Hartford Healthcare Diabetes Tool Kit

Thriving with diabetes
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<td>Psychiatrist (treats mental health)</td>
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Welcome to Hartford Healthcare:

It can be stressful having a new diagnosis, but this diabetes tool kit is meant to help you through your diabetes journey. Chapters 1 - 3 contain survival skills outlined by the American Diabetes Association as necessary for newly diagnosed patients. Other content in later chapters will be discussed in outpatient education classes and at provider visits. Everyone learns at their own pace- choose the pace that works for you. Please bring this with you to medical and education appointments.

This tool kit was created by a team of endocrinologists (diabetes doctors), diabetes advanced practitioners (nurse practitioners, physician assistants), certified diabetes care and education specialists, registered dietitians, nurses, pharmacists, and other medical staff who work with patients with diabetes.

Please keep in mind this book is for recommendations, but please contact your healthcare team for any medical questions about your health.

We are happy to help you during your journey.

This issue was last edited 7/2022

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What topics are covered in this book?

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This section is meant as an introduction for patients with new diagnosis of diabetes or those who want a basic review. More detailed information on each topic follows in the other sections of this book.

Diabetes is a manageable chronic disease. As with anything new, it will take time to learn all of the skills necessary to manage it. Your healthcare team will equip you with tools to help you manage your diabetes. It is important to know that care is SPECIFIC TO YOU, and you will need to talk to your provider about your medications and blood sugar goals. This book is a general tool, but YOUR NEEDS may be different.

With diabetes, your body can’t make enough insulin or does not use insulin properly. Insulin is needed to move sugar (glucose) from your blood into your cells to be used as energy. If insulin isn’t doing its job, or you’re not making enough insulin, your blood sugar will be too high. Changes in lifestyle (food and exercise) and medications will help your body use insulin better.

**What causes type 1 diabetes?**

In type 1 diabetes an autoimmune, genetic, or environmental factor caused the body to destroy the cells that produce insulin. This is why a person with type 1 diabetes has to take insulin every day.

People who have family members with certain thyroid disorders, type 1 diabetes, lupus, or other “autoimmune” conditions (meaning your body attacks your own cells) will be at higher risk for also developing type 1 diabetes.
What causes type 2 diabetes?

Anyone can get diabetes, however certain factors put you at higher risk for type 2 diabetes such as:

- Being overweight
- Family history of diabetes
- Older age
- Not being physically active
- Race, ethnicity
- Having diabetes when pregnant (Gestational Diabetes) or delivering a baby over 9 pounds at birth.
- Women with polycystic ovarian syndrome (PCOS)
- Heart disease

Certain medications, like steroids, can increase blood sugar but that does not necessarily mean that you have diabetes. Further testing is needed to diagnose diabetes.

Some risk factors for type 2 diabetes are things you can change, like preventing weight gain with a healthy diet, while other risk factors are things you cannot change, like your age or family history. It’s important to talk to your healthcare provider about your level of risk.

Check the box for the type of diabetes you have:

- **Type 1**: The body is unable to make insulin and the only treatment is to take insulin every day.
- **Type 2**: The body makes some insulin and/or the cells do not use the insulin properly. Food, exercise, pills, and injectable medications including insulin may be used to treat it.
- **Gestational Diabetes**: Occurs during pregnancy and most often goes away at the time of birth. Those with a history of diabetes during pregnancy need to be tested for type 2 diabetes every 1-3 years.
- **Other**: There are other types of diabetes from pancreas injury, surgery, medications, or genetics.

How is diabetes diagnosed?

- Fasting blood sugar greater than or equal to 126
- Random blood sugar greater than or equal to 200
- A1C greater than or equal to 6.5%
What is an A1C?
The sugar in your bloodstream sticks to the red blood cells. A1C is a measure of how much glucose is attached to the red blood cells. Red blood cells regenerate every 3 months. This is why the A1C is a measurement of your average glucose in the last 3 months. Keep in mind A1C is not accurate in certain patients and check with your provider about your individual goal and place a star next to it.

Your A1C result: ___________________________ Date: _________________

Hba1c | Mean Blood Glucose
--- | ---
14.0 | 380
13.0 | 350
12.0 | 315
11.0 | 280
10.0 | 250
9.0 | 215
8.0 | 180
7.0 | 150
6.0 | 115
5.0 | 80
4.0 | 50

Note:
An A1C above 14% is not listed but is a blood sugar average over 380.

How can I check my blood sugar?
You can check your blood sugar in more than one way. You can manually test using a glucometer (blood sugar machine) or wear technology that continually takes glucose readings throughout the day with a continuous glucose monitor (CGM).

See page 62 for more information on CGMs.

If you use a glucometer, there is a glucose log on page 84 to record your sugars.
How to manually check your blood sugars:
To check your blood sugars at home you will need:

- Glucometer (machine to test glucose)
- Test strips
- Lancets (Tiny needles that prick your finger to get blood)

STEP 1: First, wash hands

STEP 2: Put test strip in glucometer

STEP 3: Load lancing device and prick finger to get blood.

STEP 4: Squeeze finger to get blood and place small drop of blood on test strip.

**TIPS!**

The part that goes into the machine usually has metal lines.

Change your lancet EVERY TIME. Dull needles may cause pain.

If difficulty getting blood rub your hands to warm them and use warm water to wash your hands.
The glucose meter will provide a reading of your blood sugar. Write down your blood sugar results in a logbook and bring your meter and logbook to your provider’s visits.

**Questions on your meter?** Call the 1-800 phone number on the back of your meter for technical assistance.

**What should my readings be and when should I check?**
Your provider will tell you how many times to check. The best times to check are:

- Before you eat or drink anything 80-130 mg/dl
- Before meals 80-130 mg/dl
- 2 hours after a meal 80-180 mg/dl
- At bedtime 90-150 mg/dl

You should check your glucose more frequently when you are sick, pregnant, changing or adding medications, or have been experiencing high or low readings.

These target ranges may be different for you. **Ask your provider for YOUR specific target ranges.**

**What if my blood sugar is not at goal?**

**Don’t be surprised if your blood sugars are not always well controlled.**

- The goal is to keep high and low blood sugars to a minimum.
- Call your provider if your blood sugars are often greater than 250 mg/dl or if you have any unexplained low blood sugars. Your treatment plan may need adjusting.
High blood sugars

Also known as ‘hyperglycemia’ is too much sugar in your blood. (Usually defined as a blood sugar greater than 130 mg/dl before a meal OR greater than 180 mg/dl 2 hours after a meal).

What can cause my blood sugar to become high?

■ Eating more carbohydrate containing food than usual
■ Skipping or taking too little diabetes medication
■ Less activity than usual
■ Being sick or under stress
■ Certain medications (such as steroids)

How to manage high blood sugar:

■ Drink plenty of water or sugar-free beverages
■ Check your blood sugar more often.
■ Keep a food diary to see which foods “trigger” high blood sugars.
■ Consider having a lower carbohydrate meal.

Discuss with your provider when to call them about hyperglycemia. Blood sugars that are frequently over 250 may be a concern.

Symptoms of hyperglycemia

You may feel nothing at all. More serious symptoms include:

■ Dry mouth
■ Increased hunger
■ Increased thirst
■ Weakness
■ Headache
■ Blurred vision
■ Frequent urination
Low blood sugars

Also known as “hypoglycemia” needs to be treated right away! A blood sugar less than 70 mg/dl is too low except in pregnancy (less than 60 mg/dl in pregnancy is too low).

What causes low blood sugars?

- Taking insulin and not eating
- Drinking alcohol, especially on an empty stomach
- Exercising more than usual if on medications that cause low blood sugars
- Taking too high a dose of diabetes medicine

Symptoms of hypoglycemia

You may feel nothing at all. If that's the case, please ask your diabetes team about a continuous glucose monitor that can alarm you of low sugars!

Treating low blood sugars

The “15-15 Rule”—Eat or drink 15 grams of fast-acting carbohydrate to raise your blood sugar and check your blood sugar again after 15 minutes. If it's still below 70 mg/dL, have another 15 grams of fasting-acting carbohydrate.

Examples of 15 grams carbohydrates include:

- Glucose tablets (see instructions)
- Gel tube (see instructions)
- 4 ounces (1/2 cup) of juice or regular soda (not diet)
- 1 tablespoon of sugar, honey, or corn syrup
- Hard candies, jellybeans, or gumdrops—see food label for how many to consume

Repeat these steps until your blood sugar is at least 70 mg/dL. Once your blood sugar is back to normal, eat a meal or snack to make sure it doesn’t go low again.

TIP!

Try not to treat a low blood sugar with chocolate, peanut butter or other high-fat foods. They don’t raise your blood sugar fast enough.
Severe hypoglycemia

Most people do not experience severe low blood sugar. Severe low blood sugar can make you pass out, have a seizure, or have difficulty swallowing. In some cases it can lead to coma or even death. If you become unable to treat your own low blood sugar by using fast-acting carbohydrates, then friends, family and coworkers can be taught to give you a rescue medication called glucagon which can be given by injection or nasal spray. Your diabetes provider can prescribe a glucagon kit if you are at risk of having severe low blood sugar. Please see page 74-75 in additional topics section on how to administer glucagon.

Above are examples of injectable and nasally-administered glucagon.

Ask your provider if you are at risk for severe low blood sugar.

Safety tips

- ALWAYS check your blood sugar before driving or operating heavy machinery. Low blood sugars can cause you to not think clearly, pass out, or worse.
- Be sure to wear diabetes identification at all times (necklace, bracelet, etc.) which are available in pharmacies and online.
- Carry a form of glucose with you AT ALL TIMES so you are ready to treat any lows!
How do I manage my diabetes?

The main treatment of diabetes includes:

- Change in lifestyle (healthier food choices and increased activity)
- Stress management
- Diabetes education
- Diabetes medications
- Glucose monitoring

These topics are discussed in detail in the other chapters of this book.

Insulin therapy

What is insulin?

Insulin is an injectable medication that helps our body use our glucose better. The pancreas releases this hormone in the body with each meal.

Who needs Insulin?

Insulin is always the treatment plan for people with type 1 diabetes and sometimes part of the treatment plan for people with type 2 diabetes. Insulin can help to get your blood sugar under control quickly and safely. The types and doses of insulin will vary from one person to another and may be used in addition to oral medications. Insulin is used in the hospital regularly to control blood sugars. Using insulin may be the best way to control your diabetes and prevent long term complications.

How do I store my insulin?

- Most insulin should be stored in the refrigerator before it is used. Once the pen or vial is used, it does not have to be kept in the refrigerator. It can be left at room temperature (not too hot and not too cold)
- After being used for the first time, most insulin is good for 28-30 days; however, this can vary by brand or by type (cloudy insulin that needs mixing may only last 14 days) check with your pharmacy or please read the package insert.
- Pre-drawn syringes need to be stored in the refrigerator with the needle facing up.
Using a pre-filled insulin pen

You will need: Your pre-filled insulin pen, pen needle and alcohol wipe.

Get the pen ready
1. Wipe tip of pen with alcohol.
2. Tear off paper tab from needle.
3. Screw needle onto pen.
4. Remove both caps off the needle.

If your pen contains combination insulin you will need to mix the insulin before you remove the caps. Roll the pen between your palms 10 times keeping the pen horizontal, then gently move the pen up and down. When the insulin appears white and cloudy it is ready.

Next, prime the pen needle*
5. Turn pen dial until you see a ‘2’ in the dose window.
6. Hold pen needle facing up. Push on the button at the end of the pen until it turns back to zero.
7. Look for a drop of insulin at the tip. If no drop, repeat steps 5 and 6 until you see a drop.
8. Dial to your dose.

Injection
See page 16

*Read your specific pen’s package insert for more information about your pen

Please note, you do not need to pinch your skin if your needle tip is less than 6mm (it will absorb better without pinching!)
How do I use syringe and vial?

A syringe, insulin bottle & alcohol wipe

1. If using a cloudy insulin roll the bottle of insulin until mixed (no rolling is needed if using clear insulin)

2. Wipe top of bottle with alcohol wipe.

3. Take caps off needle and plunger. Pull plunger down to the number of units you will need.

4. With bottle on table, put needle into bottle. Push plunger down to push air into bottle.

5. Turn bottle upside down.

6. Pull the plunger down to draw insulin into the syringe. Make sure you only pull down to the number of units you need.

7. Check for air bubbles. If air bubbles are seen in the syringe, push the insulin back into the bottle and again pull down on the plunger to the number of units you need.

8. Injection

   See page 16
Injecting insulin

Choose the Injection Site:
The highlighted areas in the pictures show the sites where you can inject insulin into fat.

- **Stomach** (at least 2 inches from belly button, scars and moles).
- **Middle or outer part of thigh**, at least 4 inches above knee and at least 4 inches down from top of leg.
- **The back of the arm may be used.** It may be difficult to inject into the right spot when giving yourself an injection in the back of your arm.

*Change sites often to avoid scar tissue build-up*

Injection using a pen or syringe

- Pinch up skin if needed (if you are very thin or if you are using a pen needle more than 6 mm long)
- Push needle straight into skin (at 90 degree angle)
- Press dose button or plunger down firmly until it stops.
- Hold needle in skin for 10 seconds.
- Remove needle from skin.
- If pen, place large cap on needle; turn counterclockwise to remove needle from pen
- Throw away the needle or syringe in a sharps container.
- If you see insulin drops coming from the pen when you remove it from your body—do not give another injection! Count slower or longer next time.

How do I dispose of sharps? (Lancets, insulin syringes and pen needles):

- DO NOT throw away sharps or needles directly into regular trash or recycling bins! They must be in a container.
- DO NOT flush down the toilet!
If you do not have an FDA-approved sharps container:

- Use a sturdy household container with a tight-fitting cap
- Label container: “DO NOT RECYCLE”.
- When nearly full, bring container to sharps disposal program OR dispose in regular trash, not recycling.

Check with your local or state health department. CT Department of Environmental Protection or Bureau of Waste Management

- Safeneedledisposal.org
- 1.800.643.1643

**NUTRITION**

Healthy eating tips

Following a “diabetic diet” does not mean eliminating foods, it means everything in moderation. Until you see the diabetes educator or registered dietitian, it is recommended you follow these general guidelines and use the food plate method.

