

THE COLLEGE DIABETES NETWORK PRESENTS:

YOU'VE GOT THIS!

A GUIDE FOR NEWLY DIAGNOSED YOUNG ADULTS WITH TYPE 1 DIABETES



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A LETTER FROM ME TO YOU

So you've just been diagnosed with type 1 diabetes (T1D), and you're a young adult? Well, let me start by saying that whatever you are feeling right now is valid—anger, confusion, anxiety, disappointment, or just totally fine. You also may be feeling many different emotions, and that is normal and okay. I felt a little bit of it all when I was in your shoes a few years ago, and I still experience those emotions sometimes. Take some time to process how you are feeling and what you are thinking—whether that means talking to a friend or family member, binge-watching that new Netflix series, going to the gym, or talking to a mental health counselor.

The most important thing I can tell you is this: **You are not alone.**

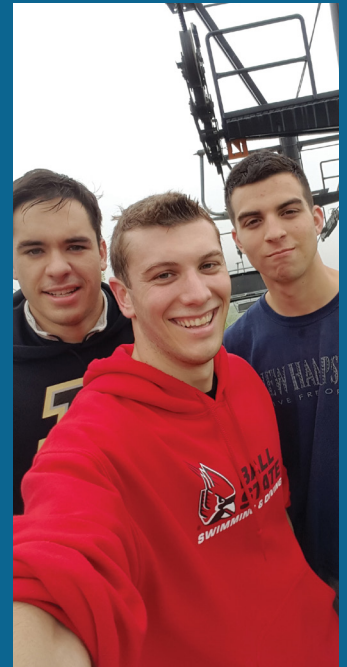
Let me say that again: **You are not alone.** Many other people (*myself included!*) have experienced what you are currently going through at the same age and stage in life, with similar emotions, questions, and thoughts that might be running through your head. At the same time, you and your diagnosis story are unique and important. And if you'd like to share it, I would genuinely like to hear it.

As you may have already realized, diabetes sucks the vast majority of the time. It is a complicated and crazy thing. It will, if it hasn't already, open a whole new chapter in your life. Living with diabetes, especially as a young adult, is tough. It takes some extra work, some extra math, and some extra care of your body and mind to manage it. But you can absolutely thrive with diabetes. This new chapter with diabetes can actually be positive in many ways. Diabetes is not a death sentence, nor is it a sentence to a bunch of crazy complications that you may hear about. Medical understanding and treatment for diabetes has significantly progressed in the past few decades. But diabetes can be a roller coaster. At times you're high and sometimes you're low—literally, your blood sugar will be high and low, sometimes within the same hour, and that can be incredibly frustrating. Some days you might be totally okay with your diabetes, and other days you might hate it.

Diabetes, like other things in life, can be scary and overwhelming at times, but with the help of family, friends, and plenty of insulin and low blood sugar snacks, you will have everything you need to live a full and healthy life. I truly hope that this guide will answer many of your questions, and help you learn how to manage diabetes well while pursuing your dreams for your life!



Take good care,
Katelyn



WHAT IS THIS THING ANYWAY?

Recently, the number of young adults, who for our purposes are defined as individuals between the ages of 17 and 25, being diagnosed with type 1 diabetes (T1D) has significantly increased. Many times people think that diabetes only affects children or older adults. The truth is, while a lot of people are diagnosed with T1D as children, people can be diagnosed at any age (*whether they are 20, 30, 40, 50, or even older!*). When you tell someone you have diabetes and you're a healthy, kicking 20-something-year-old, they'll probably look at you a little funny because they may not know the difference between type 1 and type 2 diabetes. This can be incredibly frustrating, and we'll give you a few tips later on in this guide for how you can address this issue. But like we said, the number of young adult diagnoses is increasing, and we have discovered a great need for resources to support and educate people diagnosed at this age.

Our primary purpose in creating this guide is to provide you with a starting point for feeling supported and empowered in this new chapter of your life with diabetes. Our aim is to share many tips and pieces of advice with you through this guide from a personal point of view. Although it may not answer every question you will have, our goal is to answer many of them, calm your fears, and help you confidently adjust to life with diabetes.

