone produced by the pancreas that helps your body's cells use glucose.

Insulin resistance – Insulin does not work effectively in the body to reduce blood sugar, resulting in high blood sugar. It is one of the causes of high blood sugar in type 2 diabetes and gestational diabetes.

Ketones – They are produced when the body burns fat for energy or fuel and when there is not enough insulin to help your body use sugar for energy. Without enough insulin, glucose builds up in the blood. Because the body is unable to use glucose for energy, it breaks down fat instead.

Lactic acidosis – A condition in which acid builds up in the blood stream because the tissues are not getting enough oxygen.

Lancet – A device that uses a tiny needle to prick the skin for a drop of blood.

Oral glucose tolerance test – A series of blood sugar checks taken before and after drinking a glucose containing liquid. This test is most often used to diagnose gestational diabetes.

Pancreas – An organ located behind the stomach that produces insulin and other hormones and digestive enzymes.

Postprandial blood sugar – A blood sugar measured after you eat.

Preprandial blood sugar – A blood sugar measured before you eat.

Protein – Food group consisting of meats, poultry, fish, eggs and nuts.

Random blood sugar – A blood sugar that is checked regardless of when you last ate.

Triglycerides – Building blocks of fats.

Pre-Existing Diabetes and Pregnancy

Potential Effects of Uncontrolled Diabetes Before and During Pregnancy

If you have diabetes and want to get pregnant, it is important for you to get and keep your blood sugar in control (meaning your Hemoglobin A1c level is within the limits set by your health care provider). Working to keep your blood sugar in control before and during pregnancy increases your chances of having a healthy baby and reduces the chances that you will have other problems. Uncontrolled diabetes increases the chances for the following problems you and your baby:

For You

- Worsening of any existing eye, kidney, heart, or nerve problems caused by diabetes
- Labor may start too early (preterm labor)
- Bladder and other infections
- Gum disease
- Injury from delivering big baby
- Cesarean section
- High blood pressure
- Preeclampsia (high blood pressure + protein in urine)

For more information, visit:

- Gestational diabetes factsheet: www.cdc.gov/diabetes/pubs/pdf/gestationalDiabetes.pdf
- Diabetes and Pregnancy web pages: www.cdc.gov/Features/DiabetesAndPregnancy/

For Your Baby

- Birth defects
 - Some heart defects
 - Some major birth defects of the brain and spinal cord
- Stillbirth or miscarriage
- Born very big (more than 9 pounds); if a big baby is delivered vaginally, it may have:
 - Injury to nerves in shoulder
 - Broken collarbone
- Low blood sugar after birth
- Yellow skin and eyes (jaundice)
- Obesity later in life

Remember

Working to control your blood sugar can help prevent these problems. If you have diabetes,

- Plan your pregnancy, if possible, and get your body ready before you get pregnant
- Eat healthy foods and stay active
- Take your medicines
- Monitor your blood sugar often
- Control and treat blood sugar right away
- Follow up with the doctor regularly

If you've never had a diabetes test and want to learn more about the symptoms, please visit www.cdc.gov/diabetes/consumer/learn.htm. If you think you might be at risk, talk to your doctor.



