



Understanding Diabetes in Pregnancy

Type 1 and Type 2 Diabetes

 **Texas Children's**[®]
Pavilion for Women

Congratulations on your pregnancy! You have been trying your best to manage your diabetes before you were pregnant. Now we need to help manage your diabetes while you are pregnant, which might be a little more challenging.



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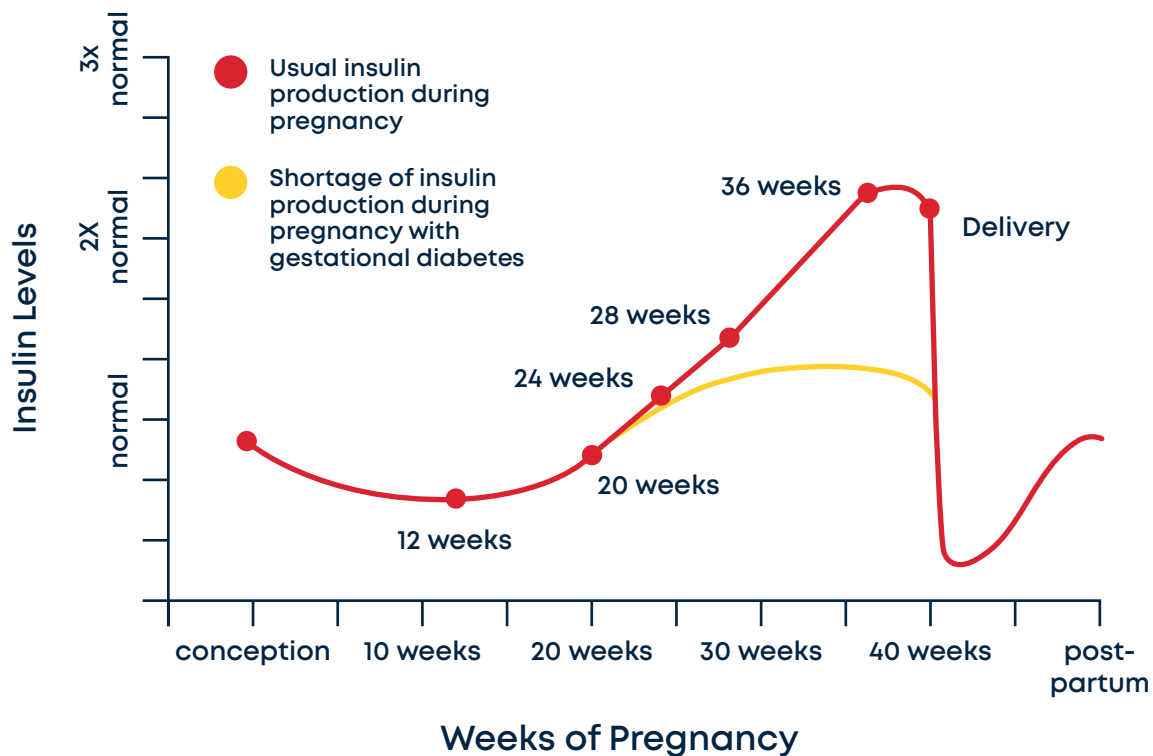
The information in this document is educational and not intended as medical advice or the practice of medicine. This information is not a substitute for the medical advice, diagnosis, or treatment of a health care provider based on the health care provider's examination and assessment of a patient's specific and unique circumstances. Patients must speak with a health care provider for complete information about their health, medical questions, and treatment options, including any risks or benefits regarding use of medications or treatments.

Insulin Needs in Pregnancy

The graph below shows the increasing insulin needs in pregnancy. Note that the insulin needs are two to three times higher in pregnancy from when you were not pregnant. Then there are additional fluctuations depending on what week of pregnancy you are.

- In the first 14 weeks of pregnancy, your insulin needs may actually slightly decrease.
- From weeks 14-17, your insulin dose will usually stay the same.
- From weeks 17-36, your insulin dose will likely increase every 1-2 weeks.
- At 36 weeks, your insulin tends to be more stable but you may need a little less insulin during the night.
- Immediately after your deliver, you will see a sudden decrease in insulin needs of 1/3-1/2 of your pre-delivery dose. Your insulin needs will likely go back to pre-pregnancy within a few days post-delivery.

Insulin Requirements during Pregnancy



Reader D., Davidson J., S. Larson. Gestational Diabetes: Caring for You and Your Baby. 4th Edition, 2008. International Diabetes Center, Park Nicollet, Minneapolis, MN

Possible Problems during Pregnancy

When your glucose levels are above target, your body passes on extra glucose to your baby. This increases the risk of your baby developing problems such as birth defects, macrosomia (very large baby), post-partum hypoglycemia, respiratory distress syndrome (RDS), or miscarriage/stillbirth in rare cases. Uncontrolled blood sugars may increase your risk of having a cesarean delivery, pre-eclampsia, as well as increased placenta fluid around the baby. Keeping your glucose levels within range can help prevent these problems and keep you and your growing baby healthy.

Management of Diabetes in Pregnancy

- If you have type 1 diabetes or type 2 diabetes and are on insulin, you will continue to take insulin to manage your glucose levels during pregnancy. If you have type 2 diabetes and took oral medications before pregnancy, your medications will most likely switch to insulin during your pregnancy to meet your body's increasing insulin needs.
- It is important to manage your diabetes closely in pregnancy through regular visits with your diabetes care team. Your Registered Dietitian (RD) and/or Certified Diabetes Educator (CDCES) will help you learn more about how to balance your insulin doses with a food and activity plan.

- Your food plan will tell you when to eat and how many grams of carbohydrates to eat for each meal and snack.
- If cleared by your pregnancy care provider, try to get moderate physical activity (such as walking or swimming) most days of the week. This helps your body use insulin better, lowers your glucose levels, and helps to control weight gain.

During and After Delivery

- During labor and delivery, your glucose levels will be monitored carefully to keep them between 60 and 100 mg/dL to ensure a safe delivery for you and your baby.
- After your baby and placenta have been delivered, your baby's glucose level will be monitored for a few hours and your insulin needs will decrease suddenly. Your diabetes care provider will help you determine your insulin doses after pregnancy and you should have a follow-up visit within 2-4 weeks after birth.

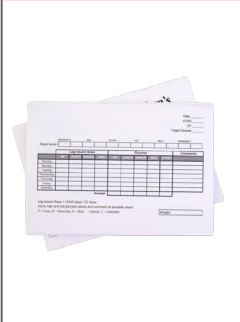


Glucose Monitoring

Blood glucose (BG) monitoring

How to Monitor Blood Glucose

Equipment

Blood glucose meter	Test strips for your home meter	Lancets	Lancing device	Logbook	Sharps container
					

Blood Glucose Monitoring

- With type 1 and type 2 diabetes in pregnancy, it is recommended to increase your blood glucose testing to 6 times a day, testing before and 2 hours after your three main meals. This will help your diabetes care team better manage and adjust your medications and treatment.
- Keep a record of your daily glucose values to review at your appointments with your diabetes care team. You may also be asked to keep a food log for a few days along with your blood glucose records.

- Record blood glucose level in the logbook
- Dispose of the used lancet in an approved sharps container (example: empty detergent bottle)

You may also need to check more often

- If you are sick
- Anytime with symptoms of hyperglycemia or hypoglycemia
- If long-acting insulin dose was increased
- If extra physical activity occurred
- If advised by your diabetes team

Steps for monitoring

- Wash hands with soap and warm water or use an alcohol swab, make sure they are completely dry
- Load lancing device with lancet
- Insert a test strip in the meter
- Use the lancing device, poke the clean side of the fingertip
- Gently squeeze the base of the fingertip to get a drop of blood
- Apply blood to the test strip
- In a few seconds, the meter will display a number on the screen (blood glucose level)

Supply storage

- Keep glucose meter test strips in their original container at room temperature, away from sunlight, high-humidity areas and very hot or cold weather.
- Monitor expiration dates based on manufacturer guidelines.



Glucose levels

Acute Complications

Hypoglycemia

What is Hypoglycemia?

Hypoglycemia (low blood glucose) is when your glucose level is below 70 mg/dL.

Severe low glucose can be unsafe for you and baby.

What causes it?

- **Too much insulin or diabetes medication.** High doses of insulin or medication, or getting too much insulin for the amount of carbohydrates eaten.
- **Exercise.** Being physically active, especially if high intensity or for long periods of time may cause hypoglycemia. Hypoglycemia can occur from the time of exercise to up to 12 hours after exercise is completed.
- **Not enough food.** If someone is not able to eat due to nausea, sickness, or lack of appetite when taking diabetes medication; or not finishing the planned carbohydrate at the meal for which medication was given.

How do I know if I am Hypoglycemic?

If you feel the following symptoms or see someone with the following symptoms: sweating, blurry vision, dizziness, anxiety, hunger, irritability, shakiness, fast heartbeat, headache, weakness, fatigue.

How do I treat hypoglycemia?

Check glucose with a fingerstick. Be sure your reading is actually below 70 mg/dL. If your reading is not under 70 mg/dL but you still feel symptomatic, try having a 5-8 gram carbohydrate snack. (Example: 2 Starbursts, 3 Lifesavers, or 1/4 cup juice)

Treat! If your reading is below 70 mg/dL perform the following steps:

1. Have a 10-15 gram carbohydrate snack (choose ONE from the ones listed below).
 - 2-4 glucose tablets
 - 1/2 cup juice
 - 1/3 can of regular soda
 - 4 StarburstWait 15 minutes and then re-check glucose.
2. After 15 minutes, if your reading has not risen to >70 mg/dL, then repeat treatment.
3. Once readings are >70 mg/dL you may have a 15g carbohydrate snack with a lean protein choice (example: apple and peanut butter) to sustain yourself until the next meal.
4. If you are prescribed rapid acting insulin and it is time for your next main meal, once your reading is >70 mg/dL, you are safe to take your insulin dosage as prescribed at meal times.