All of the advice, stories, tips and tricks shared in this guide come from others who have been in your shoes—people diagnosed as young adults, trying to figure this thing out. In no way should you take this advice as hard and fast, but you can use it as a starting point to build your own goals, dreams, and plans.

Use the table of contents, which outlines every topic covered in here, to find advice on certain topics quickly or peruse through the entire guide at your own pace. Come back to it if you have more questions about other topics, and use what you learn to help educate others—whether or not they live with diabetes themselves.



ABOUT THE COLLEGE DIABETES NETWORK (CDN)

What is CDN?

The College Diabetes Network is the only organization focused exclusively on helping teens and young adults with T1D transition to independence—facilitating peer camaraderie and programs and providing life-changing information—giving young adults the confidence to take ownership of their health to live a full life without compromise.

CDN is the hub of information and resources for all things college and diabetes.

Questions on:

- CDN Campus Chapters?
- Connecting with other young adults T1Ds?
- Career opportunities?
- Touchy topics?
- CGMs?
- Scholarships?
- Talking to professors about diabetes?
- Health insurance?

Check. We've got it all—and more. Get excited.

About CDN Chapters

Chapters are student-led groups that allow students living with diabetes to connect with one another, learn about the latest diabetes technology and gadgets, and exchange tips and tricks for managing diabetes on campus.

How to Get Involved in a CDN Chapter

1 Visit our website: collegediabetesnetwork.org/chapters

2 Join or start a Chapter

- Search for a Chapter on our website.
- Contact CDN staff at:
chapters@collegediabetesnetwork.org

Why Get Involved in a Chapter?

- Connect with other students who get it
- Have a friend to call
- Learn about local resources
- Gain leadership experience
- Participate in community service projects
- Be a part of a national community
- Inspire others!

SIGN UP FOR CDN'S FREE STUDENT MEMBERSHIP

- You don't need to be a member of a CDN Chapter to take advantage of our [free student membership!](#)
- Student members receive benefits, promotions, and giveaways from our partnering organizations and corporate members, and exclusive access to internship and job openings.
- Get notifications about clinical trials and patient advisory committees looking for participants like you.
- Get alerts on new developments in the diabetes community that may affect you and updates from other CDN students across the country.



THANK YOU TO OUR SPONSORS



We would also like to extend our thanks
to our contributing partners:



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Thank you to the T1D young adults who were instrumental in the development of this resource!

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**LET'S GET DOWN
TO BASICS**

Type 1 diabetes can be a complicated and confusing disease, so let's make sure we cover the basics. This section will introduce you to the many pillars of diabetes management, including blood glucose checking, insulin dosing, nutrition, and exercise.

BLOOD GLUCOSE CHECKING

First things first: From here on out we'll refer to blood glucose as blood sugar. You probably know that glucose means sugar (*if you didn't already, you do now!*). You also should know that everyone calls their blood sugar something a little different—just 'sugar,' just 'blood,' etc.—and you'll probably develop your own diabetes lingo, too.

Pricking your finger, drawing a bit of blood, putting it onto the strip, and seeing that number pop up on the screen—this is what blood sugar checks are made of. These checks are essential to diabetes management. They only take a few seconds to do, and you probably already feel like you could do it with your eyes closed. As a note, if you don't feel confident checking your blood sugar just yet, or you want to make sure you are doing it properly, check out the tips on the next page! You also can reference the manual that comes with your blood glucose meter, or the company's website, for instructions specific to your meter.



CDN TIP

- ✓ **A Continuous Glucose Monitor (CGM) can drastically reduce the number of finger pricks you need to do in a day! Check out the CGM section in this guide for more information.**

Before you were diagnosed, you probably only had your finger pricked a few times in your life (*if ever*), and now you are pricking it many times a day. If you are feeling frustrated, overwhelmed, isolated, or even in some pain, you are not alone. It can be an annoying extra task to do during your day, and it may just straight up not feel good.