**General guidelines from the American Diabetes Association:**

1. Choose whole unprocessed foods over processed foods
2. Eat non-starchy vegetables.
3. Limit or avoid foods with added sugars and refined grains.
4. Drink sugar free beverages such as water instead of soda, diet soda, or sugary drinks.
5. Low-carb, vegetarian, and Mediterranean diets have shown a positive effect on managing diabetes.
What is the food plate method?
The food plate method divides a 9 inch plate into 3 sections to help with portion sizes and eating healthy.

Plate is 9” in diameter with regular-size portions

- These foods raise blood sugar
- These foods slightly raise blood sugar
- These foods have little effect on blood sugar

**FIRST** Take your plate and split it into 2 equal sections. On one side you will place your non-starchy vegetables. On the second side you will cut it into equal halves again and one side will be for protein and the other for your starch (potato/rice/bread/pasta).

**THEN fill your plate with Non-starchy vegetables, protein, and starch.**
Fill the largest section with vegetables that are not starchy which do not increase the glucose.

- Asparagus
- Broccoli
- Cauliflower
- Celery
- Green beans
- Kale
- Lettuce
- Mushrooms
- Spinach
- Zucchini

Protein (only slightly raises glucose) is placed in a quarter of the plate such as:

- Chicken
- Eggs
- Low-fat cheese
- Salmon
- Tilapia
- Tofu
- Tuna
- Turkey
- Beans (black, lima, pinto)
- Lentils

Starches (increase the glucose) are also placed in a quarter of the plate such as:

- Beans (black, lima, pinto)
- Bread
- Corn
- Green peas
- Lentils
- Pasta
- Potatoes
- Quinoa
- Rice
- Tortilla
**Example of food plate**

**Lunch ideas:**

**Protein:** Choose 1

**Starch (carbohydrate):**
- Women Choose 2-3
- Men choose 3-4

1. 3 oz low salt sandwich meat or cheese.
2. 2 Tbs peanut butter
3. 1/3 cup tuna or chicken salad
4. 3 oz chicken breast, beef or fish

**FREE VEGETABLES:** Choose 1-2 cups of the following
- Broccoli, asparagus, green beans, Brussels Sprouts, cabbage, cauliflower, celery, cucumber, eggplant, green onion, salad greens, leeks, mushrooms, pea pods, peppers, radishes, spinach, summer squash, tomatoes, turnips

**Free Vegetable:** Choose 1-2 cups

**Meal ideas:**

1. **1/3 cup tuna salad on 2 slices whole wheat and 1 cup of milk (3 Carbs or 45 g)**
2. **3 oz chicken breast over 2 cups tossed salad, peppers, tomatoes and shredded carrot, 1/2 cup garbanzo beans, 1 cup of milk and 3/4 cup berries (3 Carbs or 45 g)**
3. **2/3 cup rice, 1 cup stir fried vegetables and 3 oz chicken or beef, 1 cup skim milk (3 Carbs or 45 g)**
4. **6 oz Greek yogurt, 3/4 cup berries or other fruit and 1/4 cup cereal for a fruit/yogurt parfait (3 Carbs or 45 g)**
Physical activity
Exercise is one of the main ways of lowering sugar and treating diabetes. Even 10 minutes a day can benefit your health! Please see page 36 for complete details.

Weight management
Weight management may be an important part of your diabetes treatment plan. Losing even a small amount of weight (5-7% of your current body weight) will help the cells in your body to use insulin better. Small changes in your diet and adding exercise to your daily schedule can help you to successfully lose weight at a safe and sustainable rate of 1-2 pounds weekly. Follow the advice of your diabetes care team to find the diet plan that works for you.
Your eating plan is a key tool to help you manage your diabetes. Most of your fuel comes from the body breaking carbohydrates down to glucose (sugar). When the body does not use glucose properly, blood sugar levels will remain in the bloodstream and become too high.

**CARBOHYDRATE ➔ BLOOD SUGAR**

You may think you need to avoid certain foods completely and be limited to a strict diet. This is far from the truth! Instead, we advise a flexible meal plan that respects your cultural & personal food preferences while managing your diabetes.

**What is a flexible meal plan?**
A registered dietitian can help you find a meal plan that is healthy and helpful for you. It can help you determine what to eat, how much to eat and when to eat.

**Why is healthy eating important?**
- Better control of blood sugar levels
- More energy
- Achieve or keep a healthy body weight
- Avoid or delay diabetes complications

**What is healthy eating?**
- Being aware of food portions
- Selecting more often foods rich in fiber, antioxidants, vitamins, minerals and other nutrients important for health
- More often selecting heart healthy foods
- Eating just enough food for adequate nourishment and satisfaction

**Can I still eat carbohydrates?**
You can continue to eat carbohydrate foods. Carbohydrates provide important fuel and are part of a balanced meal along with protein and heart-healthy fats. Just make the majority of the carbohydrates you eat be better choices for you and pay attention to serving sizes. Your dietitian can help you with this. You can also limit foods with added sugars and avoid sugar-sweetened drinks.
What are some healthy habits I can start today?

- Eat a balanced meal including some carbohydrates, lean protein & heart healthy fats to get all the nutrients you need to stay healthy.
- Eat meals and snacks at regular times & don’t skip meals to avoid overeating
- Read nutrition labels and be mindful of serving sizes to avoid overeating
- Eat foods with less sugar and less saturated fat to help stabilize blood sugar levels and increase heart health
- Eat 5-7 ounces of lean protein daily
- Drink 6-8 cups of water or sugar-free beverages daily
- If you are overweight, lose weight. Losing at least 5-7% of your total body weight can help blood sugar control and heart health. For example, if you weight 200 pounds, you may consider losing 10-14 pounds as a start.
- If you drink alcohol, do so in moderation and with food.
- Ask your dietitian and provider team about how to respect your culture and ethnicity in creating a tailored meal plan (see Topic #10 Race, Ethnicity, Faith, and Our Diabetes Health page 68) or to accommodate religious rules around holidays.

How to read a food label

Use the label to make better food choices. Labels can be especially useful when planning meals if you use carbohydrate counting. Nutrition information can differ a lot between food brands so begin comparing labels to select foods based on your goals. Remember sugar-free does not mean carbohydrate free!

![Nutrition Facts]

1. **Serving size** – The label information is based on that one serving size. Remember the more servings eaten, the higher your intake of carbohydrates, fats, sodium and calories

2. **Total Carbohydrate** – This is the total of fiber, sugar and starches added together. This is important if you are counting carbohydrates since every 15 grams = 1 carbohydrate serving.

3. **Fiber** – This is the part of plant food that is partially digested & helps blood sugar control, improves cholesterol levels and helps with regularity as well as meal satisfaction. We advise 25 grams for women and 38 grams for men per day. Look for food with 3 grams or more of Dietary Fiber.

4. **Added Sugars** – This is the amount added during processing of the food which is different than the sugar naturally found in the food. Choose foods with less added sugars.
5. **Total Fat** – Choose foods with more heart healthy monounsaturated & polyunsaturated fats. By law, labels need to list Saturated Fats & Trans-Fats. To get the amount of heart healthy fats, subtract the amount of saturated & trans-fat from the total fat.

6. **Sodium** – Try to keep sodium intake down to 2300 mg or less daily. Many people eat much more sodium than needed from processed foods. Try to keep meals at 500-600 mg sodium by choosing more fresh or frozen foods and unsalted canned foods.

In this example there are 4 servings per container. One serving= 1 cup. In that 1 cup, there are a total of 34 grams of carbohydrates. If you consumed the entire amount included (4 servings), you will have eaten a total of 136 grams of carbohydrates.

### What is carbohydrate counting?

One method of keeping track of servings is to use the carbohydrate counting method. A carbohydrate serving is defined as 15 grams of carbohydrate by the American Diabetes Association. The carbohydrate content of your food in grams can be found on the food label. The total carbohydrate amount you see on the food label is based on the serving size listed.

### How many carbohydrates should I eat if I am counting carbs?

You and your dietitian will determine the amount of carbohydrates appropriate for you. In general, reducing overall carbohydrates eaten has resulted in better blood sugar control. General guidelines are the following:

- 2-3 Carb servings (30-45 grams) per meals for women
- 3-4 Carb servings (45-60 grams) per meals for men

*Consult with your dietitian for your personal requirements*

### What can I eat until I see the dietitian?

A food plan you can follow until you see a dietitian is the **Food Plate** (see page 18). Make half your plate non-starchy vegetables. Split the other half of your plate between carbohydrate and protein foods. This way, half of your plate will be full of low-calorie vegetables and loaded with anti-oxidants, fiber, vitamins and minerals.
Below is an example of menus highlighting carbohydrate (in blue) versus other non-carbohydrate foods in black. The meals range between 30-45 grams of carb:

**Breakfast:**
- 2 whole wheat toast (30 gms), 1-2 eggs, 2 tsp margarine, 2 clementines (15 gms)
- OR 1 cup reduced fat Greek yogurt (15 gms), ½ c fruit (15 gms), 1 TBSP nuts

**Lunch:**
- 2 slices whole wheat bread (30 gms), ½ c tuna (packed in water) mixed with 1 TBSP of mayonnaise, fresh baby carrots, 3 cups lite popcorn (15 gms)
- OR 2 cups of homemade or reduced sodium soup (30 gms), 6 crackers (15 gms), 2-3 oz of reduced fat cheese, vegetable salad with 2 TBSP salad dressing

**Dinner:**
- 1 cup brown rice or wild rice (45 gms), 3 oz baked fish, 1-2 c cooked broccoli, tossed salad, 4 TBSP lite dressing
- OR 1 cup whole wheat pasta or chick pea flour pasta (34-45 gms), ½ cup marinara sauce, 3 oz lean ground meat, large vegetable salad, 3-4 TBSP lite salad dressing
- OR 1 TBSP olive oil & any amount flavored vinegar

**Snacks:**
- **15 gm Carbohydrate ideas:**
  - small apple or 1 cup berries
  - 6 oz lite Greek Yogurt (any flavor)
  - 3 cups lite popcorn & 1 TBSP grated cheese
- **30 gm Carbohydrate ideas:**
  - medium apple & 1 oz reduced fat cheese
  - 6 oz lite Greek yogurt & 1/2c fruit
  - medium banana & 1 TBSP peanut butter

**Beverages:**
Many people may not consider the calories and nutrients of what they drink. The zero or low calorie drinks should not drastically increase sugar, but many drinks in the “avoid” section may have hundreds of calories in one serving!

**Non-alcoholic beverages**
Water is the drink of choice, but otherwise the focus is on zero calorie or low-calorie drinks.

**Zero or low-calorie drinks**
- Water (still or sparkling)
- Diet soda
- Unsweetened or diet teas
- Unsweetened coffee

**Drinks to avoid**
- Regular soda (1 12 ounce can has 10 teaspoons of sugar or 40 grams of carbs!)
- Fruit punch
- Sports drinks
- Energy drinks
Alcohol and Diabetes

Most people with diabetes can drink alcohol if they are careful and only consume an occasional moderate amount with food. While moderate amounts of alcohol can cause the blood sugar to rise, excessive amounts of alcohol can cause your blood sugar to drop to dangerously low levels. Because drinking too much alcohol can affect your liver, it can actually cause low blood sugar up to 24 hours later. A moderate amount of alcohol is no more than: 1 drink for women per day or 2 drinks for men per day.

One drink is equal to: 1.5 oz of liquor, 12 oz of beer, and 5 oz of wine. Beer and wine contain carbohydrates, so it is important to check your blood glucose levels and be aware of how much you consume.

Drinking excessive alcohol can lower your blood glucose for up to 24 hours. To stay safe, make sure you always eat if you drink alcohol and check your blood glucose more often the day you drink and the next day to see how alcohol affects you. Tell people with you that you have diabetes and teach them about signs of low blood glucose. Emergency medications such as glucagon will not work to treat low blood sugar when consuming alcohol.

Some people with diabetes should avoid alcohol altogether. Be sure to talk to your provider or pharmacist if you have concerns. Avoid alcohol if your diabetes is not well managed, if you have complications such as severe neuropathy, if you take medicines that say avoid alcohol on the bottle, if your provider has told you not to, or if you have problems with alcohol.

Each beverage above is one standard alcohol drink with varying amounts of alcohol percentages.
Heart healthy diet

**Eat more fish.** Increase your intake to 2 or more servings weekly. The fattier fish carry more Omega-3 fats known for heart healthy benefits. Salmon, tuna, mackerel, herring contain the most Omega-3. Other sources include walnuts, chia seeds and ground flax seeds.

**Choose less food with less added sugars.** “Added sugars” is different than sugar found in the natural state of that food. The American Heart Association advises: women have less than 6 teaspoon (24 grams) of added sugars daily and men have less than 9 teaspoons (34 grams) of added sugars daily. A twelve ounce can of soda or juice provides 8 tsp (32 grams) of added sugar.

**Eat foods with more fiber.** Eat more vegetables, whole grains, nuts, seeds, fruit, beans, dried peas, lentils. These foods also carry anti-oxidants and important vitamins & minerals for your health. The food label will tell you the amount of fiber per serving. Here is the amount of fiber recommended: Women should have 20-25 fiber grams daily and men should have 25-30 fiber grams daily.

**Eat less salt.** Lowering your salt intake to less than 2300 milligrams (mg) daily can reduce the risk of high blood pressure. Less than 1500 mg is advised for people with high blood pressure and diabetes. Look at the nutrition label to find the sodium amount per serving of any foods. Choose fresh & homemade food more often to lower salt intake. Your taste-buds need a few weeks to get used to less salt. Flavor foods with more herbs & spices and include lemon/lime juice and flavored vinegars.