Call your doctor. If your readings continue to be low after more than 2 times of treatment, call your health care provider.

Note: If you are using an insulin pump with controlled automated insulin delivery, you might need less carbohydrates to treat a low blood sugar (8-10 grams) since insulin pump is already suspending insulin.

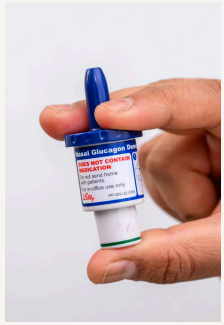
In the event of severe hypoglycemia, you may not be able to treat a low blood sugar by yourself and/or can become unconscious, in these situations have a friend/family administer Glucagon and/or call 911.

Emergency Contacts: Pavilion for Women: 832-826-7500

How to administer glucagon

Glucagon is the rescue medication for severe hypoglycemia (low blood glucose). It is a hormone released by the pancreas that tells the liver to release stored glucose to raise blood glucose levels. It should be used when a person with diabetes who uses insulin is either unconscious or unable to respond to the usual treatment of hypoglycemia. Possible glucagon side effects are nausea and vomiting.

Glucagon comes in the form of a nasal powder, pre-filled syringe, auto-injector, and vial kit.

Baqsimi® nasal powder	Gvoke® PFS (pre-filled syringe)	Gvoke® HypoPen (autoinjector)	Gvoke® Kit (vial kit)	Zegalogue® prefilled syringe	Zegalogue® Autoinjector
					

Baqsimi® (Glucagon nasal spray):

Store Baqsimi® at temperatures up to 86°F (30°C).

- 1 Remove shrink wrap by pulling on red strips.
- 2 Open lid and remove device.
- 3 Hold device between fingers and thumb.
- 4 Insert tip gently into one nostril.
- 5 Push plunger all the way in until green line disappears.
- 6 Position individual on their side after administration as medication can cause nausea and/or vomiting.



1

Hold the device between fingers and thumb, do not push plunger yet.



2

Insert tip gently into one nostril until fingers touch the outside of the nose.



3

Push plunger firmly all the way in until green line disappears.

Gvoke® or Zegalogue® (Glucagon pre-filled syringe and auto-injector pen)

(Both brand-name medications come in set doses of 1.0 mg or 0.5 mg, in either a pre-filled syringe or an auto-injector pen.)

Storage

- Gvoke® should be stored in the original foil pouch until time of use and should be kept at room temperature: 20°C to 25°C (68°F to 77°F). Do not refrigerate or freeze Gvoke®. Protect from light exposure.
- Zegalogue® should be stored in a refrigerator (36 °F to 46 °F) for up to 3 years, until the printed expiration date on the label. Once removed from refrigeration, Zegalogue® can be stored at room temperature (68 °F to 77 °F) for up to a year, or until the original expiration date on the label, whichever comes first. Do not return to the refrigerator after storing at room temperature.

Instructions for using pre-filled syringe

- 1 Remove from foil pouch.
- 2 Pull cap off the syringe.
- 3 Pinch skin of upper arm, lower stomach, or outer thigh (subcutaneous).
- 4 Insert the needle at a 90-degree angle with skin being pinched.
- 5 Push the syringe plunger as far it will go to deliver the medication.
- 6 Turn individual on their left side after injection as this medication can cause nausea and/or vomiting.



Instructions for using auto-injector pen

- Remove from foil pouch.
- Pull off cap from the device.
- Push yellow end onto abdomen, upper arm, or thigh (subcutaneous) until window is completely red.
- Turn individual on their left side after injection as this medication can cause nausea and/or vomiting.



Tips to Remember

- Call 911 after administering glucagon. Give carbohydrates if able to swallow. Re-check blood glucose in 15 minutes.
- Check the manufacturer's expiration date on all glucagon.
- For Baqsimi®, do not remove shrink wrap until time of use. If on warfarin or beta blockers Baqsimi® may alter the effectiveness. Speak to your doctor for more information.
- For Gvoke® and Zegalogue®, do not open pouch/box until time of use. If on warfarin or beta blockers Gvoke® and Zegalogue® may alter the effectiveness. Speak to your doctor for more information.
- Store all glucagon at room temperature away from direct sunlight and according to manufacture's recommendations.
- Contact your Diabetes care team to review blood glucose and insulin doses.
- Gvoke® and Zegalogue® also available in vial kits. See package insert for administration information.

Hyperglycemia

What is Hyperglycemia?

Hyperglycemia (high blood glucose) is when your glucose is **above** the target range. The chart below represents age appropriate target blood glucose ranges in mg/dL.

	Fasting	Pre-Meal	2 hours Post-Meal	Bedtime
< 18 years old	90-130	90-130	<180	90-150
Pregnancy	70-95	70-130	70-120	70-130
Non-Pregnant Adults	80-130	80-130	<180	80-130

What causes Hyperglycemia?

- **Too little insulin or diabetes medication, or inappropriate use.** Missing medication or an insulin dose, not matching the insulin dose to the carbohydrates eaten, too low of an insulin dose, or using expired/spoiled insulin.
- **Too much food** without additional insulin.
- **Sickness and Stress.**
- **Other medications.** Some medications such as steroids (prednisone, hydrocortisone, and dexamethasone) can raise glucose. In addition, some children's medications may contain additional sugar.
- **Hormones.** Hormone changes in pregnancy can lead to high glucose levels.
- **Less physical activity.** Decrease in exercise may impact your glucose control.

How do I know if I have Hyperglycemia?

Most of the time, there are no symptoms; which is why it is important to test glucose often. When your glucose is very high you may feel the following symptoms or see someone with the following symptoms: frequent urination, dry skin, hunger, blurred vision, drowsiness, nausea.

How do I treat Hyperglycemia?

Check glucose with a finger stick. (Do not use your continuous glucose monitor reading). Be sure your reading is above your target range before doing any form of treatment.

Treat! If your glucose is above target, there are a few ways to treat hyperglycemia.

- **Check for Ketones.** Use urine ketone test strips or blood ketone meter if readings are >200 mg/dL on two consecutive reads more than 3 hour apart).
- **Drink water or sugar-free fluids with electrolytes.** (16 oz. per hour for adults, and 1 oz. per hour per year of age up to 16 for children). Fluids can help our bodies naturally flush out glucose and ketones. These are a few sugar-free fluid options that contain electrolytes:
 - Pedialyte or Pedialyte popsicles
 - Gatorade 2- sugar free
 - Powerade Zero
 - Drip drop
- **Walk.** Exercise can help bring down glucose if your reading is above target. If your reading is >200 mg/dL and you have ketones, **DO NOT EXERCISE** as this can lead to higher glucose and ketone levels. If no ketones are present, you are permitted to exercise.
- **Take Medication as Directed.** If you are prescribed medication, take it as instructed by your health care provider. Call your physician if ketones are present and medication was given.

What if I treat and my readings are still high, and I feel sick?

If your readings are 200 mg/dL if pregnant, ketones are present, and you are vomiting, you may be in Diabetic Ketoacidosis (DKA). **Call your doctor and/or go to the Emergency Room.**

Emergency Contacts: Pavilion for Women: 832-826-7500

Ketones and Ketone Testing

Causes

Ketones are caused when the body breaks down fat for energy. Normally, the body will use carbohydrates as the main source of energy. However, in absence of insulin or not enough insulin, body is unable to absorb carbohydrates appropriately, or if on very low carbohydrate diet, body will use fat for fuel instead. Ketone buildup can happen more quickly during pregnancy and can cause a serious problem called diabetic ketoacidosis (DKA). High amounts of ketones in the blood can make the body acidic and ketones can pass to your baby through the placenta, leading to serious health conditions for mom and baby.

Symptoms

Having ketones can cause symptoms such as nausea, vomiting, abdominal cramps/pain or fruity smell to breath. It is recommended to test urine or blood ketones in presence of any of these symptoms or high blood sugar due to the risk of developing a potentially life threatening condition called diabetic ketoacidosis (DKA).

DKA is an electrolyte imbalance that can cause flushed, hot, dry skin, a fruity breath odor, restlessness, rapid breathing, and loss of appetite. DKA can be fatal.

When to Test for Ketones

- If glucose > 200 for pregnant women
- During illness
- In presence of nausea, vomiting or stomach pain
- Fruity smell to breath
- Feeling/appearing flushed

Home Testing

- Use a blood ketone meter if instructed by your health care provider.
- Use Urine ketone strips. This requires collecting a clean urine sample in a small cup and following the manufacturer’s instructions on test strip bottle for complete instructions and results.

Negative or Trace	Small	Moderate	Large
No action needed. This is a normal result.	Drink plenty of sugar-free fluids. Re-check glucose in 2-3 hrs.	Rapid acting insulin is required. Use as directed or contact health care provider. Use pump action plan if having an insulin pump.	Go to the Emergency Room!

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Sick day management

People with diabetes get sick like everyone else, but they may require additional care to keep glucose levels close to target range. Glucose may rise with infections, inflammation, stress, pain, and some medications. Alternatively, hypoglycemia (low glucose) may result from a decrease in food intake or the body using more energy to fight illness. It is especially important to closely monitor glucose and ketone levels during illness and aim to keep glucose levels close to target range for a faster healing time.