Doctors say you should check your blood sugar about seven times per day, but they know this isn't always practical (*Abma, 2015*). Four or five checks a day may be a good number to aim for. In reality, there may be some days when you only check your blood sugar three times, and other days you may check ten times (*especially when you're sick*). Each day and each person's management styles are a little different, and that is okay because your diabetes is not the same as anyone else's.

Talk to your doctor about how many times they suggest you check, but remember that you may only be able to get a specified number of test strips per month based on your insurance company's limitations. You might find yourself being told by your doctor to check 7 times a day, but your insurance only covers four test strips per day. This obviously makes no sense—you're not the only one angry about this. If your doctor wants you to check more times than your insurance company will provide for, usually your doctor can write a note to your insurance describing your medical need for more strips. If you haven't quite gotten used to checking

frequently yet, at the very least try to check in the morning and before bed, as well as when you feel low and need to treat with a low snack or you feel high and need to correct with an insulin dose. These are particularly important points of the day to check.

But why is checking your blood sugar so important? Physically, the pain of the prick can hurt, and emotionally you may not be happy with the results. The number you get on the screen when you check isn't always what you want it to be, and that can be discouraging—especially after feeling like you've worked so hard to get it in range. After certain days or events, your blood sugar may be completely unpredictable, and it can even be a little scary to check. Always remember that your blood sugar does not define you, but you should check it. You are not your blood sugars, and your blood sugars are not you—no matter what your friends, family, or doctor may express. Yes, numbers can be reflective of how your diabetes is managed, but they can also be out of your control sometimes. Even if you did everything perfectly, so many things affect your blood sugar that it really is nearly impossible for your numbers to always be in range (*American Diabetes Association, 2015a*).

Instead of living in fear of your blood sugar, or becoming discouraged after checking and not getting the number you hoped for, try to start looking at your numbers simply as information—information about how your body is feeling, and how hard it is working, not how well you are managing your diabetes. Instead of spending time dwelling on the numbers you don't like, learn from them. Knowledge is power—power to change! Think about any factors that might have affected that number (*many are listed below*). Do you think you were off on your carb counting? Go back and consider how many carbs were in what you ate, and keep a note of that for when you want to eat it again. Keeping your blood sugar in range is vital to keeping your body the healthiest it can be—now and later. When your blood sugar is in range, you will naturally feel better in the present, but it will also keep your entire body functioning better, and therefore preventing further complications later in life.



CDN TIP

- ✓ **What does a low blood sugar feel like? A low blood sugar can cause you to experience sweating, shaking, headaches, blurred vision, dizziness, poor coordination, anxiety or irritability, increased hunger, nausea, difficulty concentrating, sudden changes in behavior, and other symptoms. Remember, you can have a low blood sugar and be asymptomatic (*not feel any of these symptoms*) so always check!**



CDN TIP

- ✓ **What does a high blood sugar feel like? A high blood sugar can cause you to experience extreme thirst, frequent urination, blurred vision, fatigue, stomach pain/nausea, increased hunger, difficulty concentrating, sweating, irritability, drowsiness, and other symptoms. Remember, you can have a high blood sugar and be asymptomatic (not feel any of these symptoms) so always check!**

Your doctor should give you all of the details about how many times you should check, when, what range your blood sugar should be within, and what you should do if it isn't in range. If your doctor isn't giving you that information, ask him or her to do so, or seek out a new doctor who is equipped to provide that information. If you have a CGM, you also should talk to your doctor about how many times they suggest that you check each day, as it may be different for you.

Beyond Type 1 has a handy step-by-step guide for how to properly test blood sugar.

- 1 Wash your hands.
- 2 Clean fingertip with alcohol wipe.
Be sure that it is VERY dry.
- 3 Set the needle to 2 or 3 to start by turning the dial of the pricker to match up with the white line.
- 4 Insert a glucose meter strip into the meter. Put the black and white end of the strip into the meter. Do not touch the white/yellow tip. *(This action will "wake" the meter and in a moment you will see a prompt on the screen with a drop of blood. This indicates it's ready to go.)*
- 5 Cock the needle by pushing on the end of the pricker *(like a pen)*.
- 6 For best results, squeeze finger below the prick area to make the tip swollen with blood.
- 7 Prick finger by pushing the pricker against clean fingertip and then pushing the button.
- 8 Squeeze up a bead of blood. It needs to be a proper drop—if the blood gets watery or runs down the finger, the reading may be inaccurate *(showing a lower than true number)*.
- 9 Touch the white/yellow tip of the strip to the bead of blood and wait until the meter beeps, indicating the blood is read.
- 10 Lightly dab the blood with a paper towel—the hole closes almost instantly.