Insulin Comparison Chart

Insulin Name (Trade)	When does it start working? (onset)	When will the effect be the greatest? (peak)	How long will it lower blood glucose? (duration)	Notes for Use	Forms available
Rapid Acting Analogs					
Lispro (HumaLOG™)	<15 minutes	30-90 minutes	3-5 hours	If mixing with NPH, rapid acting insulin (clear formulation) should be drawn into syringe first. Mixture should be given immediately to avoid effects on peak action.	Nonformulary
Aspart (NovoLog™)	<15 minutes	30-90 minutes	3-5 hours		3 mL Kwikpen
Glulisine (Apidra™)	<15 minutes	30-90 minutes	3-5 hours		Nonformulary
Short Acting					
Regular (Novolin R™ or Humulin R™)	0.5-1 hour	2-4 hours	4-8 hours	If mixing with NPH, short acting insulin (clear formulation) should be drawn into syringe first. Mixture should be given immediately to avoid effects on peak action.	3 mL vial 20 mL vial (500 units/mL)—restricted
Intermediate Acting*					
NPH (Novolin N™ or Humulin N™)	1-2 hours	4-10 hours	10-18 hours	Cloudy formulation.	3 mL vial Both come in vials but only Humulin N comes in a pen (Kwikpen).
Long Acting Analogs					
Glargine (Lantus™)	1-2 hours	No peak	20-24 hours	Do not mix with other insulin formulations.	3 mL SoloStar® pen
Detemir (Levemir™)	1-2 hours	Relatively flat	Up to 24 hours (dose-dependent)		Both glargine and detemir are clear formulations.
Combinations					
NovoLIN 70/30 or HumuLIN 70/30	0.5-1 hour	2-10 hours	10-18 hours	70% NPH +30% regular insulin. Insulin action includes 2 peaks (1 from each formulation). Cloudy formulation.	3 mL vial
NovoLog Mix 70/30 or HumaLOG Mix 75/25 or 50/50	<15 minutes	1-2 hours	10-18 hours	Insulin action includes 2 peaks (1 from each formulation). Novolog Mix (cloudy formulation): aspart protamine 70% + aspart 30% Humalog mix (cloudy formulation): 75/25=75% lispro protamine + 25% lispro 50/50=50% lispro protamine + 50% lispro	10 mL vial—HumaLOG Mix 75/25 only

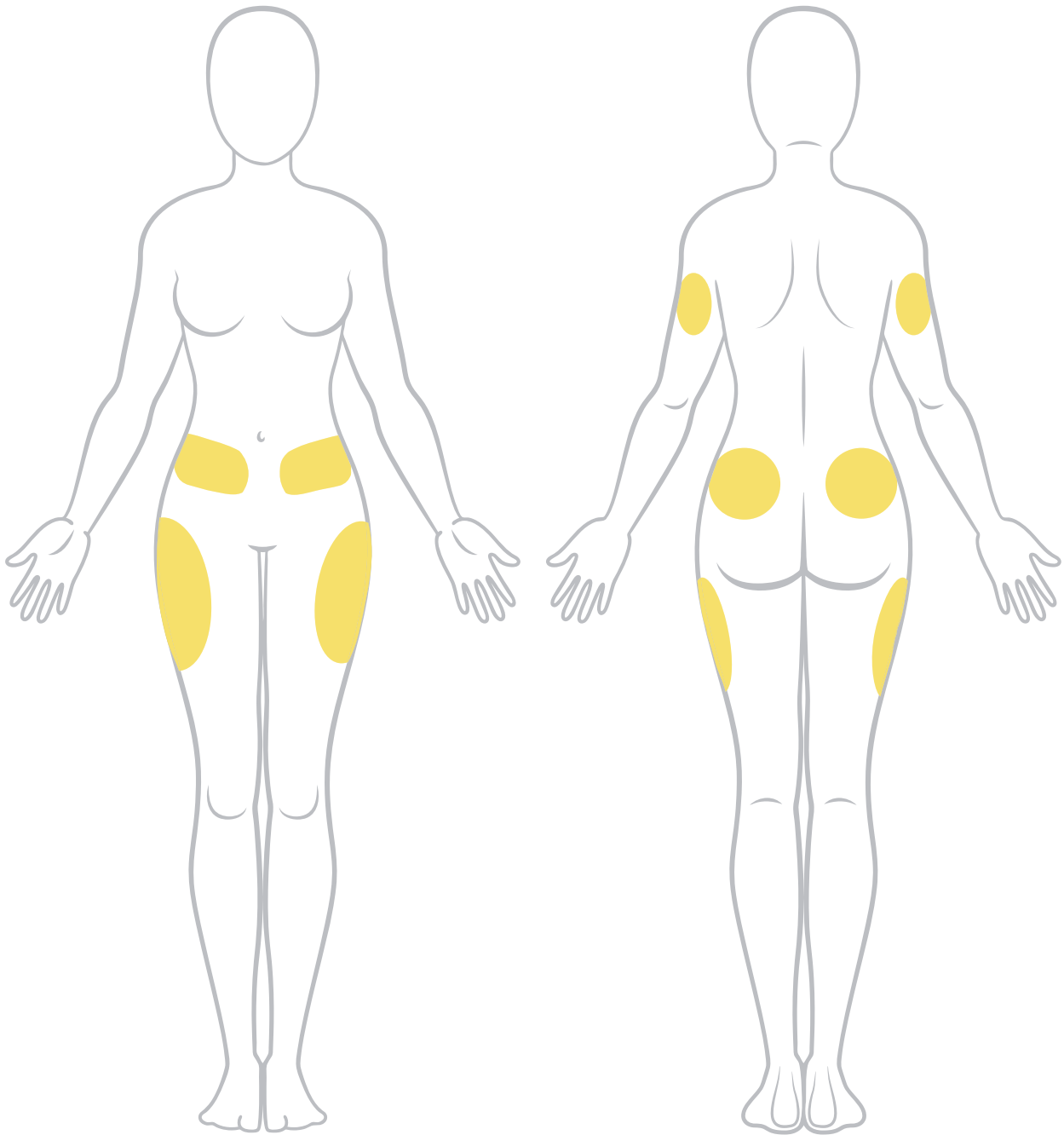
*All insulin preparations are 100 units/mL except concentrated regular insulin U500 containing 500 units/mL.