Steps to Take When You Are Sick

- 1 Continue to take medications as directed by your physician, especially if you are taking insulin.** It is especially important for a person with diabetes to continue taking their medications as directed. If glucose levels are outside of target range, contact your diabetes clinic for assistance with adjusting insulin doses. When prompted by the meter display, place a drop of blood on the strip.
- 2 Continue to consume the same amount of carbohydrates as normal if possible.** This will decrease the risk for hypoglycemia (low glucose). If a meal cannot be tolerated, encourage to drink beverages with carbohydrates equivalent to a typical meal. Take small sips every 10-15 minutes if needed to help keep the liquid down.
- 3 Monitor glucose levels more frequently. Check glucose every 3 hours unless otherwise specified by your healthcare provider.**
- 4 Drink plenty of sugar-free or low-sugar fluids with electrolytes. Drink carbohydrate containing liquids if glucose is low.**
 - Broth
 - Pedialyte or Pedialyte popsicles
 - Gatorade zero
 - Powerade Zero
 - DripDrop
 - Sugar-free popsicles
- 5 If you have type 1 diabetes or take insulin, check ketones at least every 3 hours during illness, even if glucose is normal.** If vomiting occurs more than 2 times and you are unable to keep fluids down, **Go to the Emergency Room** for a DKA evaluation.
- 6 If you notice consistent hyperglycemia (high glucose) for over 24 hours, a medication adjustment may be required.** Please contact your diabetes clinic for assistance.

Sick day diet recommendations

When you are sick, it may be difficult to follow your normal diet. It is important to try and follow your regular meal plan as close as possible to decrease risk for hypoglycemia (low glucose). Try to drink plenty of low-sugar/sugar-free fluids to stay hydrated and flush out ketones. If you are unable to tolerate meals, aim for **30-45 grams** of liquid carbohydrate every 3-4 hours until you are able to tolerate your regular diet. See below for meal ideas.

Try to match your usual intake of carbohydrates, but with foods that are easy-on-the-stomach.

Low-Sugar/Sugar-Free Fluids	Liquid Carbohydrates	Carbohydrate Foods
• Broth • Crystal Light® • DripDrop® • G2 • Gatorade Zero • Pedialyte Popsicles® • Pedialyte® • Powerade Zero®	• Creamed soups • Frozen juice bars • Yogurt • Popsicles • Pudding • Sherbet	• Applesauce • Crackers • Gelatin • Soups

See chart below to help you with food ideas to meet your daily needs.

Sick Day Foods by Carbohydrate Amount*			
15 Grams	30 Grams	40 Grams	50 Grams
• ½ cup regular Gelatin • ½ cup juice • 6-8 crackers • 1 cup of chicken noodle soup	• ½ cup sweetened applesauce • 1 cup juice • 16 oz. regular Gatorade or Powerade • Sandwich (2 slices of regular bread with protein)*	• 12 oz. can of ginger ale • 2 Creamsicle bars • 6 oz. Real Italian ice • 2-3 frozen fruit bars	• 1 cup orange sherbet • 1 package of cooked ramen noodles • 2 pudding snacks • 2-6 oz. flavored regular yogurts

*Always read specific product label for accurate carbohydrate amount.

Medications

Oral Medications Versus Insulin in Pregnancy

Insulin use in Pregnancy

Insulin is a hormone that is released from the pancreas that regulates blood glucose levels. Insulin injections are used to control glucose levels of persons with gestational, type 1 and type 2 diabetes. Insulin is considered the “Gold Standard” by the American Diabetes Association (ADA) and the first line of medication recommended by the American College of Obstetrics and Gynecology (ACOG) for use in pregnancy. Insulin does not cross the placenta; however, there is a risk for maternal hypoglycemia (low blood glucose) with use.

Oral Diabetes Medications used in Pregnancy

First choice oral medication:

Metformin: (Glucophage) is an oral medication that increases cells insulin sensitivity, allowing for more appropriate glucose control. Recent studies have shown metformin crosses the placenta; however, there is no sufficient data demonstrating fetal risk. Metformin is generally introduced after the first trimester; however, if a patient is already on metformin prior to pregnancy physicians may continue the medication throughout the pregnancy due to the benefits outweighing the risk of hyperglycemia in pregnancy. Studies show metformin has less risk of neonatal hypoglycemia (low blood glucose) and lower total maternal weight gain compared to other treatments in pregnancy. Metformin also has demonstrated more favorable fat distribution in offspring of women treated during pregnancy. Metformin does have an increased failure rate leading to possible transition to insulin in later trimesters.

Second choice oral medication:

Glyburide: (glibenclamide) is an oral drug that stimulates the pancreas to secrete more insulin in order to better control glucose levels. Glyburide has been a widely used oral medication in pregnancy for many years. However, new studies have shown glyburide crosses the placenta and can cause the following risks for the fetus:

- Higher birth weight and macrosomia (large babies)
- Neonatal hypoglycemia (low blood glucose)
- Respiratory distress (difficulty breathing)
- Jaundice (yellowing of skin – can cause severe illness)
- Increased admission to the neonatal intensive care unit (NICU)

Glyburide has also been associated with increased risk for maternal hypoglycemia (low blood glucose). Glyburide does have an increased failure rate leading to possible transition to insulin in later trimesters.

What is insulin?

Insulin is a hormone made in the pancreas. It allows the glucose in our blood to enter the body's cells to provide us energy thus lowering the glucose levels in the blood. Insulin doses will vary with each child and will change with time. It can be administered by insulin pen or insulin vial and syringe.



Insulin storage

- Unopened insulin pens or vials should be stored in the refrigerator.
- Do not freeze insulin.
- Once the insulin pen or vial is opened, it may be kept at room temperature (not above 90° F).
- Once the insulin pen or vial is opened, it is good for 28 days, or until the expiration date on the bottle, whichever comes first. Consider writing down the date the insulin was opened.
- Insulin should be colorless — no cloudiness or yellowing.
- Keep insulin away from sunlight.

Note

Do not inject 2-3 inches around or inside of the belly button.

You must rotate injection sites to prevent nodules (tender hardened areas) from forming!

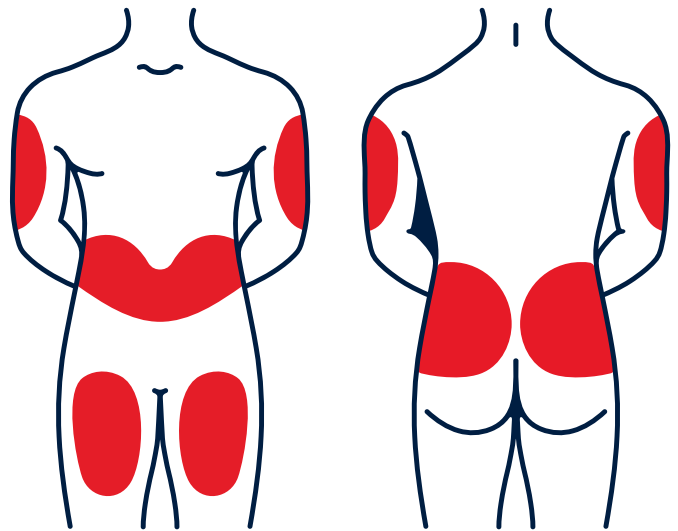
If leakage from injection site is noted, do not replace with extra insulin and continue to monitor blood glucose.

Unless otherwise instructed, insulin should be given 10-15 minutes before the meal.

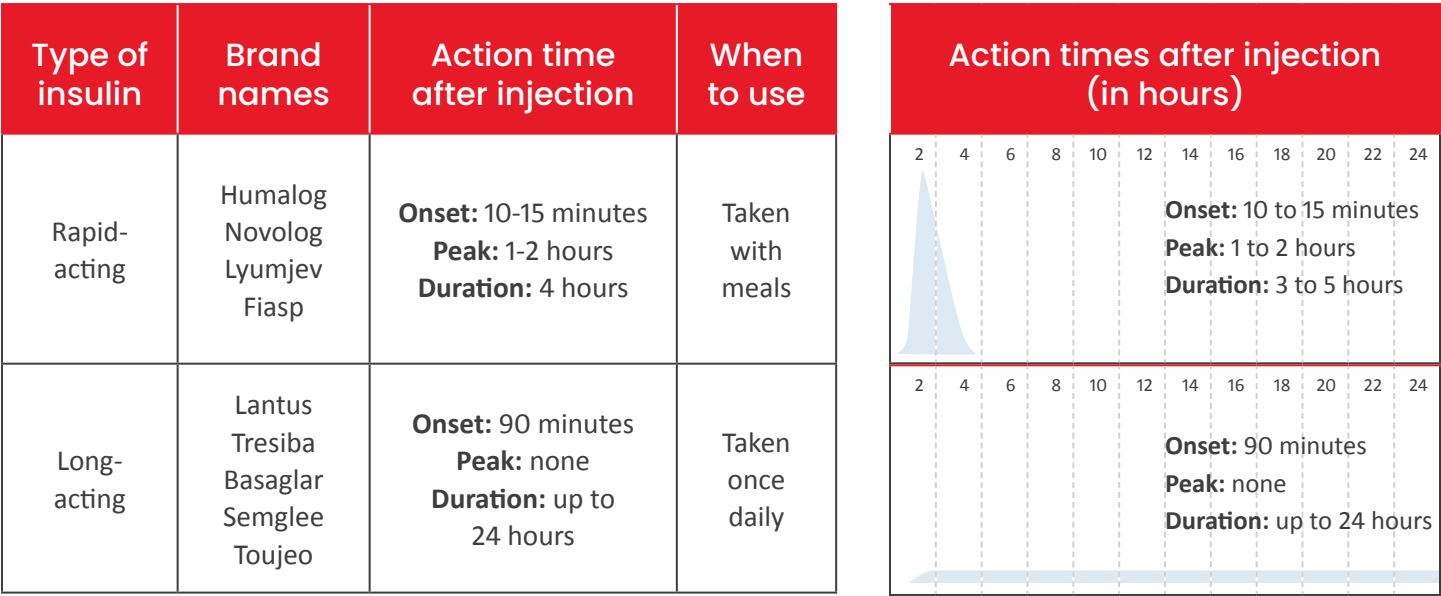
Injection site selection

Insulin is meant to be injected under the skin into the fatty tissue such as:

- Back of upper arms
- Abdomen
- Outer thighs
- Upper buttocks



Insulin action times

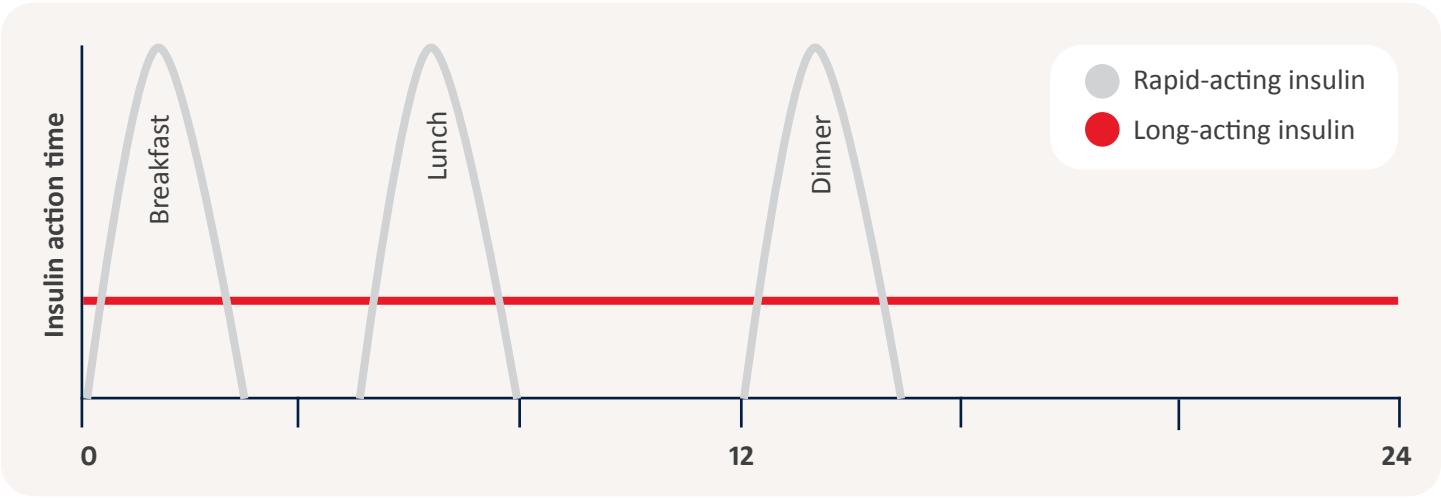


Onset: The length of time before insulin reaches the bloodstream and begins lowering blood glucose.

Peak: The time in which insulin is at maximum strength to lower blood glucose.

Duration: How long insulin continues to lower blood glucose.

Effects of insulin over 24 hours



Insulin pen use

- 1 Remove the pen cover or cap and clean the top with an alcohol swab.



- 2 Pen needle preparation:
 - a. Pull the paper tab off of the pen needle.
 - b. Screw the pen needle onto the insulin pen.
 - c. Remove the clear outer needle cover and colored inner needle cover to expose the needle.

- 3 Prime the pen needle.
 - a. Turn the dial up to 2 units.
 - b. Press down on the dose knob until the dial is back at 0.
 - c. Repeat until insulin drops or stream appears.

- 4 Select the dose.
 - a. Turn the dial to the dose given to you by your provider.
 - b. Double check the dose window to ensure you have selected the proper dose.



- 5 Select the injection site and clean it with alcohol. Allow it to air dry completely.
- 6 Injecting insulin
 - a. Insert the needle at a 90 degree angle. If your child is less than 5 years old or has minimal fatty areas, pinch the area to raise the skin before inserting the needle.
 - b. Use your thumb to press down on the dose knob until it is back at zero.
 - c. Hold the needle in place for 10 seconds to prevent leaking.
 - d. Pull the needle straight out of the skin.
- 7 Pen needle removal and disposal
 - a. Place the outer needle cover over the needle and twist it to unscrew the needle from the pen.
 - b. Throw the used needle away as directed by your sanitation department.
 - c. Place the outer pen cover back on the pen.
- 8 Store the insulin pen for future use as directed by manufacturer.

Insulin vial use

drawing insulin from the vial



1

Remove cap from insulin vial.



2

Clean rubber top of vial with alcohol swab.



3

Remove clear cap and orange cap from insulin syringe.



4

Pull air into syringe to match dose by pulling the plunger.



5

Inject air into the insulin vial.



6

Turn vial upside down and draw 5-10 units into the insulin syringe then push back into vial. This will remove air from the insulin syringe.



7

Draw insulin dose.

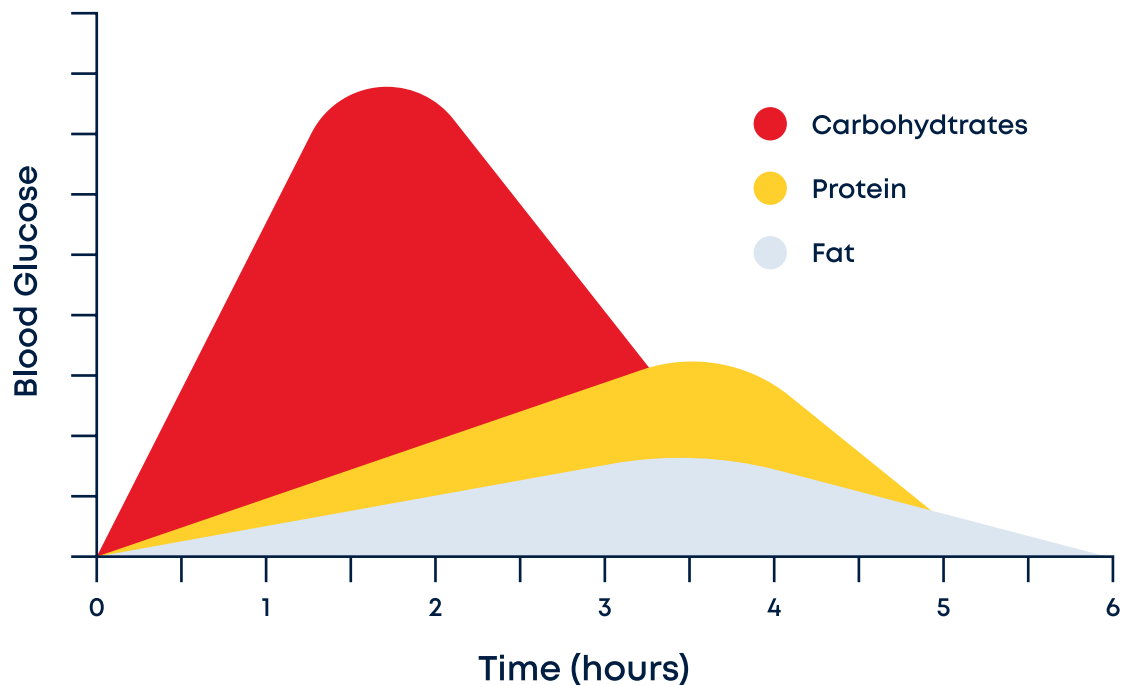
Nutrition

Carbohydrate Counting:

Focus On Consistency

Carbohydrates are the foods that are broken down into glucose (sugar) in our body. They are the main foods that will affect our blood glucose.

Effects on blood glucose over time



What are Carbohydrates?

Bread/starch, fruit, dairy, starchy vegetables, and sugar are carbohydrate-containing foods.

Learning to identify which foods and drinks contain carbohydrate and managing the portions of these foods will help you meet your blood glucose goals. It is important to watch your portions to maintain good blood glucose control and meet your nutrition needs.

Bread/Starch



Fruit



Dairy



Starchy Vegetables



Sugar



Groups	Carbohydrates	Non-Carbohydrates
Bread & Starches	Breads, pasta, rice, crackers, cereal, and added breading on items such as fried pickles, fried okra, fish sticks, and chicken nuggets	
Starchy Vegetables	Corn, potatoes, peas, beans, and lentils	
Fruit	Fruit and fruit juice	
Milk	Milk and yogurt, ice cream	Cheese
Other	Regular soda, juice, Gatorade®, Kool Aid®, sweet tea, chips, candy, cake, cookies	Eggs, meats, nuts, and non-starchy vegetables

Focus on Consistency

Eating consistent amounts of carbohydrates across the day can help you achieve better blood glucose control.



Eating **too many** carbohydrate-containing foods without taking adequate insulin will make your blood glucose go up.



Eating **too few** carbohydrates can mean missing nutrients and may cause you to experience low blood glucose (hypoglycemia).

Eating consistent amounts of carbohydrate at meals and snacks from one day to the next helps keep your blood glucose in a healthy range. It also helps you and your health care team identify whether your current diabetes plan is working for you and if you need medication added or adjusted for better blood glucose control. Following a balanced diet is important for your child's growth and development.