Source: <https://beyondtype1.org/how-to-test-blood-sugar/>

As we have mentioned before, there are so many seemingly insignificant things that can factor into your blood sugar, some of which you can control, and some of which you cannot. Some things that can impact your blood sugar include *(Brown, 2014; Gelman, n.d.)*:

- Hormone levels
- Menstrual cycles—many women note that their blood sugar levels increase before their menstrual cycle begins, and then lower once it ends. *(Diabetes Connect, n.d.)*
- Weather
- Stress
- Macronutrients *(carbohydrates especially! But fat and protein can affect blood sugar too)*
- Time of eating *(fluctuations from day to day)*
- Exercise
- Sickness/injury
- Caffeine
- Sleep
- Medications
- Drugs/alcohol/smoking
- Insulin pump issues *(occlusion, air bubbles, scar tissue, etc.)*
- Dehydration
- Expired or bad insulin
- Altitude
- Traveling



CDN TIP

- ✓ **If you ever check your blood sugar and it's not what you expected, or just doesn't seem right, check again and follow these steps. Wash your hands well, and then after pricking your finger, wipe off the first drop of blood and use the second drop. This can help get a more accurate result.**

If you have a bad day, or even week or month, don't blame yourself. Work with your doctor and your support system, which can include your parents, friends, significant other, classmates, mental health professional, and many others, to continue adjusting the way you manage your diabetes to see what works and what doesn't. Remember that diabetes can be a roller coaster, so hold on for the ride! Don't let other people's comments or reactions get to you. When you check your blood sugar, especially in public, you may find people *(even well-meaning friends and family)* who choose to comment on your number. Remember that these can be moments to educate, where you can explain to the individual what that number means. You also have every right to ask people not to comment on your numbers. Over time you'll decide how you want to approach this situation. Do what works best for you in the specific circumstance you are in, and keep on doing your thing.



Your doctor may have talked about severe hypoglycemia (*very low blood sugar*) with you when you were diagnosed, but if not, there is some important information you need to know about. The American Diabetes Association provides excellent information about severe hypoglycemia and what to do in the event that you experience this.

GLUCAGON

If left untreated, hypoglycemia may lead to a seizure or unconsciousness (*passing out, a coma*). In this case, someone else must take over.

Glucagon is a hormone that stimulates your liver to release stored glucose into your bloodstream when your blood glucose levels are too low. Injectable glucagon kits are used as a medication to treat someone with diabetes that has become unconscious from a severe insulin reaction. Glucagon kits are available by prescription. Speak with your health care provider about whether you should buy one, and how and when to use it.

The people you are in frequent contact with (*for example, family members, significant others, and coworkers*) should also be instructed on how to administer glucagon to treat severe hypoglycemic events. Have them call 911 if they feel they can't handle the situation (*for example, if the hypoglycemic person passes out, does not regain consciousness, or has a seizure, if the care taker does not know how to inject glucagon, or if glucagon is not available*).

If Glucagon is Needed:

Inject glucagon into the individual's buttock, arm or thigh, following the manufacturer's instructions.

When the individual regains consciousness (*usually in 5-15 minutes*), they may experience nausea and vomiting.

If you have needed glucagon, let your health care provider know, so they can discuss ways to prevent severe hypoglycemia in the future.

Do Not:

- Inject insulin (*will lower blood glucose even more*)
- Provide food or fluids (*individual can choke*)
- Put hands in mouth (*individual can choke*)

Source: <http://www.diabetes.org/living-with-diabetes/treatment-and-care/blood-glucose-control/hypoglycemia-low-blood.html>

INSULIN DOSING

Here's a thought process you might relate to: "So if my blood sugar is currently 205 and I want to eat 65 grams of carbohydrates, but I also want to go on a run soon, how much insulin do I give myself?" Confusing, right?