Onset, Peak, and Duration may vary considerably in different people.

Insulin analogs and analog mix formulations are available in prefilled pens:

- KwikPen® is a disposable pen manufactured for Lilly products including HumaLOG®, Humalog®, Humulin N.
- FlexPen® is a disposable pen manufactured for Novo Nordisk products including NovoLog® and Levemir®.
- SoloSTAR® pen is a disposable pen manufactured for Sanofi products including Lantus®, Apidra® and Admelog.

Where to Give An Insulin Shot



A1C Goal

4% **	65
5% ***	100
Pregnancy Goal < 6% ****	135
7% *****	170
8% *****	205
9% *****	240
10% *****	275
11% *****	310
12% *****	345
13% *****	380

Who is at risk for Gestational Diabetes:

- Are older than 25 years
- Are overweight
- Have had gestational diabetes before
- Had a large baby (9lbs. or more)
- Have a close relative with diabetes
- Have had a stillbirth in a previous pregnancy
- Are African American, American Indian, Asian American, Hispanic, Latina or Pacific Islander

Who is at risk for Type 2 Diabetes:

- Age 45 years or older
- Overweight
- Family History of Diabetes
- Physical Inactivity
- Ethnic Background: Native American, Hispanic, Asian, African American, Pacific Islander
- Previous abnormal glucose screening result
- High blood pressure
- High cholesterol
- History of gestational diabetes or a baby weighing more than 9 lbs. at birth
- Polycystic ovary syndrome
- History of cardiovascular disease

Sources: American College of Obstetrics and Gynecology, <https://www.acog.org/Patients/FAQs/Gestational-Diabetes#mellitus>

Blood Sugar Goals

Fasting (before breakfast)	Between 70-95 mg/dL
Before meals, snacks	Between 70-100 mg/dL
1 hour after breakfast, lunch & dinner	Between 100-140 mg/dL
Bedtime	Less than 90-120 mg/dL
2 – 3 a.m.	Between 70-105 mg/dL

Tips for Success

- Follow your meal plan and test your blood sugars every day.
- Teach your friends/family how to take care of you when you have a blood sugar less than 70.
- Test your blood sugar before driving or exercising. Before driving or exercising, treat blood sugar if less than 100.
- Keep records every day of blood sugars, meal plan, medicines, and physical activity.
- If you think your meter is not working, run a control test. If not working, call the customer service number on the back of your meter. Control test solution can be bought at any pharmacy and must match your meter brand.
- Do not leave meter in a car or anywhere with extreme temperature changes.
- Do not leave strips open to light, stored in high moisture area such as near a shower. Throw strips away after expiration date

Always follow your doctor's recommendations since he or she may give you different target goals based on your individual case and type of diabetes.