My Carbohydrate Prescription

	Breakfast	Morning Snack	Lunch	Afternoon Snack	Dinner	Bedtime Snack
Grams of Total Carbohydrates	15-30g	15-30g	30-45g	15-30g	30-45g	<15g

Carbohydrates

One serving of carbohydrate has approximately 15 grams. Most of the carbohydrates we eat quickly turn into blood sugar. All Items listed below contain 15 grams of carbohydrates.

I need the following grams of carbs: Breakfast: 15-30 grams; Lunch: 30-45 grams; Dinner: 30-45 grams; Snacks: 15-30 grams

Starches		
Breads 1 individual - slice of regular bread - biscuit - cornbread (1 3/4 inch) - pancake/waffles 4" across, 1/4" thick - plain roll - flour or corn tortilla (6 inch) 1/2 individual - English muffin - bun - pita - Others 1/4 large bagel 2 taco shells 1/3 cup stuffing 2 slices reduced calorie bread	Cereal and Grains 1/4 cup (1 cup = 60g of carbohydrate) - Dry oat bran - Granola 1/2 cup (1 cup = 30g of carbohydrate) - Cooked grits - Cooked wild rice - Cooked Oatmeal - Dry wheat bran - Cold breakfast cereals (check food label) 1/3 cup cooked (1 cup = 45g of carbohydrate) - Pasta - Rice - Couscous - Barley - Millet - Quinoa	Crackers and Snacks - Crackers 8 animal crackers 6 Ritz (Round Butter) 6 saltines 2-5 whole wheat crackers 3 Graham squares 4 pieces Melba toast 20 oyster crackers 42 Goldfish - Snacks 3 cups popcorn 3 oz. pretzels 2 rice cakes - Chips 15-20 baked 9-13 regular
Dairy	Starchy Vegetables	Fruits
Milk* 1 cup ALL milk 1/2 cup Eggnog 1/2 cup ice cream 1/2 cup evaporated milk Yogurt 2/3 cup plain & w/ sweetener 8 oz. plain from whole milk 1 cup yogurt and juice blend 2/3 cup with fruit, low-fat	1/2 cup cooked (1 cup = 30g of carbohydrate) - Corn - Mashed potatoes - Boiled potatoes - Beans - Lentils - Peas - Yams/ sweet potato 1/3 cup (1 cup = 45g of carbohydrate) - Baked beans - Hummus 1/4 cup (1 cup = 60g) - Mixed Vegetables - Edamame - Winter Squash (1/2 cup) - Pumpkin - Baked French Fries - Whole Foods 1/2 corn cob 1/4 large potato	- Apple, 1 small 1/2 cup applesauce - Apricots, 1/2 cup canned - Apricots, 4 whole - Banana, 1 medium (30 gms) - Berries, 3/4 cup (black and blue) - Cantaloupe, 1/3 melon or 1 cup cubes - Cherries, 1/2 cup canned or 12 fresh - Fruit juice, 1/2 cup - Dried Fruits, 2 Tbsp - Figs, 1 1/2 fresh or dried - Fruit Cocktail, 1/2 cup - Grapefruit, 1/2 large, 3/4 cup canned - Grapes, 17 small grapes - Honeydew, 1 slice or 1 cup cubes - Dates, 3 - Kiwi, 1 - Mandarin oranges, 3/4 cup canned - Mango, 1/2 small, 1/2 cup - Nectarine, 1 small - Orange, 1 small - Papaya, 1/2 fruit or 1 cup cubes - Peaches, 1/2 cup canned, 1 medium - Pears, 1/2 cup canned, 1/2 med pear - Pineapple, 1/2 canned, 3/4 cup fresh - Plums, 1/2 cup canned, 2 small - Strawberries, 1 1/4 cup whole berries - Tangerines, 2 small - Watermelon, 1 slice or 1 1/4 cup cubed
Combination Foods		
1/2 cup casseroles (tuna noodle, lasagna, spaghetti with sauce, chili with beans, mac/cheese) 1 cup stew 1 cup soup without beans, corn, lentils 1/2 cup soup with beans or lentils 1/2 sandwich 1/2 slice thin crust pizza		
Condiments		
1 Tablespoon (3 teaspoons) - Honey or agave - Sugar - Jelly/jam or syrup - BBQ sauce or ketchup - Sweet salad dressing		

Non-Carbohydrates

Do not raise blood glucose levels significantly.

Non-Starchy Vegetables	Proteins (Meat & Meat Substitutes)	Fats
Note: 1 cup raw or 1/2 cup cooked = 5 grams of carbohydrate • Artichoke • Asparagus • Baby corn • Bamboo shoots • Beans (green, wax, Italian) • Bean sprouts • Beets • Broccoli • Brussels sprouts • Cabbage • Carrots • Cauliflower • Celery • Coleslaw, no dressing • Cucumber • Eggplant • Gourds • Greens (collard, kale mustard, turnip) • Leeks • Mixed vegetables (without corn, peas or pasta) • Mushrooms • Okra • Onions • Oriental radish or daikon • Pea pods or pea snaps • Peppers • Radishes • Salad greens • Sauerkraut • Soybean sprouts • Spinach • Squash (summer, crookneck, zucchini) • Tomatoes • Turnips • Water chestnuts	Eat correct portion size and prepare meats without a batter. Bake, grill, broil, etc. *Note: 1 oz. = 7 grams of Protein 3 oz. cooked meat = deck of cards 1 oz. cheese = 4 dice *Low Fat Meats <3 grams of fat per 1 oz. serving *High Fat Meats >8 grams of fat per 1 oz. serving • Meats ○ 1 oz. Beef ○ 1 oz. Poultry ○ 1 oz. Fish ○ 1 oz. Pork ○ 1 oz. canned Salmon ○ 1 oz. Shellfish ○ 1 oz. Wild game ○ 1 oz. processed sandwich meats • Meat Substitutes ○ 1 oz. Beef jerky ○ 1 oz. Cheese ○ 1/4 cup Cottage cheese ○ 1/4 cup Egg substitutes ○ 2 Egg whites ○ 1 Whole egg ○ 1 Hot dog ○ 2 canned Sardines • Plant-Based Proteins ○ 1 Tbsp Nut spreads - almond, peanut butter and soy ○ 1/2 cup dry or cooked Soy beans ○ 4 oz., one slice or 1/2 cup cube Tofu	Will help slow the rise of blood glucose after meals. Should be used sparingly. Serving sizes of fats listed = 5 grams of fat. Choose low-fat versions of all fats when possible. Fat should represent 30% or less of daily intake • Unsaturated Fats - Monounsaturated ○ 2 Tbsp Medium Avocado ○ 1 1/2 tsp Nut butters ○ 1 Tbsp Nuts ○ 1 tsp olive, canola or peanut oil ○ 8 large black olives ○ 10 large green olives • Unsaturated Fats - Polyunsaturated ○ 1 Tbsp low fat margarine, reduced fat mayo or salad dressing, seeds ○ 1 tsp stick or tub margarine, regular mayo or salad dressing, oil: corn, cottonseed, flaxseed, grape seed, safflower, sunflower, Enova, soybean ○ 4 walnuts halves • Saturated Fats ○ 1 tsp stick butter, lard, shortening, Oils: coconut, palm, palm kernel ○ 1 Tbsp of reduced fat butter, heavy cream, regular cream cheese ○ 1 1/2 Tbsp light cream, reduced fat cream cheese ○ 2 Tbsp of regular sour cream and coconut ○ 1 slice Bacon ○ 3 Tbsp light sour cream

Nutrition Food Labels

To better manage your diabetes and make healthy food choices it is important to know how to properly read and understand a nutrition label. The following is a quick guide to reading the nutrition label.

Serving Size

Start with the serving size. Compare the amount you actually eat to the serving size listed on the label. All the nutrition values are for that one serving size.

Serving per container

It is important to know how many servings are in the package as a whole. If you eat 8 servings in this container, you will need to multiply all nutrition values by 8.

Total Carbohydrates

To count carbohydrates, look at grams of total carbohydrates only. The amount of sugar, dietary fiber, and sugar alcohols are already included in the total carbohydrate amount.

NUTRITION FACTS

Serving size 1 cup (110g)
4 servings per container

Amount Per Serving
Calories 55

	% Daily Value*
Total Fat 3g	4%
Saturated Fat 1g	5%
Trans Fat 0g	
Cholesterol 2mg	0.2%
Sodium 210mg	9%
Total Carbohydrate 30g	14%
Dietary Fiber 3g	5%
Total Sugars 2g	
Protein 7g	

Vitamin A 1mcg	1%
Vitamin B 2mcg	2%
Vitamin C 1mcg	1%
Calcium 210mg	12%
Iron 2mg	0.3%
Potassium 110mg	2%

*The % Daily Value are based on 2000 calorie diet.

Serving Size grams

This is the product weight in grams and not grams of carbohydrates. This is helpful if you have a food scale.

Total Fat

Healthier foods contain more grams of unsaturated compared to saturated fats.

Choose foods that limit saturated fat, and foods that are Trans-fat free.

Sodium

Try to limit sodium intake to less than 2400 mg per day.

Low sodium foods will have less than 140 mg per servings.

Estimating Portion Sizes

Measuring food portions is the best way to know exactly how much food you are eating. However, that is not always possible. Here are some ways to help you visually estimate serving sizes when measuring cups are not handy.