Insulin dosing can be one of the most overwhelming parts of managing diabetes. The complexity of the way the entire body works to produce just the right amount of insulin to break down what you are eating into energy is absolutely incredible. Since the beta cells in your pancreas don't make insulin for you, you must get it into your body another way. The tough part is deciding how much insulin to give for the carbs you are eating, while also accounting for all other relevant factors. Everyone needs a different amount of insulin at varying times of day. Much like blood sugars, insulin doses can be somewhat sporadic and change frequently. But there are a few points that are very helpful in determining your insulin needs, and with practice and determination, you will get the hang of it.

First, let's talk about the difference between basal and bolus rates. A properly functioning pancreas makes insulin throughout the entire day at a steady pace to keep the individual's blood sugar stable. This is referred to as basal insulin. If you are taking multiple daily injections, you may take a shot of long-acting insulin once or twice a day, depending on the management plan you set up with your physician. For pump users, only one type of insulin can be used, so it will be programmed to give you a certain amount of insulin every so often (*Gilles, 2016*)—this is called the basal rate.

A bolus insulin dose is typically given right before meals or to correct blood sugars, and is used to help your body process the foods and drinks that you consume. This is when you will give yourself a shot of fast-acting insulin, or you might use your pump to give yourself some insulin (*Gilles, 2016*).

Second, be sure to listen to your doctor. As frustrating as they might be at times, and as much as you feel like they may not understand your daily struggles, they are your doctor and they can have some really valuable information to share. They will help you determine your insulin-to-carb ratio, which will then help you decide how much insulin to give yourself for the carbs you are consuming, as well as figuring out your basal insulin dose (*if on a long acting insulin*) or basal rates for



various times of the day (*if on a pump*). Side note—if you do feel that your doctor just isn't a great match for you and what you need, see the "Finding an Endocrinologist" section of this guide for more info.

Third, if you notice something isn't working, try something new (*within reason, of course*), and lean on your support system. While your diabetes healthcare team probably understands diabetes very well, you also know your body and what your daily life looks like. As you become more comfortable with managing your diabetes, you will learn how to (*and feel confident*) making small adjustments. If you think you might need a little more or less insulin at certain points of the day, making small adjustments can be very empowering. However, before making any major changes, be sure to talk to your diabetes healthcare team and get their professional advice.

Fourth, know that becoming lazy with dosing your insulin is too easy. It can become easy to guess on the carb count of foods, and even forget to give yourself insulin completely. That's just real life—it is busy and crazy at times, but it happens. Take a deep breath, and remember that it's important to take care of your body. Yes, diabetes takes some extra time, energy and math, but the 30–60 seconds it takes to calculate and give yourself insulin are worth it. With T1D, not giving yourself insulin isn't an option—it is what keeps you alive.

Finally, you may have heard of something called 'honeymooning' or the 'honeymoon period'. Honeymooning is defined as the period—sometimes weeks, months, or even years—soon after your diagnosis, where the beta cells in your pancreas may begin to "work again" somewhat. This is known to happen to those recently diagnosed with T1D because after you begin to give yourself enough insulin, your beta cells can rest from all the hard work they were doing. Then after that rest period, they may have a little more insulin to provide. As mentioned, this period may last for only a few weeks for some people, but also could last multiple months and even over a year for others. This will depend on your body, and there really is no way to guess how long this period will last. The honeymoon stage often results in multiple hypoglycemic events without proper adjustments to your insulin doses, or you may simply notice that your blood sugars are consistently on the lower end. If you notice your blood sugars trending in this direction, be sure to talk to your doctor and let them know. They should be able to help you adjust your insulin needs accordingly to help prevent too many lows.