**Eat more foods with heart-healthy fats** such as avocados, canola oil, fatty fish, tub margarine, nuts, olive oil, olives, peanut butter & other nut butters, peanut oil, pumpkin & sunflower seeds, soybean nuts. These foods contain mostly monounsaturated and polyunsaturated fats from plants and are liquid at room temperature. Limit saturated fats such as bacon, butter, cheese, coconut oil, cream, lard, meat fat, palm kernel oil, shortening, sour cream, whole milk & whole milk products. Avoid foods with Trans Fat such as baked goods, canned frosting, fried foods, stick margarine, partially hydrogenated oils, and pastries.

**Try the Mediterranean Diet.** The benefits include improving blood sugar control, lowering your risk for heart disease and Alzheimer’s and increased ability to fight certain cancers.
How do I get referred to a dietitian?

You can be referred by your primary care provider or endocrinology team. You may also be able to refer yourself to diabetes education and medical nutrition therapy with a dietitian. Dietitians can be found in the hospital outpatient nutrition offices as well as diabetes and endocrinology departments.

Below include Hartford Healthcare Endocrinology departments and the Diabetes Self-Management Education programs which can be seen page 89.

If you are getting home care from Hartford Healthcare at Home, then you may be able to see one of our dietitians in the homecare setting.
The first step in management of diabetes is to have a healthy lifestyle which includes food and activity. Lifestyle alone may be enough for some people while others may need medications such as insulin to get their sugars to goal. Medications work on different parts of the body to help lower blood sugar. Consider medications as different tools in the toolbox to help you in this journey.

**Insulin**

In *type 1 Diabetes*, the pancreas does not make insulin, so the main treatment is insulin. Insulin is injected with a needle and syringe, pen device, or by an insulin pump.
<table>
<thead>
<tr>
<th>Type of insulin</th>
<th>Approximate length of time in our body**</th>
<th>How it works</th>
<th>Examples</th>
</tr>
</thead>
</table>
| Long acting or BASAL insulin | 24+ hours                                | Controls blood sugar between meals and during the night. Basal insulin controls your fasting blood sugar, not the increase in blood sugar from eating. Take daily; in some cases twice daily. | - glargine (Lantus, Basaglar, Semglee)  
- glargine (Toujeo)  
- degludec (Tresiba)  
- detemir (Levemir) |
| Short acting insulin or BOLUS insulin | 7-8 hours                               | Controls your blood sugar when you eat. Take 30 minutes before a meal.         | - regular insulin                                                      |
| Rapid acting or BOLUS insulin | 4-5 hours                                | Controls your blood sugar when you eat. Take within 15 minutes before a meal (except Fiasp and Apidra- can take at start of a meal or within 20 minutes after starting a meal). | - aspart (Novolog, Fiasp)  
- lispro (Humalog, Lyumjev)  
- glulisine (Apidra) |
| Intermediate acting           | 12-16 hours                              | Controls your blood sugar for around 12 hours at a time. Dosed at different times of day sometimes before breakfast, before supper, or sometimes even at bedtime. Vial or pen must be rolled before injecting. | NPH (humulin, novolin)                                                   |
| Combination insulin           | 12 hours                                 | This is a combination of NPH and a short or rapid acting insulin. This looks cloudy in appearance and must be rolled prior to injecting. | NovoLOG 70/30  
NovoLIN 70/30  
Humulin 50/50 |

Please note: The concentration varies in the insulins above and can vary in U-100 (100 units/mL), U-200 (200 units/mL), U-300 (300 units/mL) or U-500 (500 units/mL) options **Depending on your age and how your kidneys work, the insulin may work for a longer or shorter time. Please see figure below for visual of insulin duration.

![Comparison of Equal Amounts of Different Types of Insulin](image-url)
With type 2 diabetes, many of the regulating systems are not working correctly to keep your sugar in the normal range. Several of these organs may not work correctly, and there are several different medications which can focus on each organ.

There’s no one size fits all, however one or several medications may be utilized to get you to goal.

Before we discuss non-insulin medications, let’s discuss each organ.

**Pancreas:**
The pancreas makes both insulin which helps lower blood sugar, and glucagon which helps raise blood sugar.

**Liver:**
The liver stores extra glucose as glycogen for later use. When not eating, the liver starts releasing this stored sugar. If the glycogen amount is low the liver makes ketones from fat as fuel for the body. Too many ketones can be dangerous.

**Kidneys:**
Kidneys clean waste from our blood. Extra sugar is also processed by the kidneys and placed into our urine. The kidneys reabsorb some of the sugar before we urinate it, but when there is too much sugar to handle, it leaves our body through our urine.
Medications that can Increase Blood Sugar

Some medications might cause your blood sugar to increase. These include:

- Steroids (e.g. prednisone, hydrocortisone, dexamethasone)
- Some mood medications
- Birth control pills
- Some heart and blood pressure medications
- Statins
- Niacin
- Certain antibiotics
- Decongestants (pseudoephedrine, phenylephrine)

Even though these medications can potentially increase blood sugar, it doesn't mean you shouldn't take them if you need them. It’s important to work with your provider and take your medications as directed. While these may have the potential to increase blood sugar, the benefits of using them often outweighs that risk. For example, the benefits of statins in preventing heart attack and stroke (which are major causes of death for people with diabetes) far outweigh the risk of elevated blood sugar levels.

When you have not eaten and your sugar goes low, your pancreas makes glucagon. The glucagon tells your liver to put out stored sugar into the bloodstream. In type 2 diabetes insulin is not effective enough and there is too much effect from glucagon, causing blood sugars to run high.
Different medications work on different organs and hormones to decrease blood sugars in diabetes as noted in the following picture and medication table.

**Pills and non-insulin injectables**

Shown below is a table on medication names, most common side effects, effects on weight, and key points.

<table>
<thead>
<tr>
<th>Medication Class</th>
<th>Medication Generic (Brand)</th>
<th>How they work</th>
<th>Common Side Effects</th>
<th>A1c reduced</th>
<th>Effect on weight</th>
<th>Key points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biguanide</td>
<td>Metformin (Glucophage)</td>
<td>Reduces production of sugar from liver, Helps insulin work on muscle</td>
<td>Nausea, diarrhea</td>
<td>1-2%</td>
<td>▼ ~10 lb</td>
<td>Take with meals, Protects heart</td>
</tr>
<tr>
<td>GLP1 agonist</td>
<td>Liraglutide (Victoza)</td>
<td>Increases insulin, Decreases glucagon effect, Helps insulin work on muscle, Reduces appetite</td>
<td>Nausea, diarrhea</td>
<td>1-1.5%</td>
<td>▼ ~3-6 lb</td>
<td>Some injectables are weekly, Protects heart and kidneys</td>
</tr>
<tr>
<td>GLP1 agonist</td>
<td>Sitagliptin (Januvia)</td>
<td>Increases insulin, Decreases glucagon effect, Helps insulin work on muscle</td>
<td>Upset stomach (mild if any)</td>
<td>0.5-1%</td>
<td>—</td>
<td>Convenient once daily dosing</td>
</tr>
<tr>
<td>GLP1 agonist</td>
<td>Saxagliptin (Onglyza)</td>
<td>Increases insulin, Decreases glucagon effect, Helps insulin work on muscle</td>
<td>Upset stomach (mild if any)</td>
<td>0.5-1%</td>
<td>▼ ~3-6 lb</td>
<td>Important to stay hydrated, Protects heart and kidneys</td>
</tr>
<tr>
<td>GLP1 agonist</td>
<td>Alogliptin (Nesina)</td>
<td>Increases insulin, Decreases glucagon effect, Helps insulin work on muscle</td>
<td>Upset stomach (mild if any)</td>
<td>0.5-1%</td>
<td>▼ ~3-6 lb</td>
<td>Important to stay hydrated, Protects heart and kidneys</td>
</tr>
<tr>
<td>SGLT2 inhibitor</td>
<td>Empagliflozin (Jardiance)</td>
<td>Increases excretion of sugar in urine</td>
<td>Urinary tract infections, dehydration, lower blood pressure</td>
<td>0.5-1%</td>
<td>▼ ~3-6 lb</td>
<td>Important to stay hydrated, Protects heart and kidneys</td>
</tr>
<tr>
<td>SGLT2 inhibitor</td>
<td>Dapagliflozin (Farxiga)</td>
<td>Increases excretion of sugar in urine</td>
<td>Urinary tract infections, dehydration, lower blood pressure</td>
<td>0.5-1%</td>
<td>▼ ~3-6 lb</td>
<td>Important to stay hydrated, Protects heart and kidneys</td>
</tr>
<tr>
<td>SGLT2 inhibitor</td>
<td>Canagliflozin (Invokana)</td>
<td>Increases excretion of sugar in urine</td>
<td>Urinary tract infections, dehydration, lower blood pressure</td>
<td>0.5-1%</td>
<td>▼ ~3-6 lb</td>
<td>Important to stay hydrated, Protects heart and kidneys</td>
</tr>
<tr>
<td>TZD</td>
<td>Pioglitazone (Actos)</td>
<td>Helps sensitize muscles to insulin</td>
<td>Fluid retention, weight gain</td>
<td>1-1.5%</td>
<td>▲ ~6-8 lb</td>
<td>Can improve cholesterol</td>
</tr>
<tr>
<td>Sulfonylurea</td>
<td>Glimepiride (Amaryl)</td>
<td>Increases production of insulin</td>
<td>Hypoglycemia, weight gain</td>
<td>1-1.5%</td>
<td>▲ ~3-6 lb</td>
<td>If you skip a meal, skip a dose</td>
</tr>
<tr>
<td>Sulfonylurea</td>
<td>Glipizide (Glucotrol)</td>
<td>Increases production of insulin</td>
<td>Hypoglycemia, weight gain</td>
<td>1-1.5%</td>
<td>▲ ~3-6 lb</td>
<td>If you skip a meal, skip a dose</td>
</tr>
<tr>
<td>Meglitinide</td>
<td>Nateglinide (Starlix)</td>
<td>Increases production of insulin</td>
<td>Hypoglycemia, weight gain</td>
<td>0.5-1.5%</td>
<td>▲ ~2-5 lb</td>
<td>If you skip a meal, skip a dose</td>
</tr>
<tr>
<td>Meglitinide</td>
<td>Repaglinide (Prandin)</td>
<td>Increases production of insulin</td>
<td>Hypoglycemia, weight gain</td>
<td>0.5-1.5%</td>
<td>▲ ~2-5 lb</td>
<td>If you skip a meal, skip a dose</td>
</tr>
<tr>
<td>Dual GIP and GLP1 agonist</td>
<td>Tirzepatide (Mounjaro)</td>
<td>Increases insulin, Decreases glucagon effect, Helps insulin work on muscle, Reduces appetite [more significantly increased insulin response &amp; suppressed glucagon secretion compared to GLP1 agonist alone]</td>
<td>Nausea, diarrhea</td>
<td>1.7 – 2.4%</td>
<td>▼ 12 - 25 lb</td>
<td>Weekly injection, Protects heart and kidneys</td>
</tr>
</tbody>
</table>

Medications table: ▲ = weight gain   ▼= weight loss   — = weight neutral

Please see figure to the right on page 33 for how and where these medications work in the body.
Medications for type 2 diabetes can work by helping insulin work better, releasing insulin from the pancreas, decreasing release of sugar from the liver, or increasing sugar released into urine by the kidneys. The picture above and the medication table to the left are meant to be reviewed with your diabetes educator or health care provider for more detail on the medications you may be prescribed. The colors in the medication table (left) corresponds to the colors in the picture above.

Other Medications that may be beneficial

Having diabetes increases the risk for heart disease, heart attack, and stroke. Ask your provider about the benefits of adding a statin medication (even if your cholesterol numbers appear to be at goal), as well as aspirin.

Diabetes can also lead to kidney failure or kidney disease. Specific high blood pressure medications can help in preventing diabetic kidney disease. Ask your provider if you would benefit from a blood pressure medication.

Please note this chapter does not encompass all medications related to diabetes health.
Alcohol and Diabetes Medications

Alcohol in combination with diabetes medications can cause hypoglycemia. This is seen especially with: insulin, glipizide, glimepiride, glyburide, nateglinide, and repaglinide. If you take insulin and drink alcohol, you can create a situation where the signs of being drunk may look like the signs of low blood sugar. This can make it difficult to tell if you are drunk or you are experiencing low blood sugar.

Tip!

Medication Tip Sheet: Ask your pharmacist if you have any questions.

■ Take your medications exactly as prescribed by your provider, and call your provider with any questions or concerns on how to take them. Each medication is unique, and may have slightly different instructions than other medications you take or might have taken.

■ Make sure your provider knows if you take vitamins or supplements, in order to avoid any dangerous interactions.

■ Monitor for side effects. Make sure to report any new or worsening side effects to your provider as soon as possible.

■ Monitor your sugars carefully, as some medications can cause low blood sugar, which can be dangerous

■ Store medications in a dry place at cool or room temperature. Hot or humid places like your car or in a bathroom medicine cabinet can cause damage to the medications and cause them to not work correctly. Some injectable medications need to be refrigerated before you use them, but can then be stored at room temperature after the first use.

■ Check the expiration dates. Safely discard any medications that are past their expiration date.

■ Create a schedule. Get into the habit of taking your medications at the correct time every day. It can help to time taking your medication with routine activities like brushing your teeth or eating breakfast.

■ Keep a list of your medications and everything else you take (supplements, herbals, etc.) on you at all times. In case of an emergency, healthcare workers can quickly know what medications you may need for your diabetes. Keeping it in your wallet near your insurance or identification card may help.
Weight loss Surgery

There are times when even taking medications as ordered, living an active lifestyle, and eating healthy someone may not be at goal for their diabetes. Discuss with your provider if Weight loss surgery is something to consider.

Weight loss surgery is recommended as an option to treat type 2 diabetes if the body mass index (BMI) is high. The graph below shows BMI’s and which treatment plan is recommended for each category. Your BMI is calculated by using your height and weight. Muscle mass, gender, age and race are not used.

Surgical candidates may include people with:

- BMI 40 or higher
  - Click on the BMI calculator for adults:

- Adults with BMI 35.0 – 39.9 (32.5–37.4 in Asian Americans) with comorbidities (diabetes, etc.) who have been unsuccessful with medicines or lifestyle
Physical activity is one of the most important keys to success in managing diabetes. Any movement counts – even 10 minutes of exercise at a time makes a difference! Exercise helps to improve blood sugar control, reduce risk factors for heart disease, promote weight loss, and improve mental health and overall quality of life.