3 ounces of meat, poultry, fish –
A deck of playing cards



1 teaspoon of butter or peanut butter –
Size of the tip of your thumb



A medium apple or peach –
Tennis ball



1 cup of fruit or yogurt –
Baseball



1 medium potato –
Computer mouse



1 cup of potatoes or broccoli –
Size of your fist



1 ounce of cheese –
Four dice or a tube of lip balm



2 tablespoons peanut butter –
Golf ball



Low and No Sugar Beverages

- Sugar sweetened beverages increase blood glucose and weight.
Instead choose WATER and occasionally low and no sugar beverages.
- Sugar substitutes can be used in moderation to replace regular sugar (< 2 servings/day).

Instead of:	Choose:
Sweetened Lemonade/Tea/Punch	 
Regular Sports Drinks	 
Regular Soda	 
Regular Juice	 
sugar	  
Avoid in Pregnancy	
Sweet'N Low	

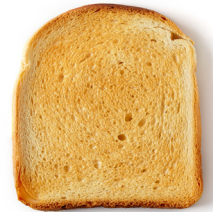
Healthy Snacking

Snacks can be included in a healthy diet to prevent you from feeling hungry between meals. Snacks that contain lean protein paired with a high-fiber food such as fruits, vegetables, or whole grains are a great way to keep you satisfied and nourished between meals.

Lean Proteins and Healthy Fats Options

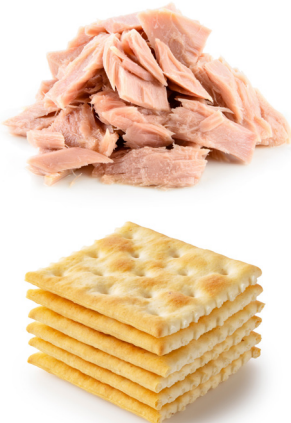


High Fiber Options

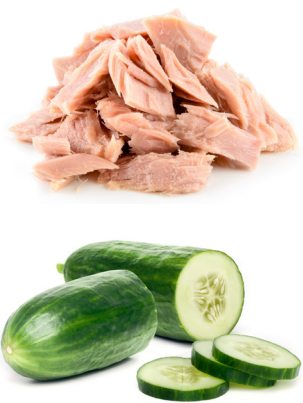


Healthy Combination Snack Ideas

Great snacks include 15g carbohydrate + Protein

 8 animal crackers & 1-2 tablespoons peanut butter	 1 slice toast & 1-2 tablespoons peanut butter	 3 cups plain popcorn & 1 oz. nuts
 1 rice cake with ½ banana, & 1 tbsp nut butter	 1 small fruit & 1 oz. cheese	 1 cup berries & ¼ cup cottage cheese
 ½ sandwich (meat, cheese, vegetables or peanut butter with no jelly) *heat deli meat if pregnant	 6 saltine crackers & 1 oz. of tuna or chicken salad	 baby carrots & ¼ cup hummus

Healthy Combination Low or No
Carbohydrates Snack Ideas

 turkey and string cheese	 salad with egg or avocado	 carrots and ranch dressing
 celery & peanut butter	 cucumber slices & tuna	 nuts and cheese cubes
 cherry tomato & mozzarella cheese	 lettuce wrap with chicken or tuna salad	 cucumbers & salsa or guacamole

Diabetes in Pregnancy Meal Plans

Meal	Number of Servings/Choices	Menu Ideas
1st Meal	2 Carbohydrates (15-30g) (starch/fruit/milk) Lean Meat/Protein Fats	1 slice whole wheat toast with 2 tbsp of natural nut butter, 1 cup of sliced strawberries, and 2 eggs
Snack (Optional)	1 Carbohydrate (15-30g) (starch/fruit/milk) Lean Meat/Protein	1 Greek Yogurt
2nd Meal	3 Carbohydrates (30-45g) (starch/fruit/milk) Unlimited Vegetables (non-starchy) Lean Meat/Protein Fats	8 oz. milk, 2 slices of whole wheat bread, 3 oz. of grilled chicken breast, 1 oz. of cheese, 1 TBS mayo/ avocado, and veggies
Snack (Optional)	1 Carbohydrate (15-30g) (starch/fruit/milk) Lean Meat/Protein	1 small apple and 1 string cheese
3rd Meal	3 Carbohydrates (30-45g) (starch/fruit/milk) Unlimited Vegetables (non-starchy) Lean Meat/Protein Fats	1/3 cup of brown rice, 1/2 cup of pinto beans, 1 corn tortilla, 4 oz. grilled chicken breast, 2 cups of salad with 2 TBS of dressing
Snack (Optional)	1 Carbohydrate (15g) (starch/fruit/milk) Lean Meat/Protein Fat	1 cup berries, 1/2 cup cottage cheese, and 1/4 cup raw almonds

Clinical Nutrition Services at Texas Children's Hospital©

Breakfast Ideas Under 30 Carbohydrates

- 1/2 whole grain English muffin with 1 tbsp. nut butter, 8 oz. milk
- 1 whole grain waffle with one cup of Greek vanilla yogurt, ½ cup blueberries, 1 tbsp. slivered almonds
- 1 egg scrambled with salsa plus 1 tbsp. shredded cheese or 1 slice of bacon in a 6" corn tortilla
- 1 small or 1/2 large whole wheat bagel with butter or avocado, eggs.
- 1/2 small whole wheat bagel with cream cheese, eggs, and 1 cup berries
- 1/2 cup oatmeal with 1/2 cup berries, 1 tbsp. chopped walnuts — add eggs, cheese or protein powder
- 1 whole grain waffle with 1 tbsp. peanut butter and 1/2 banana, protein shake
- Roasted red pepper egg sandwich: 2 slices of bread, 2-3 eggs, half roasted red pepper (if from a jar, pat dry) with or without a slice of cheese
- Eggs and cheese on 1 whole grain English muffin
- 1 slice of whole wheat bread with any type of cheese, 1 mandarin orange + a source of protein (egg, bacon, turkey, or sausage)
- 1/2 pita bread stuffed with 1/2 avocado, tomato slices, and protein of choice: egg, turkey or Canadian bacon, turkey or chicken sausage, etc.
- 2 (4") pancakes with sugar-free syrup, nut butter, and another source of protein (eggs, cheese, etc)
- 3/4 cup Cheerios with 1/2 cup of milk
- 1 packet of instant oatmeal (no or low sugar option) with nuts and another source of protein (eggs, bacon, protein powder, etc)
- 1/2 cup hot cereal with 1 tbsp. dried fruit, 1 tbsp. shredded coconut, and cinnamon, hemp or chia seeds
- Fruit and yogurt parfait: 1/2 cup yogurt, 1/2 cup berries, 2 tbsp. nuts, oats or granola
- Omelet with spinach, tomato, onion or vegetable of choice, and cheese, 1/2 cup hash browns, 3/4 cup berries
- Baked Scrambled egg muffins (aka mini-frittata) with 8 oz. glass of milk
- 4 oz. serving of crusted quiche or 6-8 oz. portion of crust-less quiche
- Smoothie: 1 cup unsweetened almond milk, 1/2 cup frozen berries, 1/2 banana blended, protein powder or plain Greek yogurt

Lunch/Dinner Ideas Under 45 Grams of Carbohydrates

- Rotisserie chicken sandwich with lettuce, tomato, avocado, and 1 small bag of baked chips
- 8 Chicken tenders, broccoli, 1 cup of fruit
- 1 cup of Whole wheat pasta/spaghetti with lean meat/chicken and broccoli
- Tuna or chicken salad sandwich, carrots and 1/4 cup hummus, and 1/2 cup unsweetened applesauce
- 1 cup of brown rice, grilled/baked chicken (bruschetta or pesto sauce), green beans
- 1 small baked potato, grilled steak, steamed vegetables
- Grilled cheese sandwich (whole grain bread), cucumbers and ranch, 1 small bag of baked chips
- 1/2 cup of brown rice, 1/2 cup of beans, fajita meat or chicken, sautéed or grilled vegetables
- Loaded sweet potato: 1 small sweet potato, ground meat, sour cream
- Quinoa bowl: 1 cup quinoa, grilled chicken, tomato, cucumbers, onions, avocado
- 1 cup brown rice, meatballs, and vegetable medley
- Whole wheat chicken/tuna wrap, side salad, 6 oz. Greek yogurt
- 3 meat tacos on corn tortilla, side of vegetables
- 1/2 cup of corn, 1/2 cup of brown rice, salmon and asparagus
- Peanut butter and sugar free jelly sandwich on whole grain bread, 1 apple
- Sweet potato hash: 1 cup of sautéed sweet potato, sausage, 1 egg, 1 slice of wheat toast
- Avocado egg salad sandwich on whole grain bread, 1/2 cup of fruit
- Turkey meatballs with zucchini noodles, 1/2 cup of corn, 2 slices of bread
- Burrito bowls: pulled pork or meat, lettuce, tomato, avocado, cilantro, 1/2 cup corn, 1 flour tortilla
- Southwest chicken salad with 1/2 cup corn, 1/2 cup beans
- 2 Chicken and cheese quesadillas, carrots and 1/2 cup peas

Food Safety Guide During Pregnancy

Hormonal changes during pregnancy affect the mother's immune system, which can lead to an increased susceptibility to certain bacteria and other nutrients. Throughout pregnancy, it is important to avoid or limit certain foods.