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CARB COUNTING

What's in a carb? In laymen's terms, a carb is a macronutrient that is broken down in your body to glucose to provide you with energy (Szalay, 2015). Actually, the question should be: "How many carbs are in that?" If there was a frequently asked questions list for diabetes, that one would definitely be at the top. As you know, T1D is caused by the pancreas ceasing to produce insulin, which takes the glucose from carbs that we eat from the blood to cells to be used for energy. In order to know how much insulin to give yourself for a meal, you need to know how many carbs are in it. While we're on this note, you also should know that diabetes does not prevent you from eating any foods, although you will begin to learn how different foods affect your blood sugar differently and make personal decisions about the foods you eat accordingly. The most important thing you need to account for is how many carbs are in the foods you are eating, however, keep in mind that other macronutrients like fat or protein can affect the way your blood sugar may respond. Soon enough you will have a library of foods with all of their carb counts stored in your head. You'll become a pro at reading food labels quickly, and get to know ingredients in larger meals well, allowing you to guesstimate the carb count even when it isn't labeled. But always remember this: no two bowls of chili are made the same!



CDN TIP

- ✓ Because of the ultra-rapid absorption of liquid carbs, even fast-acting insulin given way in advance can't prevent huge blood sugar spikes from juice, soda, sports drinks, or sugary coffee drinks. Fortunately, there are lots of great diet or sugar-free options in all categories. Though these might take a little getting used to initially, you'll save yourself a (*literal*) headache from high blood sugars later on. Unless treating a low, be careful with sugary drinks! If you are having fast acting carbs (such as white bread, a bagel, juice, etc.) you may want to bolus further in advance (15-30 minutes before eating) to avoid any crazy blood sugar spikes.



CDN TIP

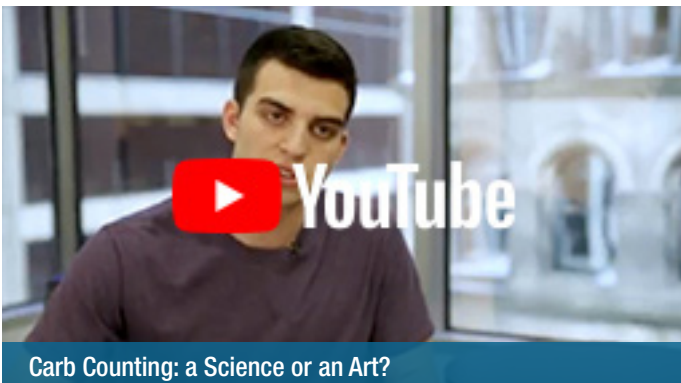
- ✓ Many people with diabetes don't follow a specific diet but some find a low carb diet can be extremely beneficial for stable blood sugars. It is incredibly empowering to understand how food affects your body and blood sugar. For more information, check out "[Bright Spots and Landmines](#)" by Adam Brown (available for free via Diatribe!) to learn about his experiences with a low-carb diet!

In this modern world, we have access to immense amounts of information, especially in regard to food and nutrition. All of the apps, websites, and blogs that exist today provide us with almost anything we need to know about food. Although we will explain this more later, the CalorieKing or MyFitnessPal apps offer comprehensive nutrition information available for tons of different foods, and almost every chain restaurant throughout the United States. Sometimes a quick Google search is all you need to find the carb count in the food you're about to eat. It certainly can be overwhelming at first to realize how many carbs are in your favorite meal or drink at your favorite restaurant (*remember, you can still have those!*), but having accurate information is crucial to determining the correct insulin dose. This saves the headache as you are dosing, and hopefully saves you a headache later if your blood sugar is in range.

You might have noticed the key word in the last paragraph is 'almost.' You'll always have almost all the information you need. You're never going to have full information about every food, drink, snack, etc. that you consume. There are far too many parties, events, and mom-and-pop restaurants where carb information is not readily available. And not eating something because you don't know how many carbs are in it is unrealistic, and will get old really fast.