It is recommended to do different physical activities including aerobic activity, resistance exercise, and flexibility/balance training. Aerobic activity which is designed to increase heart rate while exercising, lowers heart disease risks and overall mortality. Resistance training improves strength, balance, and helps with everyday activities. Flexibility and balance exercises are particularly important in older adults to maintain range of motion, strength, and balance. They are also good at helping prevent falls.

Try to make it a point to get up and move every 30 minutes to avoid prolonged sitting!
Here are some examples of different types of exercise:

<table>
<thead>
<tr>
<th>How often?</th>
<th>Aerobic Activity</th>
<th>Resistance</th>
<th>Flexibility &amp; Balance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>At least 150 minutes per week of moderate intensity spread over at least 3 days per week</td>
<td>2-3 sessions per week</td>
<td>2-3 sessions per week</td>
</tr>
<tr>
<td></td>
<td>OR</td>
<td>Separate instead of back-to-back days</td>
<td></td>
</tr>
<tr>
<td></td>
<td>75 minutes per week of vigorous intensity or interval training may be sufficient for younger and more physically fit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Examples</td>
<td>Walking</td>
<td>Free weights</td>
<td>Tai Chi</td>
</tr>
<tr>
<td></td>
<td>Cycling</td>
<td>Weight machines</td>
<td>Yoga</td>
</tr>
<tr>
<td></td>
<td>Jogging</td>
<td>Body weight</td>
<td>Pilates</td>
</tr>
<tr>
<td></td>
<td>Swimming</td>
<td>Elastic resistance</td>
<td></td>
</tr>
</tbody>
</table>

Be safe about exercising before, during, and after!

**Before you begin your exercise:**
- Make sure that you are cleared for exercise, as some patients with heart conditions may not be safe to walk/run
- Ensure you have appropriate footwear and do not have any wounds on your feet
- Ask your provider team about medications to adjust before, during, and after exercise as benefits of exercise can last several hours

**When you exercise:**
- Exercise the same time daily, if possible
- Check your blood sugar before and after exercise
- Identify an exercise partner who knows you have diabetes
- Stay well hydrated
- Carry all supplies: snacks, glucose tabs, glucometer
- Wear a medical alert bracelet

**Caution:**
- If you are sick or have an infection, do not exercise

STOP exercising if you experience chest pain or difficulty breathing and call 9-1-1 unless your provider has told you otherwise.
For Type 1 Diabetes and Patients on insulin

Test your sugar

<table>
<thead>
<tr>
<th>Blood Sugar</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 100</td>
<td>Eat a snack with 15-30 grams of carbohydrate</td>
</tr>
<tr>
<td></td>
<td>Recheck BG in 15 minutes if between 100-250</td>
</tr>
<tr>
<td></td>
<td>Exercise</td>
</tr>
<tr>
<td>100-250</td>
<td>Exercise</td>
</tr>
<tr>
<td>Higher than 250</td>
<td>Check for Ketones and treat as prescribed by your provider</td>
</tr>
</tbody>
</table>

Consider a pre-exercise snack

If your blood sugar level is less than 100 mg/dl before you start your activity, try having a small carbohydrate snack to increase your blood sugar as exercise can lower your sugar levels. This is especially important if you took insulin or certain oral medications recently and if you will be exercising for longer than 30 minutes.
Knowing the level of ketones can prevent a life-threatening complication called diabetic ketoacidosis (DKA).

**To check for urine ketones:**
- Take out piece of filter paper from ketostick container.
- Urinate in a cup
- Place end of strip in urine for 1 second and allow it to dry for 15 seconds. (you may need to shake off excess urine)
- Compare the color at the end of filter paper to the bottle to see if you have a small or large amount of ketones.
- Do not use the ketone kit if it’s expired as it can give a false result.

**KETONES CHART**

Knowing the level of ketones can prevent a life-threatening complication called diabetic ketoacidosis (DKA).

<table>
<thead>
<tr>
<th>0</th>
<th>5</th>
<th>15</th>
<th>40</th>
<th>80</th>
<th>160</th>
</tr>
</thead>
<tbody>
<tr>
<td>NEGATIVE</td>
<td>TRACE</td>
<td>SMALL</td>
<td>MODERATE</td>
<td>LARGE</td>
<td>MORE KETONES</td>
</tr>
</tbody>
</table>

**Make an individualized plan with your provider for when to contact them. Some questions to ask:**
- How high should my sugar be before I call you?
- How many times should I have symptoms such as nausea, vomiting or loose stools before I call you?
- Do I call if I have urine ketones?
- How should I change my medications if I’m sick? (For example, there are several medications that patients should not take if they are dehydrated.)
ALWAYS contact your diabetes provider if these occur to PREVENT them from occurring again:

- Hospital admission or Emergency room visit for high sugars or low sugars.
- Any severe low sugar needing glucagon
- Frequent low sugars (how many times depends on your provider)
- Side effects of medications (rash, itching, ongoing loose stools) that do not improve

Go to the Emergency Department or call 911 if you have ANY of the following symptoms:

- Trouble breathing
- Chest pain
- Can’t hold fluids down for 12 hours
- Too weak to get out of bed
- Blood sugar above 500mg and/or large ketones in your urine

Sick Day rules for medications:

- Always take your diabetes medication unless your provider tells you not to
- Ask your provider to help you develop a sick-day plan
- Don’t skip insulin. You need to continue your long acting insulin even if you can’t eat your meals
- If you take oral pills for diabetes, take your normal dose unless your provider tells you otherwise
- If your provider tells you to take over the counter medicines such as cough drops, look for sugar free versions

Food or Liquids Recommended for Sick Days

When you aren’t feeling well, your diabetes provider, educator, or dietitian may suggest a liquid or semi-liquid diet. Always follow what your healthcare team recommended for you.

Here are some suggestions for a clear liquid diet which will provide ~15 grams of carbohydrate or 1 carbohydrate per serving (DO NOT select sugar-free or diet):

- ½ cup ginger ale/Sprite/7-up
- ½ cup grape juice or ½ cup apple juice
- 1 popsicle (1 single bar or ½ of a twin bar)
- ½ cup Kool-Aid®
- ½ cup lemonade
- 1 cup Gatorade/Powerade/Vitamin Water
- ½ cup gelatin
- ¼ cup sorbet or Italian ice

You may also have broth or bone broth but that will not provide any carbohydrate.
Suggestions for a semi-solid diet

This will provide ~15 grams of carbohydrate or 1 carbohydrate per serving (do not select sugar-free or diet):

- ½ cup pudding
- ½ cup ice cream
- 1 cup chicken noodle soup
- ½ cup cooked cereal
- 6 saltine crackers
- 1 cup milk
- ½ cup custard
- ½ cup rice pudding
- ½ packet hot chocolate

Stay hydrated!

A high blood sugar level causes you to urinate more and fever causes sweating. If you are vomiting or have diarrhea, even more body fluids are being lost. One of the most important things you can do on a sick day is to stay hydrated. Drink at least 8 ounces of calorie-free liquids each hour while you are awake. If you are nauseated, sip a little at a time.

Calorie-free liquids:

- Water
- Crystal Light
- Powerade Zero
- Gatorade Zero
- Vitamin Water Zero
- Sugar-free Kool-aid
- Diet V8 Splash
- Protein 2O

Patient sick day cases

We review two cases of patients, one who was able to control their sugars safely at home and one who needed to ask for further help. The cases below are just examples, but please ask your provider about your sick day questions AHEAD of time. Be prepared by having all the supplies at your house (medications, blood testing supplies, pedialyte, ketone kits) AHEAD of time.

Case #1

Beth has type 2 diabetes. She takes an oral pill (Metformin twice daily), long acting insulin (Lantus at night), and mealtime insulin (Humalog before meals). Beth woke up with an upset stomach, nausea, poor appetite and a blood sugar of 250 mg/dl. Beth was prepared since she had already discussed sick day guidelines with her provider.

Beth’s sick day plan:

1) If you cannot eat food, drink plenty of fluids. If you have trouble keeping fluids down, take small sips every 15 minutes throughout the day to avoid dehydration. You may try Pedialyte (over the counter) beverage or frozen pops to keep hydrated and get important minerals.
2) Check your blood sugars every 2-3 hours of the day and night since being ill can raise blood sugars quickly and too high.

3) If you experience a low blood sugar (less than 70 mg/dl for Beth) eat 15 grams of fast-acting carbohydrate. Make sure to recheck your blood sugar in 15 minutes to check if glucose is above 70 mg/dL. If blood sugar does not rise, take another 15 grams of fast-acting carbohydrate and test again 15 minutes later.

Following her plan, Beth decided to take sips of liquid every 15 minutes for now and later try semi-solid food. Her plan was to have 1-2 servings of carbohydrate every 2-3 hours to keep hydrated and get enough calories to heal. By the afternoon, she felt better and her blood sugars continued to be below 240 mg/dl. Below are the sick day menu options she worked out with the dietitian.

**Breakfast:**
1 c plain tea or black coffee with 1 TBSP sugar/honey, ½ c apple juice

**Snack:**
1 c regular jello or ½ c jello, 5-6 saltine crackers, 1 c broth or ½ c Pedialyte

**Lunch:**
½ c apple juice or ½ c regular soda, 1 regular popsicle- not sugar-free) or 1 c Pedialyte

**Snack:**
½ cup regular cranberry juice

**Supper:**
½ c apple juice, ½ c watery hot cereal with 1 TBSP brown sugar/ or ½ c frozen yogurt or ice-cream or 1 Pedialyte

**Snack:**
½ c regular jello or ½ c Pedialyte

**Medication Plan**
1) Continue taking metformin and long acting insulin as prescribed.

2) If you skip a meal, skip your mealtime insulin.

3) If you are able to eat about the same amount of carbs during meals as usual, continue your mealtime insulin at the prescribed dose. If you are only able to eat about half of the amount of carbs, cut your mealtime insulin dose in half.

4) If your blood sugars are higher than the level your provider has set for you, seek medical advice as your provider may need to increase your medication.
Case #2

Fred has type 1 diabetes and currently uses long acting insulin (levemir at bedtime) and mealtime insulin (Humalog). He has recently been going through a divorce. Due to the stress he has had a poor appetite, isn’t sleeping well or testing his blood sugars as much.

Fred wakes up one morning with stomach pain, fruity breath, and extreme thirst. He checks his sugar, and it is 362mg/dL. He remembers that his endocrinologist advised him to check to see if he has ketones in blood if his blood glucose was above 250mg/dL. When Fred completes the urine ketone test and sees that he has a dark purple color with the words “LARGE” ketones underneath.

Fred realizes that he had forgotten to inject Humalog with his pasta dinner yesterday AND he forgot his levemir at bedtime. Fred calls his endocrinology provider to determine the best next steps.

He speaks to his provider and is advised that he could be experiencing DKA (diabetic ketoacidosis) which is a dangerous and life-threatening condition. His provider believes that his condition has progressed too far to be treated at home with increased insulin doses. Now Fred will be taken to the emergency room for treatment with fluids, insulin, and frequent blood glucose checks.

Fred realizes that he needs some help to better take care of himself to prevent this situation in the future. He plans on reaching out to a psychologist to discuss his depression and learn how to handle the stress in his life better so that he can get his diabetes control back on track! He’ll also consider wearing a continuous glucose monitoring device to get alarmed for high sugars in the future.
Diabetes distress

Diabetes distress is very common among people who have diabetes. Taking medication, monitoring blood sugars, watching food intake, and exercising routinely are needed to stay healthy, but all this can feel like stressful work.

Diabetes distress refers to difficult emotions, such as fear, sadness, anger, anxiety, and feeling overwhelmed, that can come with the diagnosis of diabetes. These emotions can get in the way of getting better.

Please take the questionnaire on page 73 “Problem Areas in Diabetes” and speak to your healthcare team about any worries about your mood or behaviors. You may want to consult a Behavioral Health Clinician to help cope with your diabetes. They can help you with lifestyle and stress issues, even when you do not have a diagnosed mental health condition.

Hartford Healthcare has transformed their primary care practices to become Integrated Healthcare Centers which focus on treatment of the whole person, or the importance of the Healthy Mind- Healthy Body connection. If you are experiencing symptoms of low mood, tension or anxiety, please speak with your primary care provider (PCP) and let him/her know how you are feeling. Your PCP may connect you to a clinician where you can have a session in the PCP office or at your home through telehealth sessions.
In the meantime, below are tips you can use without engaging a clinician, to cope in times of stress, anxiety, or self-doubt.

For more serious behavioral health concerns, the Behavioral Health Network provides the full continuum of both mental health and substance abuse recovery services personalized to your needs. The BHN website, https://hhcbehavioralhealth.org/ is a good place to start to understand the programs and services available to you.

- **https://hhcbehavioralhealth.org/about-us/contact-us**
  - You can leave your name, phone number, and email for someone to contact you.

- **Institute of Living Assessment Center: 860.545.7200**
  - Institute of Living (IOL) is one of America’s leading not-for-profit centers for comprehensive patient care, research and education in the fields of behavioral, psychiatric and addiction disorders.

- **Natchaug Hospital 860.456.1311 or 1.800.426.7792**
  - Natchaug Hospital is the key provider of a regional system of care for children, adolescents and adults who are living with mental illness and substance abuse problems.

- **Rushford 1.877.577.3233**
  - At Rushford, the challenges of addiction and mental health issues are met by the passion of specialists who treat every client with care, compassion and respect.

**Healthy ways to cope with stress**

Exercise, social support, and mindfulness practices can all reduce stress while benefiting your overall health. Here are a few examples of mindfulness practices that might help!

**Deep Breathing:**

1. Sit comfortably in a chair and close your eyes.
2. Breathe in through your nose and inhale as fully as possible imagining there is a balloon in your stomach that you are trying to inflate.
3. Exhale very slowly through your mouth.
4. Repeat the deep cleansing breaths 10-20 times.