How to Mix Insulin

Drawing up a single insulin into a syringe

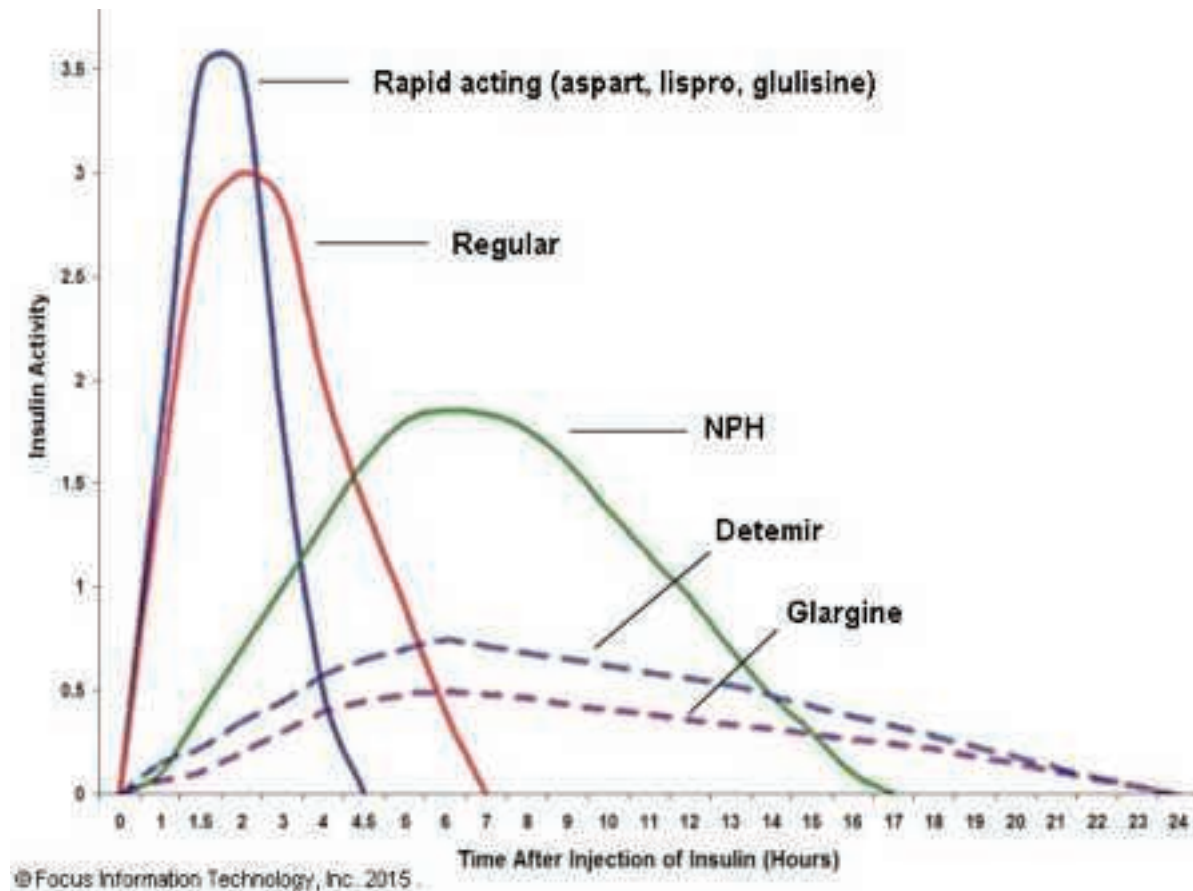
1. Wash your hands with soap and water.
2. Get insulin, syringes and alcohol wipes.
3. If you are drawing up NPH insulin, make sure to roll the insulin between your hands.
4. Pull air into the syringe equal to the amount of insulin that you need (Example: if you will be taking 10 units of insulin, pull 10 units of air into the syringe).
5. Leave the insulin bottle sitting on the counter and wipe the top of the bottle with an alcohol wipe.
6. Let the alcohol dry.
7. Take the syringe that has air in it and put it into the top of the insulin bottle (keep the bottle on a flat surface).
8. Push all the air from the syringe into the bottle and keep your finger on the plunger of the syringe to keep it from going back up.
9. Pick up the insulin bottle with the syringe still in the top, turning it upside down. Pull out the number of units of insulin you need for your dose.
10. Give the insulin.
6. Pull air into the syringe equal to the amount of NPH insulin (cloudy) that you need (Example: if you will be taking 7 units of NPH, pull 7 units of air into the syringe).
7. Take the syringe and put it into the top of the NPH (cloudy) insulin bottle (keep the bottle on a flat surface).
8. Push all of the air into the insulin bottle and take the syringe out of the top.
9. Pull more air into the syringe equal to the amount of Novolog/Humalog (clear) insulin that you need (Example: if you will be taking 5 units of Novolog/Humalog, pull 5 units of air into the syringe).
10. Take the syringe and put it into the top of the Novolog/Humalog (clear) insulin bottle (keep the bottle on a flat surface).
11. Always draw up clear insulin before cloudy insulin.
12. Pick up the insulin bottle with the syringe still in the top of the clear bottle and turn it upside down. Pull out the number of units of insulin that you need for your dose of Novolog/Humalog (clear) insulin
13. Then go to the NPH (cloudy) bottle and put the syringe into the bottle without putting pressure on the plunger.
14. Draw up the amount of NPH (cloudy) insulin you need.