In situations like these, you'll have the opportunity to guesstimate. Use that awesome library of foods built up in your head to find a food similar to what you are currently eating, and adjust the carb count at your own discretion. It is also a good idea to just look up the food on your phone quickly, if you can, to get a general idea. Although you may not find the carb count for exactly what you're eating, that information will give you a starting point on which to make your "guesstimate". It may be helpful to ask for the ingredients of the food at a restaurant that cannot provide carb information in order to get a better idea of what you need to account for. If you notice something (*especially sugary sauces*) that may be hiding extra carbs, you can ask for it on the side or to be left off completely.

Another essential part of carb counting is determining the portion size of whatever you are putting into your body. One website might say that the meal has 80 grams of carbs, but that is for a dinner portion. If you're eating the lunch portion, which is about $\frac{3}{4}$ of the size, you'll want to adjust the carb count accordingly. Not to mention, different people will have different interpretations of what qualifies as a lunch or dinner portion.





NUTRITION

“YES, I can eat that!”—make this your new catch phrase! You can indeed eat whatever and whenever you want. Before we talk logistics, please know that your diet does not necessarily have to change just because you have been diagnosed with diabetes. We have heard time and time again from friends and strangers things like: “I could never have diabetes and have to eat healthier.” But having diabetes does not require you to eat a certain way. Everyone should eat well and take care of their body, regardless of if they have diabetes or not. That being said, eating whatever you want, whenever you want, is undoubtedly going to impact your blood sugar. Moderation is key, and remember to balance healthy eating with all the other things that come with young adult life.

People will likely ask you over and over: “Can you eat that?” or “Do you have any dietary restrictions?” or “Should you really be eating that?” Although sometimes people ask out of care and respect, sometimes it is also out of a lack of knowledge, particularly about the differences between type 1 and type 2 diabetes (*see the handy chart at the end of this guide!*).

The question of “Can you eat that?” or better yet, the statement “You can’t eat that!” usually comes from the idea that you should never eat anything unhealthy because you have diabetes. Over the coming months and years, you may hear variations of the statement in reference to desserts or high-carb foods. This is a great opportunity to educate that individual on T1D, and explain that you can absolutely eat something like cake or ice cream, as long as you account for it properly with insulin.

Some foods really have little to no nutritional value, but that doesn’t mean they aren’t delicious and to be enjoyed in moderation. Not only is food the fuel your body needs to live, but eating can also be a social experience. You’re surely going to attend lots of parties, events, and dinners throughout the rest of your life that will have many delicious, and often “unhealthy”, foods that taste way too good for you to pass up. When you’re at an event like this, especially with homemade foods which may be difficult to carb count, don’t be afraid to ask who brought the food and what kinds of ingredients they used to get an idea of what is in it. Or use your phone to look up the general nutritional information of that food. Pizza can be especially tricky, with all of the different recipes and ingredients that are offered by various restaurants. In these cases, it may be helpful to look up a sample recipe online to find a base to start out for the carb count, and then adjust from there. With practice, in no time you’ll have a pretty good idea of how many carbs are in many of these foods, and it will become second nature.



Carbs, carbs, carbs—most of the time the number of carbs in a food seem to be all that really matters. But every part of the nutrition label deserves attention. Factors like fat, protein, sodium, and fiber all can play a part in how a food is processed in your body and how it affects your blood sugar. For example, foods with a high fat content take longer to process, and therefore bring your blood sugar up more slowly, and will often cause you to be high several hours after eating. This means that chocolate, tragically, is not a great low blood sugar snack. Additionally, foods with protein can help increase the time it takes for your body to process it, which can actually stabilize your blood sugar (*Franz, 1997*). This can be particularly helpful if your blood sugar fluctuates high or low at night, so you might consider eating a high-protein snack before bed. In contrast, foods with high fiber content can raise your blood sugar slowly, so be sure to watch your blood sugar multiple hours after eating.

EXERCISE

We totally get it: exercise is most definitely not everyone’s “thing”. It may not be something you always enjoy or make time for, and when you have diabetes, sometimes exercising just feels completely frustrating. You exercise and hope to lose weight, build muscle, or just get your heart rate up, and if you don’t eat just the right amount beforehand and adjust your insulin well, your blood sugar either plummets or skyrockets—and then you have to either eat the entire contents of your refrigerator, or drink a ton of water and give yourself insulin to bring your blood sugar back in range. If you can relate, you’re definitely not alone. But, more often than not, exercise is worth it. Let us explain why.