Substance	Foods to Avoid	Foods to Substitute
Listeria/Listeriosis - Listeriosis is a disease caused by eating the bacterium <i>Listeria monocytogenes</i>. - It can be transmitted to the fetus via the placenta even if mother has no symptoms. - It can lead to premature delivery, miscarriage, stillbirth or serious health problems for the newborn.	- Soft, mold-ripened cheeses such as feta, brie, camembert, blue-veined cheeses and Mexican-style cheeses such as queso blanco fresco-unless they are made with pasteurized milk - Hot dogs, luncheon or deli meats, unless they are heated. - Refrigerated pate or meat spreads - Refrigerated smoked seafood including salmon, trout, whitefish, cod, tuna, mackerel (often labeled as nova style, lox, kippered, smoked or jerky)	- Hard cheeses - Semi-soft cheeses such as mozzarella, pasteurized processed cheese slices and spreads, cream cheese and cottage cheese - Shelf-stable pate and meat spreads - Canned fish or shelf-stable smoked seafood
Toxoplasmosis - It is caused by a parasite found in undercooked meats and carried by cats. - It results from eating undercooked meat and poultry or unwashed fruits and vegetables, from cleaning a litter box or from handling contaminated soil. - It may or may not cause mild flu-like symptoms and can be passed to a developing fetus, resulting in miscarriage, disability or retardation.	- Raw or undercooked meat, uncooked eggs, raw (unpasteurized) milk - Avoid contact with cat feces (directly or indirectly through soil)	- Cooked meat, cooked eggs and pasteurized dairy - To avoid toxoplasmosis contamination: - Be sure to wash hands and surfaces thoroughly and often, especially after handling raw meat or gardening - Wash all raw fruits and vegetables - Refrigerate perishable foods immediately and cook to proper temperatures *Go to www.fightbac.org for recommended temperatures and additional food safety tips
Mercury - Mercury is a heavy metal that can be toxic in high enough doses. - Certain fish may be contaminated with mercury. - Too much mercury may cause mental retardation in the newborn.	Shark, swordfish, mackerel, tile fish *Canned lite tuna – limit albacore and tuna steak to six ounces per week (equivalent of one 3 ½ round by 1 ½ inch tall can)	- Eat two to three servings per week of seafood (shrimp, crab, cod, clams, scallops, canned light tuna, canned salmon, pollock, catfish and others) to meet omega-3 fatty acid intake - Do not exceed a total of 12 ounces per week of seafood, or one large tuna can – 4" round X 2" tall.

Substance	Foods to Avoid	Foods to Substitute
Caffeine There are no known risks to drinking/ eating up to 200 mg per day of caffeine.	Caffeine content of some common foods and beverages: • Coffee: 65-120 mg (tall iced nonfat latte has 75 mg) • Tea: 20-90 mg (Celestial Seasonings green tea 1 bag = 30 mg, black tea = 60 mg) • Soft drinks: 20-40 mg (12 oz. can of cola has 29 mg. Mountain Dew has 54 mg) • Chocolate candy bar: 5-35 mg	• Do not exceed a total of 12 ounces per week of seafood, or one large tuna can – 4” round X 2” tall.
Alcohol Birth defects, fetal alcohol syndrome.	AVOID completely There is no known safe amount to drink during pregnancy.	
Nicotine (smoking and second-hand smoke) Stillbirth, prematurity, low birth weight, sudden infant death syndromes (SIDS), asthma and other respiratory problems	AVOID completely Nicotine patches and gum are safe in pregnancy to promote quitting.	

For more information on the risks of eating certain types of fish, go to the Texas Department of State Health Services at <https://www.dshs.state.tx.us/seafood/risks-of-eating-fish.aspx>

For supplements considered safe in pregnancy go to: <https://ods.od.nih.gov/factsheets/list-all/> or <https://ods.od.nih.gov/HealthInformation/healthprofessional.aspx>.

Healthy Weight Gain in Pregnancy

Weight gain is closely monitored while you are pregnant to ensure healthy weight gain is achieved. Inadequate weight gain can be associated with low birth weight and pre-term delivery in the second and third trimesters.

While gaining too much weight can cause the baby to be born too big, increase your risk for a C-Section as well as other complications. You may also find it harder to lose the extra weight after your baby is born. Recommended weight gain targets for pregnancy are listed below:

Weight Gain Targets for Singleton Pregnancy Approximate Target Weight Gain by Weeks Gestation

Underweight BMI <18.5

Weeks	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40
Upper Limit	5	6	8	10	13	15	18	20	22.5	25	28	30	32.5	35	38	40
Lower Limit	1.5	2	3	5	7	9	11	13	14.5	16.5	18.5	20	22	24	26	28

Normal Weight BMI 18.5–24.9

Weeks	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40
Upper Limit	4	6	7.5	9.5	12	13	16	18	20	22	24.5	26.5	29	31	33	35
Lower Limit	1.5	2	5	5	6.5	8	10	11.5	13	15	16.5	18	20	21.5	23	25

Overweight BMI 25.0–29.9

Weeks	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40
Upper Limit	4	6	7	8.5	10	11.5	13	14	13.5	16.5	18	19.5	21	22.5	23.5	25
Lower Limit	1.5	2	2.5	3.5	4.5	5.5	6.5	7.5	8	9	10	11	12	13	14	15

Obese BMI ≥30

Weeks	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40
Upper Limit	3	4	5	6	7	8	9.5	10.5	12	13	14	15	16.5	17.5	19	20
Lower Limit	0.75	1	1.5	2	3	3.5	4.5	5	6	6.5	7.5	8	9	9.5	10	1

BMI Category	Your BMI	Total Weight Gain While Pregnant	Weight Gain Each Week Starting at Month 4	Additional Calorie Needs Starting at Month 4
Underweight	<18.5	28-40 lbs	1.5 lbs	500-650 calories
Normal Weight	18.5-24.9	25-35 lbs	1 lb	400-500 calories
Overweight	25-29.9	15-25 lbs	2/3 lb	250-350 calories
Obese	>30	11-20 lbs	1/2 lb	200-300 calories

A Weight Gain Grid

At each appointment, your health care team can print off a copy of your maternal weight gain grid that we use as a guide to track your total weight gain between visits. It is adjusted based on a person's pre-pregnancy BMI. It is optimal to try and stay within these recommendations.

We often get questions on just how much the baby weighs versus the total maternal weight gain. For a person with normal BMI pre-pregnancy weight gain is broken down as seen below:

Pregnancy Weight Gain Distribution

Baby	6.5-7 lbs
Uterus or Womb	1-2 lbs
Placenta	1-1.5 lbs
Amniotic Fluid	1.5-2 lbs
Breasts	1-2 lbs
Extra Blood	4-5 lbs
Extra Fluid	5-7 lbs
Extra Weight (Fat to help make milk for breastfeeding)	5-8 lbs
Total Weight Gain	25-35 lbs

Exercise

Exercise in Pregnancy

An exercise program during pregnancy is good for you and your baby. American Congress of Obstetricians and Gynecologists (ACOG) recommends a goal of moderate-intensity exercise for at least 20-30 minutes per day most days during pregnancy. However, many women think exercise is harmful for the baby and either decrease exercise significantly, or stop all together.

Myths about Exercise in Pregnancy:

- “It’s dangerous for the baby”
- “Walking is the only safe exercise”
- “Exercise dangerously changes the baby’s heart rate”
- “Exercise reduces blood flow to the baby”

Truths about Exercise in Pregnancy:

- There are no risks to the baby with mild to moderate physical activity. Actually, exercise during pregnancy helps by:
 - Reduces risk for gestational diabetes by increasing insulin sensitivity and overall glucose control
 - Reduces the need for insulin injections in women who have gestational diabetes
 - Improves cardiovascular function
 - Reduces blood pressure
 - Reduces leg swelling
 - Strengthens pelvic floor muscles and posture
 - Lowers stress and anxiety
 - Improves self-image
 - Improves sleep
 - Reduces risk for overgrowth of the baby
 - Reduces risk for childhood metabolic syndrome for the baby
 - Reduces risk for lifetime cardiovascular disease & cancer

- Participation in a wide range of exercise is safe. See list below for safe examples:

Safe Aerobic Exercises

- Walking
- Swimming
- Stationary bike
- Elliptical
- Step aerobics
- Moderate hiking
- Running/jogging
- Dancing
- Climbing stairs

Safe Strength Exercise

- Lifting weights
- Resistance bands
- Stability balls
- Prenatal Pilates
- Prenatal yoga

- There are some exercises that women should not do when pregnant. See the list below for UNSAFE exercises:

Unsafe Aerobic Exercises

- Risk for abdominal trauma: soccer, baseball, etc.
- Risk for falls: gymnastics, downhill skiing, box jump, rope climb
- Excessive bouncing/jerking: horseback riding, mountain biking

- According to ACOG, there are some conditions with which women should not exercise, such as: incompetent cervix/cerclage, multiple gestation at risk for pre-mature labor, placenta previa after 26 weeks, preeclampsia. Please discuss with your physician to see if you have any restrictions.

When starting any new exercise regimen, you should slowly build up to your moderate intensity level. Use the Talk Test reference below.

Talk Test

A talk test is one of the best ways to assess intensity of exercise in pregnancy. Maintain an intensity of exercise where you are able carry on a light conversation comfortably. If you have difficulty catching your breath, or are unable to talk, you are most likely exceeding safe exercise intensity. If this occurs, slow down, catch your breath, and resume activity at a more moderate pace.



Please select one or more of the following support plans.