**Progressive Muscle Relaxation:**

1. Lie down or sit in a comfortable position and close your eyes.
2. Starting at the top of your body, slowly tighten your forehead muscles as much as you can, hold for 10 seconds and then slowly release.
3. Move down your body, tightening and relaxing the different muscles one at a time.
4. Notice how your body feels when the muscles are relaxed.
Imagery:
1. Sit or lie in a comfortable position and close your eyes.
2. Try to imagine a place that is relaxing for you such as a beach or a field.
3. Take a ‘mind walk’ to that place, taking in all the sights, sounds, and scents.
4. Allow yourself 5 minutes to be in this place you love before coming back to reality.

Smoking Cessation
Did you know that people who smoke are 30-40% more likely than non-smokers to develop type 2 diabetes? People with diabetes who smoke have trouble managing their insulin dosing and overall control of their disease than non-smokers. People with diabetes who smoke are at higher risk for complications including neuropathy, issues with vision, trouble with blood flow to legs/feet, and heart and kidney disease. If you smoke, take action today to quit!

You can talk to your diabetes provider about medications for smoking cessation. There is also the CT Quitline which is a free service offering counseling, quitting information, answers to your questions, and support you need while quitting. You can contact them at:

Phone number: 800.784.8669 (800.QUIT.NOW) open 7 days a week, 24 hour/day.
Website: https://www.quitnow.net/CONNECTICUT

Substance use and abuse
For people with diabetes, substance abuse of any form can be life threatening. Alcohol slows down the release of stored glucose from the liver, potentially causing extremely low blood sugar levels. The effect of alcohol in the body for a person with diabetes can remain up to 24 hours, greatly increasing the risk for hypoglycemia. The signs of drinking too much and having a low sugar can also be similar such a slurred speech, falling, and blurry vision. Alcohol use in people with diabetes can also worsen existing nerve damage and its associated pain as alcohol makes the nerves more sensitive to pain. Alcohol can affect the way diabetes medications work in your body. They may not work as well OR once again cause higher risk of low sugars.

Illegal substances (such as cocaine) or opioids can impair your ability to manage your care and medications. Additionally, illegal drugs and opioids can also affect the way diabetes medications work which can lead to hypoglycemia, coma, or even death.

There are many resources within behavioral health at Hartford Healthcare your provider can refer you to for help. There are many resources available to support individuals struggling with substance abuse including the Institute of Living, Natchaug, and Rushford in addition to:

- CT DMHAS Service Access Line: 800.563.4086 (https://portal.ct.gov/DMHAS/Programs-and-Services/Finding-Services/Finding-Services)
  - Call to find out more information about what’s available in your town/city (includes detox, prescription opioids, and heroin addiction treatment)
Financial Assistance Resources

Affording medication can be stressful. In addition to private, federal, and state insurance coverage options, the following resources are available to assist people with diabetes in affording their medications, supplies, and other associated healthcare equipment:

- Partnership for Prescription Assistance – [https://medicineassistance-tool.org](https://medicineassistance-tool.org)
  - Type in your medications, insurance status, and this site will give you phone numbers and websites for company-specific medication assistance programs.

- Needy Meds – [https://www.needymeds.org](https://www.needymeds.org)
  - COVID-19 related resources are available and there is a description of the process for each patient assistance program and the requirements for eligibility.

  - Foundation that helps provide payment for lower limb prosthetics

Transportation

Lack of transportation to appointments may be one reason for not seeking healthcare. Ask your provider if virtual visits are an option. Hartford Healthcare Medical Group offices, both primary care and specialists, offer RideHealth transportation to and from appointments for patients who qualify. Contact your provider directly to inquire and determine whether you qualify. Local and state resources for transportation assistance include:

- Transit Net Mobility Managers – assists in identifying local transportation resources for seniors, veterans and adults with disabilities – [860.361.0514](tel:860-361-0514)
  - [http://www.transitnet.info/mobility-managers](http://www.transitnet.info/mobility-managers)

- Veyo – medical transportation for Medicaid recipients – [855.478.7350](tel:855-478-7350)


- 211/United Way of CT – [https://www.211ct.org](https://www.211ct.org)
  - Ride options include disability-related transportation, medical appointment transportation, senior ride program and local bicycle transportation
  - Also included are local bus and rail information and ride sharing programs
Caregiver Support

The distress of managing diabetes can be just as difficult for the caregiver of a person with diabetes as it is for the individual themselves. It is important that caregivers seek out resources to manage their stress and ensure they maintain their own health. Helpful tips for caregivers of people with diabetes include:

- Set small, measurable goals with your loved one
- Use communication tools to convey your care and compassion for the person with diabetes
- Get assistance from the individuals care team, including their doctors, pharmacist, and case managers
- Seek out friends, family, or support groups whom you can talk to about your feelings

Connections that matter

Need more information than what’s listed so far? The Hartford Healthcare link below lists programs and benefits related to food, goods, housing, work, education, transit/transportation, legal services, money, and health.

- Enter your zip code when you get to the website. Also available in Spanish.

Need a little help?

Find the resources you need quickly and easily

Find Programs | Connect to Services
Apply for Benefits | View Hours and Locations

www.ConnectionsThatMatter.org
Because everyone needs a little help sometimes.
Topic #7: Complications:

Parts of Your Body that Can Be Hurt by Diabetes

It is important to remember that in order to minimize your chances of developing complications from diabetes, you should continue to check your blood sugars and take all your medications as prescribed by your health care provider. Even with good care, you are still at risk to develop some of the complications discussed in this section. It is very important that you continue to see your health care providers regularly to help you manage your unique risk factors.
Heart Health in the Setting of Diabetes

Your heart and blood vessels are affected by the amount of sugar in the body making people with diabetes at higher risk for heart disease, heart attack, stroke, and loss of circulation in the legs.

High blood pressure (hypertension)

Blood pressure (BP) that’s well managed can help protect kidneys, eyes, heart, and vessels from complications. Blood pressure is the force of blood flow in your vessels given in two numbers. If you hear your blood pressure is 120 over 80 then:

120 = systolic blood pressure
80 = diastolic blood pressure

The pressure as your heart beats and pushes blood through blood vessels
The pressure when the vessels relax between heartbeats

According to the American Diabetes Association, 2 out of 3 people with diabetes report having high blood pressure or taking prescription medications to lower their blood pressure. When your blood pressure is not at goal, your heart has to work harder putting you at higher risk for heart disease, stroke, and other problems.

A person’s blood pressure goal must be individualized just like everything else.

- For some the blood pressure goal may be less than 130/80
- For others it may be less than 140/90

We treat high blood pressure with lifestyle (eating healthy, exercise, not smoking, limiting alcohol) as well as medications.

Heart disease and cholesterol

According to 2019 results from the American Heart Association, at least 68% of people age 65 or older with diabetes die from some form of heart disease and 16% die of stroke. Adults with diabetes are two to four times more likely to die from heart disease than adults without diabetes.

Cholesterol

People with diabetes are more likely to have high cholesterol. Cholesterol is a fatty, waxy substance that is made in your liver and also comes from food. It is found in your blood vessels. The blood vessels in our body are like a road and any blockage can be dangerous for our health. See the picture on the left to see the road map of vessels in our body.
Here are some cholesterol names you may have seen or heard:

- **LDL cholesterol or “bad” cholesterol.** This cholesterol can narrow or block your blood vessels. Blocked vessels can lead to a heart attack or a stroke. We like this number as low as possible.
  - In people with heart disease, the goal may be 55-70 mg/dL.
  - In people without heart disease, the goal may be 70-100 mg/dL depending on risk factors.

- **HDL cholesterol or “good” cholesterol:** Helps remove deposits from the insides of your blood vessels and keeps your blood vessels from getting blocked.
  - Goal above 40-50 mg/dL

- **Triglycerides** are another kind of fat found in the blood. High triglycerides raise your risk of a heart attack or stroke.
  - Goal less than 150 mg/dL.

**Defining common heart health terms**

Your provider or health team may use medical words that may be confusing to you. Let’s talk about those new words and how they are important to your health.

**Heart Disease:**

This is a general term that includes many conditions that affect the heart. Sometimes, people are born with heart conditions from certain parts not being formed correctly. Others may have problems with how their heart uses its own electricity and can cause abnormal heart beats. We are talking about coronary artery disease from diabetes.

**Q:** “What can I do to reduce my risk of getting heart disease?”

**A:** Talk to your provider about your plan, but general recommendations include:

1. Maintain a healthy weight as determined by your provider and live an active lifestyle
2. Take any prescribed cholesterol medication.
3. Monitor your blood pressure daily to ensure you are keeping at set goals
4. Stop smoking

*The vessels in the heart help it work. A blockage can kill heart tissue (seen in darker color on bottom of the heart). This is called a heart attack.*
Heart Attack

This occurs when blood flow that brings oxygen to the heart muscle is reduced or stopped. This can be caused by cholesterol in our blood vessels that has built up over time. This makes the blood “highway” narrower as time passes. If the cholesterol buildup, or plaque, breaks open then a blood clot forms. It can stop the blood flow and lead to the death of heart tissue.

Men and women can experience heart attacks in different ways. In addition, people with diabetes of either gender with diabetes can have heart disease without the typical symptom of chest pain. Discuss with your provider any unusual shortness of breath, lightheadedness, or even severe fatigue.
Stroke
A stroke can happen when a blood clot blocks an artery in the brain. This can lead to lack of needed oxygen and blood flow to the brain and can result in permanent damage to the brain itself.

Warning signs of a stroke:
- Sudden numbness or weakness of the face, arm, or leg, especially on one side of the body
- Sudden confusion or trouble speaking or understanding
- Sudden trouble seeing in one or both eyes
- Sudden problems with walking, loss of balance, or coordination
- Sudden, severe headache with no known cause

Warning signs for a Mini-Stroke are the same as the Stroke Warning Signs above. If you experience any of these symptoms, call 9-1-1 for emergent help!

Mini Stroke or TIA
A mini-stroke is when a blood clot blocks an artery for a short time. Unlike a stroke, the blockage is temporary which often results in no permanent injury to the brain. There is no way to tell if symptoms of a stroke will lead to a mini-stroke or a major stroke.

Peripheral arterial disease (PAD)
Just like the heart, the vessels in our legs can get clogged. Many people with PAD don’t have any warning signs and having diabetes can put you at higher risk to have your vessels become clogged. Others may have pain when they walk, a condition called
claudication (CLAW-dih-KAY-shun), weakness, or trouble walking. It's important to understand that the following symptoms of PAD are not just a sign of aging – your body may be telling you it's in trouble.

**Peripheral Arterial Disease (Arteriosclerosis)**

You should contact your provider if you develop the following symptoms:

- Pain in your legs that happens while you walk, but disappears after a few minutes of rest
- Cramps in your legs
- Numbness, tingling, or coldness in your feet or lower part of your legs
- Sores or infection on your feet or legs that heal slowly or not at all
- Dry, cracked skin on your feet

Q: “I've been having some of these symptoms and I've talked to my provider about them and they want to check it out further. How can my provider check if my blood vessels in my legs have a blockage?”

A: Your provider can check your blood vessels in your legs with a specific test called the Ankle-Brachial Index which can show if there is a blockage present and if so, can develop a treatment plan with you.
**Nervous System:**

Peripheral neuropathy is a common side effect of high blood sugars. Peripheral neuropathy is when the nerves that tell us what we feel with our hands and feet become damaged and can change how we feel the world around us.

Q: “I have burning and tingling in my feet every day. Does this mean I have neuropathy and what can I do to stop it?”

A: You should talk with you provider about your symptoms. Neuropathy is often expressed as feeling tingling, numbness, pain, or weakness in one’s hands and feet.

Q: “So my hands and feet may feel different, but is that really a problem?”

A: Yes. While many people may find the sensation changes to be a bothersome symptom, it can cause problems down the line. Decreased feeling or altered feelings in your hands and feet can put you at risk for getting a cut or damage from stepping on something sharp that you may not feel. If you don’t feel it, you may not check it and it can easily become infected. It is important to look at the skin on your hands, feet, and body every single day.

**Skin Concerns Related to Diabetes**

- Higher blood sugars can lead to skin wounds not healing well and makes them more likely to become infected.
- Germs (bacteria) grow faster with higher blood sugars as this feeds them energy.
- High blood sugars can damage veins and can reduce blood flow to parts of your arms and legs, potentially leading to wounds or ulcers in those areas. The reduced blood flow could also lead to the loss of a toe, digit or limb.
- Skin that may be starting with an infection can be hot, swollen, red, and painful. If a wound is present, there may be drainage that can be yellow (pus) or bloody and may smell foul.

**General Skin Care Tips**

- **Keep skin clean and dry** – avoid very hot baths or showers as they can dry out your skin.
- **Avoid heating pads** – you may not feel it is very hot but it can result in burns to your skin.
- **Use a moisturizer daily** to keep skin soft and prevent itchiness.
- **Treat any cuts quickly** – cleanse with soap and water and keep covered. If it becomes infected, notify your provider right away.
Daily foot and skin care guide

People who have neuropathy need to take extra steps to keep their feet safe. If you have pets, avoid letting pets bite or scratch your legs and feet – this can put you at high risk for infection. For many people, a referral is needed for a podiatrist or foot doctor.

Autonomic Nervous System

There are many things our nervous system does without our realizing it – these are things controlled by what we call our autonomic nervous system. Unfortunately, sometimes high blood sugars over time can hurt this system and lead to problems in our bodies. Your digestive system is one place that can be affected by this.

Gastroparesis – This is when the muscles in your stomach no longer work correctly and cannot move your swallowed food out of your stomach and into your intestines at the same speed.

As a result, people may experience:

- Nausea
- Vomiting
- Feeling full or bloated
- Having random low sugars
- High sugars several hours after eating

You can talk with your healthcare provider and dietitian about adjusting your meal plan to reduce your symptoms.
Intestines – Nerve damage can also cause your intestines to slow down or speed up causing constipation or ongoing diarrhea. Some people may experience alternating constipation and/or diarrhea. You should talk with your healthcare provider about ways to safely treat constipation and/or diarrhea.