You should now have a syringe with the total amount you figured out you needed from step #5.

Drawing up two different types of insulin into the same syringe

1. Wash your hands with soap and water.
2. Get insulin, syringes and alcohol wipes.
3. If you are drawing up NPH insulin, make sure to roll the insulin between your hands.
4. Wipe the tops of both insulin bottles with alcohol and let it dry completely.
5. Add up the two insulin doses so that you get a total for your insulin dose (Example: you need 7 units of NPH [cloudy] + 5 units of Novolog/Humalog [clear] = 12 units total).

Insulin Comparison Chart: Onset, Peak, Duration Times



<http://perinatology.com/Reference/OBPharmacopoeia-Public/Diabetes.htm>

Fast-Acting Insulin

Aspart (Novolog or Fiasp)
Lispro (Humalog or Admelog)
Glulisine (Apidra)

Intermediate Insulin

NPH (Humalin N)
NPH (Novolin N)

Long-Acting Insulin

Detemir (Levemir)
Glargine (Lantus)

Storage of Insulin: Any unopened insulin should be refrigerated and is good until the manufacturer's expiration date.

Open (in-use) vials or pens: Open insulin vials or pens may be kept in refrigerator but it is not necessary. NPH Pens must be discarded after 14 days. All other vials and pens in-use must be discarded after 28 days.

Store at room temperature if not greater than 86°F (30°C), away from direct sunlight and heat. (Do not leave in a car).

<http://care.diabetesjournals.org/content/26/9/2665>

Food and Exercise Goals

Name _____

Date _____

My Food/Nutrition Goals

1. _____

2. _____

3. _____

Exercise Goals

1. _____

2. _____

(Smart Goals: Specific, Measurable, Attainable, Relevant, Time-Bound)

Grocery List

Questions for next visit



[TriHealth.com](https://www.trihealth.com)