Join a support group

- Diabetic Connect www.diabeticconnect.com
- Diabetes Sisters www.diabetessisters.org
- Type 1 Nation: www.typeonenation.org
- American Diabetes Association: www.community.diabetes.org/discuss
- Facebook: www.facebook.com/ADAHouston

Visit an education website

- Gestational Diabetes: www.womenwithgestationaldiabetes.com
- Gestational Diabetes (ADA): www.diabetes.org/diabetes-basics/gestational
- Juvenile Diabetes Research Foundation International: www.jdrf.org
- American Diabetes Association (ADA): www.diabetes.org
- Houston Diabetes Resource Center: www.houstondiabetes.org
- DiaTribe: www.diatribes.org

Healthy Recipe website

- <https://www.chopchopfamily.org/>
- <https://recipes.heart.org/>
- <https://www.myplate.gov/myplate-kitchen>
- <https://www.nutrition.gov/topics/shopping-cooking-and-meal-planning/recipe-collection>
- <https://diabetesfoodhub.org>
- <https://diabetes.org/healthy-living/recipes-nutrition>

Subscribe to publications

- Diabetes Digest: www.diabetesdigest.com
- Diabetes Cooking: www.diabeticcooking.com
- Diabetes Forecast: www.diabetesforecast.org

Use an application

- Calorie King
- My Fitness Pal
- Cronometer
- Glucose Buddy

Use a different resource

- Local gym
- Podcasts: Juicebox podcast

Diabetes Technology

Continuous Glucose Monitors (CGM)

What is a CGM?

A continuous glucose monitor (CGM) is a medical device that tracks glucose levels throughout the day. It measures glucose in the interstitial fluid underneath the skin approximately every 5 minutes. This is different from a blood glucose meter, which measures glucose in the blood. The correct use of an FDA-approved CGM can reduce or eliminate the need to perform multiple finger sticks throughout the day. When wearing a CGM, a finger stick is indicated to make treatment decisions if your symptoms do not match the readings from the CGM.

Benefits of a CGM

- Displays current glucose values and trends (shows whether glucose is rising, falling, or stable)
- Has the option of alerting to out-of-range glucose levels allowing you to treat a low or high glucose immediately. It also has trending alerts enabling you to be proactive to prevent out-of range glucose values.
- Ability to see the effects of food, insulin, exercise, illness and other variables that affect glucose in real time or patterns over time. Observing and understanding patterns will help to make informed decisions about food, exercise or insulin to improve overall blood glucose control.
- Provides data sharing with the medical team and care givers to assist in adjusting insulin doses and overall diabetes management.

Limitations of a CGM

- Because glucose is being monitored from the interstitial fluid and not the blood, there may be a 10-15 minute delay in the CGM reading compared to the glucometer reading when the glucose is rapidly rising or falling.
- Depending on which CGM system is being used, blood glucose values may be about 10-20% higher or lower than a CGM reading.
- Always verify a CGM reading less than 70mg/dL or greater than 200mg/dL with a finger stick.

Components of a CGM:

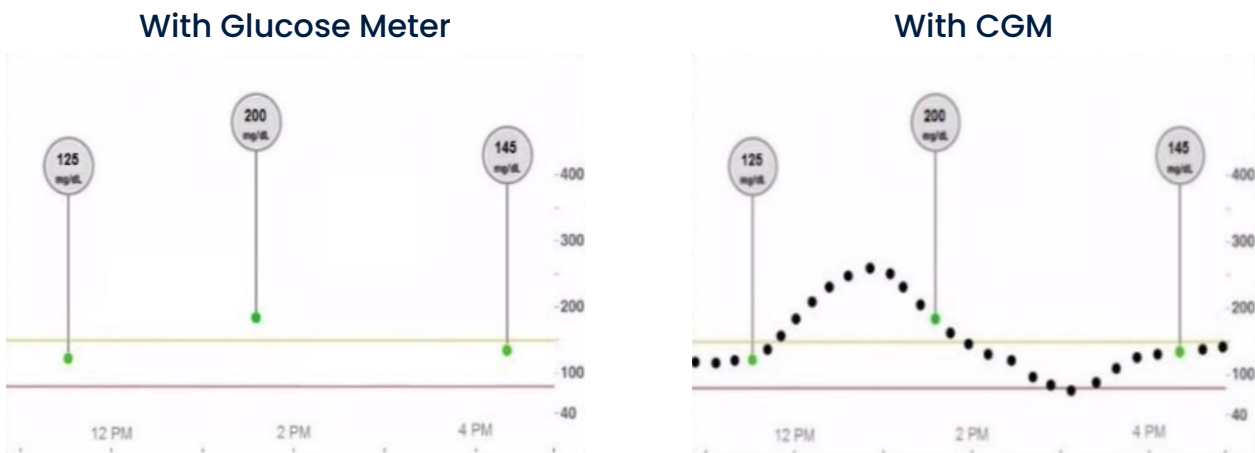
- **Sensor:** a short, thin, flexible wire that is placed under the skin using an applicator and held in place with adhesive (similar to a Band-Aid). It is recommended that a new sensor be placed every 10-14 days (depending on brand) in a different area on your body.
 - Sensor placement areas will depend on which brand is chosen. Please check manufacturer specifications.
 - Sensors are water resistant and can be worn for bathing and showering.
- **Transmitter:** attaches to the sensor and wirelessly sends the glucose information to the receiver. Not all models of CGM have a separate transmitter; some models have the transmitter and sensor all in one piece.
- **Receiver/Display Device:** Receives the glucose information from the transmitter and displays it for you to see. Depending on the CGM brand, the receiver can be a separate device or can be sent to your smartphone or insulin pump.
 - Depending which CGM system is used, family and friends may be able to see and follow glucose levels through a separate app, even when they are not with the individual, if given access to this.

CGM and Alerts

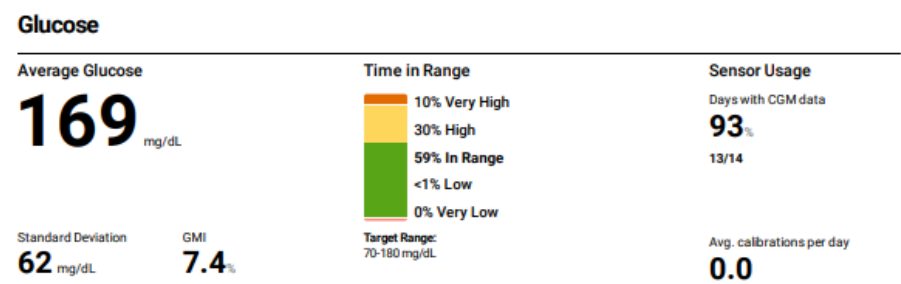
- Set the low alert at 70 mg/dL and the high alert at 200 mg/dL on your CGM. The device will notify you if your glucose levels fall below or rise above these thresholds.

Continuous Glucose Monitor (CGM) Functionality

Provides a visual of your daily glucose levels



Provides more data that you and your diabetes team can use to improve your diabetes treatment plan.



Benefits and Considerations to Continuous Glucose Monitor (CGM)

- There are multiple types of CGMs available and manufactured by different companies. Your diabetes team will discuss different options and help you choose one that is best for you.
- CGMs can work independently with a receiver or smart device to view blood glucose and trends. If a smart device is used with a CGM to view blood glucose values and trends, that information can be shared with other smart phones or devices.
- When integrated with an insulin pump, CGM information can be seen on the pump. If a CGM is used with an automated insulin delivery pump, the pump will adjust insulin according to blood glucose values sent from the CGM to help prevent large fluctuations in blood glucose values.

Things to consider when deciding to utilize a CGM

Benefits	Considerations
Fewer blood glucose checks	Wearing a device on your body (24 hr/day)
Helps prevent and manage low and high blood glucose	Cost
Visible blood glucose trends in real time help make treatment decisions	Need to still check blood glucose if symptoms do not match blood glucose value on CGM
Alerts inform rapidly rising or lowering blood glucose levels	Adhesive issues or possible allergic reaction to sensitive skin
May improve overall diabetes control and A1c over time	Technology can fail
	Alerts can be disrupting
	Insurance coverage is variable

Consult with your Diabetes Team to see if a CGM is right for you and your family and to receive detailed information on the products available.



Freestyle Libre 2



Freestyle Libre 3



Dexcom G6



Dexcom G7

<https://www.freestyle.abbott/us-en/home.html>
<https://www.dexcom.com/en-us/g6-cgm-system> <https://www.dexcom.com/en-us/g7/how-it-works>

Chronic Complications

Living Well with Diabetes

People with diabetes can have a long, productive life without long-term complications.

Take the following steps to reduce your risk:

- Keep your hemoglobin A1c on target
- Be physically active
- Maintain a healthy weight
- Follow a heart-healthy diet
- Maintain good blood pressure and cholesterol levels
- Don't smoke

Cardiovascular disease

*Heart and vascular health
(heart attacks and strokes)*

- Cholesterol/lipid profile (Every 1–5 years)
- Blood pressure check (Every 3 months)

High blood glucose, high LDL cholesterol, and high blood pressure can cause stickiness (plaques) to form on blood vessel walls. This is also known as atherosclerosis. Smoking worsens this condition.

Neuropathy

Nerve health

- Foot sensory exam (Annual)

Nerve damage from diabetes is known as neuropathy. Peripheral neuropathy can cause tingling, numbness, or pain in your hands and feet. Autonomic neuropathy can affect your intestines, causing abdominal discomfort.

Retinopathy

Eye health

- Eye exam (Annual)

The blood vessels in the back of the eye (the retina) may be severely damaged by high glucose events before any difference in your vision is noticed. Untreated retina damage may lead to blindness.

Nephropathy

Kidney health

- Urine microalbumin (Annual)

High levels of blood sugar can cause the kidneys to filter too much blood. This extra work can damage the kidneys and cause small amounts of protein to leak into the urine (microalbuminuria). With time, this may lead to kidney failure, requiring patients to receive dialysis or a kidney transplant.



We would like to hear about your recent Diabetes Educator visit by taking our question survey. Please use the QR code or link:

<https://forms.office.com/r/dqWzaagB49>

Thank you!

MFM Diabetes Education Team