Kidney Health

Diabetic kidney disease shows up in 40% of patients with diabetes. Your kidneys work to filter your blood and get rid of waste products which results in urine. The kidneys filter your blood through tens of thousands of tiny tubes called nephrons. High blood sugar levels cause your kidneys to become irritated or inflamed which hurts those nephrons. If too many nephrons become damaged, the kidney cannot filter your blood well and you will need to have this done by a dialysis machine.

You can help keep your kidneys healthy by:

■ Talking with your provider about how often your kidney function should be checked.
■ Providers may order the comprehensive metabolic panel and urine microalbumin.
■ Hydration with water urine should be clear or light yellow

Urinary Health

People with high blood sugar levels over a long period of time are at higher risk for developing bladder and urinary tract infections (UTIs). This infection can become out of control and move into your kidney, requiring potential hospitalization for IV antibiotics to treat it.

Q: What are the symptoms of a possible UTI that I should look for?

A: The symptoms to watch for and report to your provider are:
■ Frequent urination
■ Burning sensation when you urinate
■ Cloudy or foul-smelling urine
■ Low back pain
■ Fever and/or chills
■ Mental status changes (confusion or fatigue)
Liver Health with Diabetes

In type 2 diabetes, insulin cannot keep glucose production down correctly. Elevated glucose levels over a long period of time can produce fat deposits in the liver. It also creates fat deposits in other places such as your arteries, organs, and skin. The fat deposits in your liver can lead to scarring or injury of the liver. This can lead to liver failure if left unchecked.

Routine vaccinations

Having diabetes increases risk for serious problems from certain vaccine-preventable diseases. Always get the recommended vaccines to prevent or lessen these diseases. Talk to your provider about your regular maintenance of vaccines, especially for the following:

- **Influenza vaccine** to protect against seasonal flu every year
- **Pneumococcal vaccine** (PCV13, PPSV23) to protect against pneumococcal diseases such as pneumonia and blood stream infections
- **Tdap vaccine** to protect against tetanus, diphtheria, and pertussis – the culprits behind lockjaw, croup, and whooping cough
- **Zoster vaccine** to protect against shingles
- **Hepatitis B vaccine** to protect against hepatitis B virus which attacks the liver
- **COVID vaccine** refer to current ADA guidelines

Diabetes, Eyes, and You

Diabetes affects your eyes and you may not even know it. This is why each year you should see an ophthalmologist or eye doctor. They will see if you have eye conditions such as retinopathy, cataracts, or glaucoma which will be described below. Each year, patients with diabetes should get their eyes dilated which may involve medication placed in the eyes. Some patients may need a ride home or special sunglasses after the procedure as the eyes can be quite sensitive after the eye exam.

**Diabetic Retinopathy**

You may still have “perfect vision” and still have bleeding or weak vessels in your eye that is called retinopathy. This means you have changes in your retina. The retina is a part of the eye that changes light into an image. It is a common cause of blindness in patients with diabetes. If you have retinopathy, your ophthalmologist, or eye doctor, may be able to help you with medication injections or laser surgeries.
Diabetic Retinopathy

This is a picture of an eye that’s normal (left) and an eye with retinopathy (right) shown with aneurysms which are bleeds and weak vessels that form.

**Cataracts**

People with diabetes are more likely to have cataracts, a condition where the lens of the eye gets cloudy. It’s like a dirty windshield on a car because it can be tough to see through it. Make sure to wear sunglasses often. If you have cataracts, your ophthalmologist may talk to you about surgery to replace the lens. It would be like getting a new windshield to see clearer.

The illustration above includes the left eye which is normal and the right eye which is cloudy from a cataract which affects our vision.

**Glaucoma**

People with diabetes have a higher risk of getting a condition where there is a higher pressure in the eye called glaucoma. This higher pressure is dangerous because the pressure stresses out the blood vessels that carry blood to the retina and optic nerve and can cause vision loss. Your ophthalmologist may recommend medications or surgery.
Eye Health Self-Management Recommendations

Eye health is very important to overall health and your ability to manage your health. Preserving your vision allows you to interact with the world around you and ability to read instructions on things like your medications and allows you to see how you are self-managing your health. You should:

- Get your eyes checked by an Ophthalmologist once a year including dilation. You should see this provider sooner if you are having any changes in your vision such as seeing black spots, lines, or flashing light in your field of vision.
- Keep your blood sugars and your blood pressure more often within your doctor recommended target goal range and this will help protect your vision.

Dental Health

Tooth decay and periodontal disease, also known as gum disease, which is from food collecting around the teeth under your gums, can be more serious with diabetes, especially if your blood sugars are high over a long period of time. Your teeth can become loose or infected. Call your dentist if you are experiencing any pain, swelling, or too much bleeding.

I can help take care of my teeth by:

- Brushing my teeth twice a day
- Flossing my teeth every day
- Seeing my dentist every 6 months for cleanings
Sexual Health

High blood sugar over a long period of time can cause damage to nerves and blood vessels which can affect our sexual health. Sexual problems are not always permanent as they may also be caused by hormone changes, stress, or medication changes.

<table>
<thead>
<tr>
<th>Differences between Male and Female</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Male:</strong></td>
</tr>
<tr>
<td>Some males with diabetes may have difficulty maintaining an erection. This is known as erectile dysfunction (ED).</td>
</tr>
<tr>
<td>Causes: Over time, diabetes can cause damage to the vessels and nerves in the penis. There are medications used for blood pressure or depression that may also cause ED.</td>
</tr>
<tr>
<td>Other risk factors for ED include smoking, being overweight, heart disease, depression, and anxiety.</td>
</tr>
<tr>
<td><strong>Female:</strong></td>
</tr>
<tr>
<td>Some females with diabetes may find it difficult to become stimulated or aroused. Diabetes can also affect the release of vaginal lubricant which can cause sex to be painful.</td>
</tr>
<tr>
<td>Some patients may also experience more infections when sugars are higher such as yeast infections or urinary tract infections.</td>
</tr>
</tbody>
</table>

- Yeast infections may be noticed by cottage-cheese like vaginal discharge and genital itching.
- Urinary tract infections may cause patients to have burning with urination or urinary urgency
  - If left untreated, this can lead to an infection in the kidney, causing back pain and fever

If you are experiencing any of these symptoms, issues, or concerns, you should talk with your healthcare provider right away. Your provider may need to complete further assessments and may need to prescribe medication to help treat any underlying infection or use other treatments to help improve your overall sexual health. There may be medications available for both males and females.
Technology seems to change by the month. Below are some examples we may discuss in clinic to make diabetes care easier

- Continuous glucose monitoring
- Insulin bluetooth pens
- Insulin Patches
- Insulin Pumps

**Continuous glucose monitors (CGM):**

Unlike a glucometer that lets us know blood sugars at one point in time, CGMs give us a number as well as blood sugar trends (blood sugar increasing, decreasing, or not changing).

- They are small devices either worn on top of the skin or implanted in the skin.
- Patients typically change their own device every 10-14 days on top of the skin though there is one surgically implanted every 6 months.
- CGMs sample blood sugar levels every 5-15 minutes to detect trends and patterns. Some CGMs alarm if your blood sugars are running too high or low.
- Similar to glucometers, it is a prescription your provider can give you.
- It is optional to share your glucose information with friends and family using certain apps on smartphones.
- CGM reports give patients and providers a summary of blood sugars “in range” which can vary based on age or risk factors.

To learn how to place your CGM you can either go to the company website, read the instruction manual, or as your provider team.

*Below you can see several types of CGMs. Not included is the surgically-placed device.*
Continuous glucose monitoring and ‘time in range’

Don’t be surprised if your blood sugars are variable. The goal is to keep lows (less than 70) and highs (above 180) to a minimum. Now, we also consider “time in range” as a way to see if your diabetes is at goal when people are using CGMs. “Time in range” means time spent with blood sugar goals usually between 70-180 mg/dL while using the continuous glucose monitor. Your report may show a week, couple weeks, or even a month or more of data.

The picture above shows different goals as we get older or have more medical conditions. The focus as we get older is having fewer low sugars even if that means having slightly higher sugars. *Denotes ideal time in range between 70-180 mg/dL shown by green color.
**Insulin Bluetooth Pens**

We now have access to Bluetooth smart pens. These pens connect to an application on the user’s phone that can help determine meal time insulin doses based on your provider’s recommendations. Bluetooth smart pens can be used with or without carbohydrate counting and can keep a record of insulin administration which can be printed for your provider. Sometimes these pens can communicate with your CGM device.

**Insulin patches**

Insulin patches are non-electronic insulin delivery devices; some of these devices provide basal and bolus insulin via a small needle under the skin that is changed once daily (VGo). Some of these patches supply only meal time insulin and are changed every three days (CeQur). Both of these devices use only short-acting insulin and mealtime coverage is administered via clicks (each click is 2 units of insulin).
**Insulin pumps**

An insulin pump is a device placed on top of the skin that copies the role of the pancreas by providing a background (basal) rate of insulin, as well as boluses for food or glucose corrections. A small catheter is inserted under the skin—in the same areas used for injections (such as arm, thigh, and abdomen) to release insulin.

**When would you consider an insulin pump?**

It's important to discuss this with your provider, but some people who may benefit include:

- People not at goal on their current treatment who have tried multiple treatments
- People who are very sensitive to insulin meaning even 1 unit of insulin can lower their sugar over 50 points
- People who cannot feel low sugars (hypoglycemia unawareness) who may or may not already be on a continuous glucose monitor (CGM).
- People who experience morning high sugars.
- People who experience multiple low sugars.
- People who have varied lifestyles where multiple insulin injections are difficult to manage.

The type of insulin pump needs to be individualized. It also requires some patients to learn how to count carbohydrates, attend diabetes education sessions, and attend routine diabetes appointments to change settings.

*At right is an example of an insulin pump with tubing that attaches to the patient. Not all insulin pumps have tubing.*

There are also DIY (do it yourself) closed LOOP systems available; these are not currently FDA-approved but use FDA-approved devices and an open source algorithm to build. DIY (do it yourself) closed LOOP systems must be built, managed, and troubleshooting by the pump user.
What is Gestational Diabetes (GDM)?

During pregnancy, the mother’s uterus makes a special tissue, the placenta, that supports the growth of the baby. Hormones from the placenta can cause high sugars. If left untreated, this can cause very high birth weight in the baby, causing more difficult vaginal delivery or possible C-section, and in the baby, can cause low sugars, difficulty breathing and other complications after birth. Later in life, that baby may have a higher risk of obesity, diabetes, and heart disease.

Around 24 to 28 weeks of pregnancy (or earlier if the mother has a history of GDM), the provider will order a glucose tolerance test, where the mother drinks a sugary drink and has blood glucose tests hourly for several tests.

Risk factors for GDM include family history of diabetes and ethnicity, with higher risk for black, Hispanic, and Asian mothers.

What are the sugar goals in GDM?

- Fasting sugar less than 95 mg/dL
- One hour after eating less than 140 mg/dL
- Two hours after eating less than 120 mg/dL

How is gestational diabetes treated?

*We recommend seeing a dietitian to create a personalized meal plan as lifestyle and diet are the main treatment of gestational diabetes.*

Women with gestational diabetes use lifestyle (walking, staying hydrated with water, healthy eating), insulin, and sometimes pills.

Does gestational diabetes go away?

Women with GDM have a much higher risk of type 2 diabetes later on in life. If it is GDM, the sugar will be normal after delivery, but it is important that mothers get retested for diabetes with either a glucose tolerance test or A1C level 4 to 10 weeks after delivery. Women who have had GDM should share this diagnosis with their primary care providers because of higher risk of type 2 Diabetes later in life.

Diabetes Before Pregnancy (type 2 diabetes or type 1 diabetes)

Patients and their health team should talk about A1C and glucose goals BEFORE pregnancy. This is to make someone as healthy as possible before getting pregnant and to stop any medications that may be dangerous to the developing baby. Once pregnant, women with type 1 and type 2 diabetes aim for an A1c between 6-7%. Fasting and sugars after meals are similar to above goals for women with GDM.
Other recommendations for women with type 1 and type 2 diabetes include:

- Dilated eye exam before 12 weeks
- Aspirin around 12 weeks of pregnancy to prevent the risk of preeclampsia, a dangerous condition for mother and baby. Patients should talk to their obstetrician (OB) about this recommendation.
- Visit with registered dietitian
- Ask provider team if starting a continuous glucose monitor or insulin pump would be recommended.
- Create a sick day plan as it changes in pregnancy. As an example, women who are pregnant with type 1 diabetes will need to check for ketones at a lower blood sugar level.

After delivery, women with diabetes should have family planning discussions at routine appointments. An unplanned pregnancy in the setting of high sugars can cause malformations and other complications in the baby.
Diabetes in Pregnancy: Recognizing and preventing diabetic ketoacidosis (DKA)

DKA is an emergency in pregnancy, below are steps to help you take charge of your health and your baby’s health! It is a leading cause of fetal loss.

What is it?

For women with diabetes, more insulin is needed in pregnancy due to hormones. If the body does not have enough insulin, it can lead to elevated ketones. Ketones are made when the body breaks down fat for energy and can make the body not function well. The build up of ketones or acid can be fatal to the mom and baby.

When does it occur?

- Typically with high sugars BUT can be even with normal sugars
- Dehydration
- ILLNESS (sick or vomiting from morning sickness)
- After receiving steroids (which can increase sugars)
- Fasting/not eating for many hours

How do we check for ketones?

Results can be negative, trace, small, moderate or large amounts of ketones.

We can either use a urine ketostick to check for ketones or a blood sample using a keto machine.

**Urine Ketones**

Call if moderate (red/purple) to large (dark purple) ketones

**Blood Ketones**

- Below 0.6 mmol/L Readings below 0.6 mmol/L are in the normal range
- 0.6 to 1.5 mmol/L Readings between 0.6 and 1.5 mmol/L may indicate the start of a problem that may require medical assistance; for pregnancy call above 1
- Above 1.5 mmol/L Readings above 1.5 mmol/L indicate that you are at risk of developing diabetic ketoacidosis (DKA)

How do we treat it?

It is important to create a sick day plan with our team and your OB team.

Your team will let you know if you need to go to the hospital or manage at home

- Hydrating and taking insulins (even if NOT eating)
- Even if not tolerating foods, the body does need glucose so pedialyte pops/gatorade in addition to insulins, hydrating helps pass the ketones.
- Most patients go to the hospital to get fluids, insulin, and fetal monitoring.

Please make sure you and your endocrine team have a plan for sick days.
Whether we realize it or not, race, culture, and faith can affect our health. While this book goes over general recommendations for health, please talk your diabetes team about the following topics if they relate to you.

**Race and risk of diabetes and risk of diabetic complications**

There are differences in the risk of diabetes for different ethnic groups, as well as differences in the rate of undiagnosed diabetes and risk of complications of diabetes.

- One estimate is that non-Hispanic Whites have a lifetime risk of developing diabetes of 25-30%, for non-Hispanic Blacks 40-50%, for Hispanic/Latinx, 45-52%. Non-White groups have a higher rate of undiagnosed diabetes.
- We can also look to see who has been **ALREADY** diagnosed with diabetes.

<table>
<thead>
<tr>
<th>Percentage diagnosed with diabetes in adults</th>
</tr>
</thead>
<tbody>
<tr>
<td>White, Non Hispanic</td>
</tr>
<tr>
<td>16.00%</td>
</tr>
</tbody>
</table>

*CDC Diabetes Report Card showing data from 2013-2017 highlighting American Indians/Alaskan Natives affected the most by diabetes.*
The African Heritage Diet, like the Mediterranean diet, is a list of healthy foods traditional to African, American, Caribbean and South American groups, using leafy greens, beans, fresh fruits and careful portions of starchy vegetables such as potatoes, yams.

- African Americans with diabetes are more likely to be hospitalized, to have high blood pressure, complications such as amputations and kidney problems, and more likely to die from diabetes than non-Hispanic Whites.
- Asian Americans have a higher rate of diabetes for each weight range (BMI) compared to other races. Screening for diabetes in Asian Americans should start at BMI (body mass index) of 23.
- Native Americans have the highest risk for having diabetes of all US racial groups. They have the highest risk for developing diabetic kidney disease, although this is improving with better medical care.

**Diet and food choices**

- The typical “American” diet has too much fat, carbs, and sugar!

- Diets from some ethnic groups may be healthier but still need to be adjusted due to high carbohydrate intake, such as Asian and Latinx groups that use rice in many meals. Smaller portions of rice and switching to long grain brown rice can lower the carbs.

- Healthy food choices may be difficult in “food deserts,” or areas without access to fruits, vegetables, and whole grains. If possible:
  - Use community gardens to grow food.
  - Find local farmers markets
  - Seek transportation to supermarkets. Ask your provider team if you need assistance.

The African Heritage Diet Pyramid

![African Heritage Diet Pyramid](image)
Religion and holidays

Many religions require or recommend fasting on special days. People who fast may need to adjust their diabetes medications OR skip fasting if it’s dangerous for their health. Check with your provider or be excused from fasting if you have had:

- Severe low blood sugars within the past 3 months
- Poorly controlled type 1 diabetes
- Recent hospitalization for diabetes
- Recent or current illness
- Pregnancy
- Advanced kidney disease
- Older age with poor health

For Ramadan, many Muslims fast during the day and eat at night or before dawn. With diabetes the change in timing of meals may cause both low and high sugars as well as dehydration and risk of diabetic ketoacidosis in type 1 diabetes. It may be necessary to check sugars at night and day and modify the dose or timing of medications.

Language

Not everyone speaks or reads English, and it’s important to tell your health care team what language you speak and read. There are several ways to improve communication during your appointments:

- Request your medical team print out the summary of your health in your native language.
- Medication instructions should be in your native language at the pharmacy. You may need to tell your provider team to communicate this with your pharmacy.
Your provider has the ability to provide clear communication in your native language through the use of interpreters. This access takes just a few minutes to connect in your provider’s office and through in-person interpreters or use of video or phone. Trained interpreters are preferred to family members as they are familiar with medical terms. If you prefer family members to attend appointments, your provider will need your permission to have them interpret for you.

**Traditional cultural approaches to medicine**

Please speak to any members of the care team if you have any doubts or questions about your treatment.

- Many cultures use roots, herbs, teas, or alternative/traditional medications. Please inform your health care team about any traditional medicines or supplements you may be taking because they may interfere with your prescribed medications.
- In some cultures, using insulin may mean a patient is very ill, has failed in some way, or is being punished. Please discuss any negative feelings you may have about your diabetes medications.
- Some ethnic groups may not trust prescription medications or medical doctors or be afraid to ask questions.

Resources available through the Center for Disease Control (CDC)

The CDC has websites for healthy eating for many different ethnic groups.

- Music, podcasts, and training for African Americans at risk of diabetes:

- A list of diabetes materials in many languages including Bengali, Chinese, Chuukese, Gujarati, Hindi, Lorean, Marshalleese, Phonpeian, Samoan, Tagalog, Urdu, Vietnamese, Tongan is available. There are also handouts available for choosing healthy foods for holidays for Chinese, Filipino, Korean, South Asian, and Southeast Asian Americans:

- Link to promote wellness for the community and use a team approach brought by the Indian Health Service The Federal Health Program for American Indians and Alaskan Natives: [https://www.cdc.gov/vitalsigns/aiian-diabetes/index.html](https://www.cdc.gov/vitalsigns/aiian-diabetes/index.html) or [https://www.ihs.gov/sdpi](https://www.ihs.gov/sdpi)
### Problem Areas in Diabetes (PAID) Questionnaire

The total score is added up and multiplied by 1.25. If you score more than 40 points in the below 20 questions, it may be showing an emotional burnout from diabetes. If you circle 3’s and 4’s routinely, then you can discuss this further with your provider team. **For either case, it would be time to tell your provider you would like a referral to a mental health specialist or a diabetes treatment that is simplified.**

**Instructions:** Which of the following diabetes issues are **currently** a problem for you? Tick the box that gives the best answer for you. Please provide an answer for each question.

<table>
<thead>
<tr>
<th></th>
<th>Not a problem</th>
<th>Minor problem</th>
<th>Moderate problem</th>
<th>Somewhat serious problem</th>
<th>Serious problem</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Not having clear and concrete goals for your diabetes care?</td>
<td>☐ 0</td>
<td>☐ 1</td>
<td>☐ 2</td>
<td>☐ 3</td>
</tr>
<tr>
<td>2</td>
<td>Feeling discouraged with your diabetes treatment plan?</td>
<td>☐ 0</td>
<td>☐ 1</td>
<td>☐ 2</td>
<td>☐ 3</td>
</tr>
<tr>
<td>3</td>
<td>Feeling scared when you think about living with diabetes?</td>
<td>☐ 0</td>
<td>☐ 1</td>
<td>☐ 2</td>
<td>☐ 3</td>
</tr>
<tr>
<td>4</td>
<td>Uncomfortable social situations related to your diabetes care (e.g., people telling you what to eat)?</td>
<td>☐ 0</td>
<td>☐ 1</td>
<td>☐ 2</td>
<td>☐ 3</td>
</tr>
<tr>
<td>5</td>
<td>Feelings of deprivation regarding food and meals?</td>
<td>☐ 0</td>
<td>☐ 1</td>
<td>☐ 2</td>
<td>☐ 3</td>
</tr>
<tr>
<td>6</td>
<td>Feeling depressed when you think about living with diabetes?</td>
<td>☐ 0</td>
<td>☐ 1</td>
<td>☐ 2</td>
<td>☐ 3</td>
</tr>
<tr>
<td>7</td>
<td>Not knowing if your mood or feelings are related to your diabetes?</td>
<td>☐ 0</td>
<td>☐ 1</td>
<td>☐ 2</td>
<td>☐ 3</td>
</tr>
<tr>
<td>8</td>
<td>Feeling overwhelmed by your diabetes?</td>
<td>☐ 0</td>
<td>☐ 1</td>
<td>☐ 2</td>
<td>☐ 3</td>
</tr>
<tr>
<td>9</td>
<td>Worrying about low blood glucose reactions?</td>
<td>☐ 0</td>
<td>☐ 1</td>
<td>☐ 2</td>
<td>☐ 3</td>
</tr>
<tr>
<td>10</td>
<td>Feeling angry when you think about living with diabetes?</td>
<td>☐ 0</td>
<td>☐ 1</td>
<td>☐ 2</td>
<td>☐ 3</td>
</tr>
<tr>
<td>11</td>
<td>Feeling constantly concerned about food and eating?</td>
<td>☐ 0</td>
<td>☐ 1</td>
<td>☐ 2</td>
<td>☐ 3</td>
</tr>
<tr>
<td>12</td>
<td>Worrying about the future and the possibility of serious complications?</td>
<td>☐ 0</td>
<td>☐ 1</td>
<td>☐ 2</td>
<td>☐ 3</td>
</tr>
<tr>
<td>13</td>
<td>Feelings of guilt or anxiety when you get off track with your diabetes management?</td>
<td>☐ 0</td>
<td>☐ 1</td>
<td>☐ 2</td>
<td>☐ 3</td>
</tr>
<tr>
<td>14</td>
<td>Not ‘accepting’ your diabetes?</td>
<td>☐ 0</td>
<td>☐ 1</td>
<td>☐ 2</td>
<td>☐ 3</td>
</tr>
<tr>
<td>15</td>
<td>Feeling unsatisfied with your diabetes physician?</td>
<td>☐ 0</td>
<td>☐ 1</td>
<td>☐ 2</td>
<td>☐ 3</td>
</tr>
<tr>
<td>16</td>
<td>Feeling that diabetes is taking up too much of your mental and physical energy every day?</td>
<td>☐ 0</td>
<td>☐ 1</td>
<td>☐ 2</td>
<td>☐ 3</td>
</tr>
<tr>
<td>17</td>
<td>Feeling alone with your diabetes?</td>
<td>☐ 0</td>
<td>☐ 1</td>
<td>☐ 2</td>
<td>☐ 3</td>
</tr>
<tr>
<td>18</td>
<td>Feeling that your friends and family are not supportive of your diabetes management efforts?</td>
<td>☐ 0</td>
<td>☐ 1</td>
<td>☐ 2</td>
<td>☐ 3</td>
</tr>
<tr>
<td>19</td>
<td>Coping with complications of diabetes?</td>
<td>☐ 0</td>
<td>☐ 1</td>
<td>☐ 2</td>
<td>☐ 3</td>
</tr>
<tr>
<td>20</td>
<td>Feeling ‘burned out’ by the constant effort needed to manage diabetes?</td>
<td>☐ 0</td>
<td>☐ 1</td>
<td>☐ 2</td>
<td>☐ 3</td>
</tr>
</tbody>
</table>

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Glucagon administration

Glucagon is an emergency hormone for severe low sugars. It is a prescription that has some newer ways of administration though formerly injection only. It is now available as an injection or a nasal spray. It does not need to be refrigerated.

Keep in mind glucagon may cause nausea and vomiting. The patient should be laid on his or her side if unconscious.

If conscious, patients will need to treat their low sugar IMMEDIATELY using the 15-5 Rule (see page 11 in Topic #1).

Please see the product insert for clarity. Also, each product is ONE USE ONLY. Throw it away after used.

NOTE: You may need to call 9-1-1 if the patient lost consciousness or had a seizure.

Traditional Glucagon (vial and syringe)  Premixed Glucagon (syringe and hypopen)  Nasal Glucagon

How to inject nasal glucagon

START HERE:

1. Hold device between fingers and thumb. DO NOT push plunger yet.

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

3. Push plunger all the way in, it's complete when the green line disappears.
1. Open the foil pouch and pull the cap off the syringe OR hypo pen

NOTE: You may need to call 9-1-1 if the patient lost consciousness or had a seizure.

START HERE:

1. Remove seal from vial of powder. Remove needle cover from syringe.

2. Inject the water into the vial of powder.

3. Swirl the vial to mix until the liquid is clear.

5. Inject glucagon solution into the outer mid-thigh or arm muscle.

6. Turn the person on his or her side as a side effect of glucagon can be vomiting.

NOTE: You may need to call 9-1-1 if the patient lost consciousness or had a seizure.

How to inject traditional glucagon

How to inject premixed glucagon

- If syringe, pinch the skin of the upper arm, lower stomach, or outer thigh and insert the needle at a 90 degree angle. If syringe, push plunger down as far as it can go.
- If hypopen, inject into the skin at a 90 degree angle and hold for 5 seconds after you hear a “click”.

START HERE:

1. Open the foil pouch and pull the cap off the syringe OR hypo pen
Diabetes Preparedness Emergency Plan
Taking care of your diabetes can be even harder when you are dealing with a major storm, loss of electricity and possible evacuation from your home. Use this checklist to build a “diabetes kit” which can save you a lot of worry and time if an emergency strikes.

Your diabetes kit can be stored in an easy-to-carry waterproof bag or container to hold the documents, information, and supplies that you will want to have with you.

Important Information to Keep in Your Kit-
Write down or copy the following:

- Type of diabetes you have
- Other medical conditions, allergies, and previous surgeries
- Current medications, doses and time you take them. Include your pharmacy name, address and phone number
- Previous diabetes medications you have taken
- A letter from your diabetes care team with a list of your most recent diabetes medications, if possible.
- A copy of your most recent laboratory result, like A1C results
- Make, model and serial number of your insulin pump or CGM. Include pump manufacturer’s phone number in case you need to replace your device.
- Doctor’s name, phone number and address
- Phone numbers and emails for your family, friends, and work. Include out-of-town contacts.
- A copy of your health insurance card
- A copy of your photo ID
- Cash
**Diabetes Supplies**

- Additional week supply (or more) of all medications, including insulin and Glucagon, if prescribed.
- Protect your insulin pump from water.
- Supplies to check your blood sugar, like testing strips and lancets. Don’t forget extra batteries!
- Extra supplies for insulin pump or CGM
- Cooler and reusable cold packs
  - Note: Do NOT use dry ice and do not freeze the medication
- Empty plastic bottle or sharps container to safely carry syringes, needles and lancets
- Items to treat high blood sugar such as pump supplies (infusion sets) and/or syringes
- Items to treat low blood sugar (hypoglycemia), like:
  - Juice
  - Regular Soda
  - Honey
  - Hard Candy (not sugar free)
  - Glucose tablets
  - Glucagon

**If you lose power and you have unused insulin, don’t throw it out! In an emergency, it is okay to use expired or non-refrigerated insulin.**

**Other Supplies to Pack**

- 2-day supply of non-perishable ready-to-go food, like
  - Pre-packaged tuna, beans, cheese and crackers etc.
  - Nuts or not butters
  - High-fiber/protein granola bars
  - Dried fruits
  - Anything according to dietary restrictions
  - A 3-day supply of bottled water (or more)
- Pen/pencil and notepad to record blood sugar, other test results and any new signs/symptoms
- First aid supplies like bandages, cotton swabs, and antibiotic ointments or creams
- Extra clothing, including socks and undergarments
- Cell phone and charging supplies for phone and pump including battery pack
- Flashlight and batteries
My Diabetes Support Plan

Diabetes education is an important part of your management plan. However, most people with diabetes do better if they continue to receive ongoing support and education as they go through life. Here are some ideas on how to keep focused on your management plan.

Engage the services of a Case Manager

■ **Hartford Healthcare’s Integrated Care Partners** is a team of nurses and social workers focused on helping patients manage chronic conditions and meet specific health goals. Talk to your Hartford Healthcare primary care provider (PCP) to be referred to a Community Care Manager.

■ Case management is a service offered by some **Medicare Advantage, commercial, and Medicaid insurance plans**. Check with your insurer about the benefits and services they offer by calling the number on the back of your insurance card.

Access support for behavioral health

■ **HHC Primary Care Behavioral Health Clinician**—Ask your PCP to connect you

■ **HHC Behavioral Health Network**—Ask your PCP or primary care behavioral health clinician

■ **Private clinicians in your community**—Ask your PCP or primary care behavioral health clinician for a list of providers in your community who can prescribe medications or provide counseling services to help support you

■ **APPS**—The U.S. Veterans Administration developed several apps designed to support behavioral health goals, go to https://mobile.va.gov/appstore/mental-health

Develop a plan for weight management

■ Seek a referral to a registered dietitian (RD)

■ Understand medical weight loss options

■ Join Weight Watchers

■ Start a membership on the Noom APP

■ Pursue membership in a local gym, YMCA, Silver Sneakers

■ LoseIt! APP

■ FitBit

Stop smoking

■ **Medications for smoking cessation**—talk to your provider

■ **Call the CT Quitline at 800.784.8669 (800.QUIT.NOW) open 7 days a week, 24 hour/day or access their website at** [https://www.quitnow.net/connecticut](https://www.quitnow.net/connecticut)
Other Recommendations

- Make sure that all your vaccinations are up-to-date
- Choose a meeting place with your family in case you are separated. Write down location and include in your kit
- Wear a medical ID or medical alert bracelet or other form of identification in case you are evacuated to a relief shelter
- For children, write down name of school, address and phone number

Source: Adapted from American Association of Clinical Endocrinologists (AACE) - My Diabetes Emergency Plan

For additional emergency preparation resources for people with diabetes or a checklist version of this information, visit http://mydiabetesemergencyplan.com
Know what financial support is available to you
■ State of CT Benefits Check-up: https://www.connect.ct.gov/access/jsp/access/Home.jsp
■ Medicare Savings Program: https://www.connect.ct.gov/access/jsp/access/Home.jsp
■ ACCESS Health CT: https://www.accesshealthct.com/
■ Center for Healthy Aging, CHOICES counselor, Area Agency on Aging

Utilize available community resources
■ Transportation resources
■ Farmer’s markets
■ Local food pantries
■ Your spiritual or religious community
■ Nutrition assistance provided by a local grocery store
■ Meal delivery services
■ Your local Community Action Agency: https://www.cafca.org/agencies/

Use the Internet and/or mobile phone apps to help structure your diabetes self-management plan
www.diabetes.org
www.cdc.gov/diabetes
www.diabetesselfmanagement.com
www.safeneedledisposal.org
www.beyondtype1.org
www.diabetesdaily.com
www.diabetessisters.org
www.diabeteswhattoknow.com
www.estudiabetes.org
www.tudiabetes.org

APPS
Calorie King
Go Meals
Calm
Mindfulness Coach
Glucose Buddy
Glooko
Headspace
PTSD Coach
MyFitnessPal
Fooducate
COVID Coach
Insomnia Coach
Goal Setting

Before you go on a road trip, you make a plan. Once you decide on your destination, you set a course and then follow the steps to get there.

Managing your diabetes is much the same idea. You decide your destination (goal) and then you set about making changes (steps to achieve your goal) that will help you get there.

Start by deciding what you want to change and why it is important to you. Using a tool like the SMART goal setting tool, helps tell you what your plan is, how to do it and for how long.

Here are some examples of SMART goals:

✓ "Starting Monday, I will substitute fresh fruit for junk food for my afternoon snack at least 3 days/week"

✓ "Starting today, I will walk 3 days a week for 10 minutes each day"

✓ "Starting next Monday, I will check my blood sugar before breakfast at least 4 days each week"

Use this list of ideas to help you get started. Select the one area that you would like to tackle first and fill in this statement with your SMART goal:

<table>
<thead>
<tr>
<th>Healthy Eating</th>
<th>Being Active</th>
<th>Monitoring</th>
</tr>
</thead>
</table>
| • Make better food choices  
  • Reduce my portion sizes  
  • Follow my meal plan | • Exercise longer  
  • Exercise more often  
  • Follow exercise plan | • Follow monitoring schedule  
  • Monitor more often |

<table>
<thead>
<tr>
<th>Medications</th>
<th>Healthy Coping</th>
<th>Problem Solving</th>
</tr>
</thead>
</table>
| • Take all medications as prescribed  
  • Increase taking medications on time  
  • Miss fewer medication doses | • Seek help to cope with diagnosis of diabetes  
  • Get support from family and friends | • Carry glucose to prevent low blood sugar  
  • Schedule my annual eye exam  
  • Check my feet daily |

To better care for myself and my diabetes, I will: ________________________________
Frequently asked questions

No one chooses to have diabetes. But you can choose how to manage it. You will make choices and decisions daily that will affect how you feel each day and your long term health. These choices often involve food, activity, monitoring glucose levels and taking medication. At times, it may seem frustrating, overwhelming, and just unfair. But always remember that everyone wants you to succeed.

■ Is diabetes curable?
  • There is no current cure for diabetes. There are lifestyle changes and medications available to manage the disease.

■ Will I die from diabetes?
  • Diabetes can cause multiple health complications including stroke, kidney failure, heart attack and heart failure. The purpose of helping to manage your diabetes well is to prevent these and to live a longer healthier life.

■ Do all people with diabetes have to take insulin?
  • People with type 1 diabetes always need to take insulin because their pancreas does not make it.
  • Not all people with type 2 diabetes will need to take insulin. However, people may eventually need to take insulin or other medications given by injection if their glucose is not at goal. Remember your treatment is specific to YOUR needs.

■ How much will my medication cost?
  • This depends on your health insurance plan. There are multiple available generic diabetes medications in the market that you can ask your provider about and also go to the company websites. If you have questions regarding specific medications, contact your insurance plan or provider team (care managers, pharmacists). If you are switching insurances, you can ask your insurance broker (for example, patients who are new to Medicare) for the best insurance plan to minimize out of pocket costs.

■ Why do I have to take medications when I feel fine?
  • Some people do not feel signs of hyperglycemia, or high blood sugar. It is important to take your medications as prescribed to manage the disease and prevent complications.

<table>
<thead>
<tr>
<th>4mm</th>
<th>6mm</th>
<th>8mm</th>
<th>12mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>32G</td>
<td>31G</td>
<td>31G</td>
<td>29G</td>
</tr>
<tr>
<td>(5/32&quot;)</td>
<td>(1/4&quot;)</td>
<td>(5/16&quot;)</td>
<td>(1/2&quot;)</td>
</tr>
</tbody>
</table>
Why can’t I just diet and exercise?
- Diet and exercise alone are usually not effective enough to reach your A1C goal once you are diagnosed with diabetes. Over time, your body becomes more resistant to the insulin it produces. There are many ways medications can help, such as increasing the amount of insulin your body produces or making your body more sensitive to its own insulin.

What if I am afraid of needles?
- You are not alone, many people fear using needles. If you are afraid, let your provider know. There are different needle options including ultra-fine needles and insulin pens, which are less painful. There are devices that can hide the needle.
- Other tips include:
  - Numbing your injection site with ice
  - Getting into a comfortable position and taking deep breaths prior to injection
  - Practicing with your healthcare provider or diabetes team

How do I travel with my insulin and diabetes supplies?
- Make sure any insulins, insulin pumps, or medications are in the carry-on baggage. DO NOT place insulin or insulin pumps in checked luggage as it may get lost, handled roughly, or exposed to different pressures and temperatures making your insulin not work. Insulin must be clearly labeled.

Where can I learn more about diabetes?
- There are diabetes education classes offered at Hartford Healthcare (see page 81) Some websites, family, or friends may be trying to help but have incorrect information. Please use the links below for up-to-date information.
  - American Diabetes Association: www.diabetes.org
  - Centers for Disease Control and Prevention: www.cdc.gov/diabetes
  - Diabetes Self-Management: www.diabetesselfmanagement.com
  - Juvenile Diabetes Research Foundation: www.jdrf.org

Are there cell phone apps that can help to manage my diabetes?
There are many apps available, some include:
- Glucose Buddy
- mySugr
- Glooko
- CalorieKing Food Search
- Fooducate
- My FitnessPal
### 2 Week Blood Glucose Log

<table>
<thead>
<tr>
<th>DATE</th>
<th>BREAKFAST</th>
<th>LUNCH</th>
<th>SUPPER</th>
<th>BED-TIME</th>
<th>COMMENTS</th>
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<tbody>
<tr>
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Carbohydrate Tracking Food & Activity Record

**Directions**
1. Record the time of the meal or snack and your blood glucose (BG) level.
2. Write down everything you eat and drink, including portion sizes (see sample).
3. Total the number of carbohydrate choices for each meal and snack and write it in the small box.
4. Record activity for day & include time.

### Activity Key
- **A** = Aerobic
- **W** = Walking
- **S** = Stretching
- **L** = Light weights
- **O** = Outdoor (golf, gardening, hike, dance)

Specify time spent

<table>
<thead>
<tr>
<th>Date</th>
<th>Breakfast Food/Amount</th>
<th>Snack Food/Amount</th>
<th>Lunch Food/Amount</th>
<th>Snack Food/Amount</th>
<th>Dinner Food/Amount</th>
<th>Snack Food/Amount</th>
<th>Comments/Activity</th>
</tr>
</thead>
<tbody>
<tr>
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<td>Time: FBG:</td>
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</table>
Medication List

Patient Name: ___________________________ Date Created ______________

Medication Allergies & Reaction:

Current Medications:

<table>
<thead>
<tr>
<th>Medication Name</th>
<th>DOSE</th>
<th>When I take it</th>
<th>What is this Medication for?</th>
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</thead>
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Diabetes Medications I have tried in the past:

<table>
<thead>
<tr>
<th>Stop Date</th>
<th>Medication Name</th>
<th>DOSE</th>
<th>Why i don't take it anymore</th>
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This booklet is an expansion and update of Diabetes Survival Skills: 
Your Guide to Diabetes Self-Care by Beata Kubacka, MSN, RN, AGPCNP-BC, RD, CDCES

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In Memory of Liz Sibicky:
This book is dedicated to Elizabeth “Liz” Sibicky who cared for her patients over her 40-year career in various roles as a labor and delivery nurse, nurse educator, diabetes educator, and most recently as a nurse practitioner in endocrinology at The William W. Backus Hospital.

Know Your Numbers

Keep in mind YOUR goals may be different. You can change any information below to fit YOUR goals.

At every provider appointment, ask about:

■ Blood pressure (Goal around 130/80) and Weight
■ Foot Exam
■ Review your self-monitored blood sugar records
■ Review your medications
■ Review your exercise, diet, and sick day plan

Annually

■ Eye Exam
■ Flu Shot
■ Cholesterol blood test, kidney (blood and urine tests)

Vaccines

■ Pneumonia Shot

Don’t forget your A-B-Cs!

A: A1C* <7%
Fasting sugar 80-130
2 hours after meals less than 180

B: Blood pressure <130/80

C: Cholesterol
Total cholesterol: Less than 200
LDL (Bad) cholesterol: Less than 100 or less than 55-70 if with heart disease
HDL above 40-50
Triglycerides Less than 150

*Remember your A1C number may be different, talk to your provider team for YOUR number!
Please call for more information on diabetes outpatient education* classes:

Backus Center for Endocrinology, Diabetes and Metabolism
Backus Outpatient Care Center*
111 Salem Turnpike
Norwich, CT 06360
860.892.6906

Hartford Hospital Diabetes LifeCare
Diabetes LifeCare*
85 Seymour Street
Suite 725
Hartford, CT 06106
860.972.3526

The Hospital of Central Connecticut
Diabetes Center*
New Britain General Campus
100 Grand Street,
New Britain, CT 06052
860.224.5655

MidState Medical Center Diabetes
and Nutrition Center*
61 Pomeroy Ave
Meriden, CT 06450
203.694.5425

Windham Hospital Diabetes Care*
Windham Hospital
112 Mansfield Avenue
Willimantic, CT 06226
860.456.6727

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780 Litchfield Street
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203.696.2240

Hartford HealthCare Medical Group
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Southington, CT 06489
203.696.2240

Hartford HealthCare Medical Group
South Windsor*
1559 Sullivan Avenue
South Windsor, CT 06074
203.696.2240

Center for Healthy Aging
(Several Locations)
860.224.5655

*The American Diabetes Association Recognizes this education service as meeting the National Standards for Diabetes Self-Management Education and Support.