Exercise is a topic that many people without diabetes will have misinformation about, thinking that it will somehow cure people with diabetes. As you hopefully know, this isn’t true. However, just like everyone else, people with diabetes need to move. Just as it helps people without diabetes stay healthy on the inside and out, it helps people with diabetes



CDN TIP

- ✓ Try to exercise at the same time of day, if possible! Exercise can both raise and lower blood sugar, but a consistent schedule and routine can help with these fluctuations.

in the same way. In addition to the well-known benefits, exercise also helps improve insulin sensitivity in people with diabetes, meaning that your body responds more readily to the insulin you are administering, leading to more blood sugar readings in range. Whether you were an avid exerciser before you were diagnosed, or you preferred to do other things with your free time, making the time to work out will, without a doubt, help you manage your diabetes—physically and mentally. Finding a type of exercise that you actually enjoy can make a huge difference—you don't have to go to the gym and run on a treadmill to exercise. Maybe you like to play basketball, golf, swim, or walk your dog. Pro-tip: Walking to class or dancing at a party is considered exercise!

When you do exercise, there are a few important things to take into consideration—namely, your blood sugar. The majority of the time, exercise will lower your blood sugar. Sometimes it can lower it even multiple hours after activity, so be sure to check your blood sugar immediately after, as well as a few hours, after you exercise. For some people, certain types of exercises can increase their blood sugar, instead of lowering it. It is important to talk to your doctor about how exercise might affect you personally, but doing some safe trial and error (*while working out with a friend*), and learning from what you do is also helpful. Once you understand more of how your body reacts to various exercises, you can adjust your insulin and carb intake accordingly.



There are a few tips and tricks you can use to help make exercising with diabetes a little easier to manage.

- 1 Test your blood sugar before you exercise.** Make sure it is in an appropriate “before exercise” range for you. If you're on a pump, it may be a good idea to decrease your basal rate ideally at least 30 minutes before activity. If you're on injections, you may reduce your basal insulin before and/or after exercise. Work with your doctor to determine what is best for you.
- 2 Eat a small snack with carbs and proteins before exercising.** Remember, protein makes carbs break down slower, which will help keep your blood sugar stabilized during exercise. Make sure not to eat too much though; you don't want to get sick while you're working out. Also, if your blood sugar is high before exercise (*i.e.* >200 mg/dl) then you may not need to eat anything. On the other hand, you may consider eating a larger snack for a really intense and/or prolonged activity. The key is to take notice of how different activities affect your blood sugar to decide when and how many carbs are needed beforehand.



- 3 Keep your meter and a few low snacks close.** In case your blood sugar drops quickly and you need to check, make sure you can easily access your meter and a snack or juice in case you need to treat a low. If you're going out for a run, try using a running belt to hold your diabetes gear! If you're wearing a CGM, take note of your current glucose as well as trend arrows during exercise, which could give you an idea if you are dropping quickly.
- 4 Exercise with a buddy, if you can, who knows you have diabetes and knows what to do in an emergency.** If you prefer to exercise alone, be sure to let someone know where you are going and how long you plan to be gone (*at least while you are getting used to how your body reacts to different kinds of exercise!*). Make sure to have a medical alert ID on you, too.
- 5 Lastly, check your blood sugar immediately after and then a few hours after you exercise to see how your body reacts.** You may also want to check during exercise, approximately 30-60 minutes into your routine. Adjust with a snack or insulin accordingly, and consider documenting what you did during your workout and how your blood sugars reacted. Almost any fitness app and some diabetes apps have places for you to add notes about your workout, which can make planning for future workouts much easier. Keep in mind that managing your blood sugars while you're exercising may involve a lot of trial and error, but you will eventually find what works for you.

FINDING YOUR HEALTHCARE TEAM

There are so many members of your diabetes healthcare team that you can work with to help better manage your diabetes. Endocrinologists, certified diabetes educators (*CDEs*), nutritionists, pharmacists, and mental health professionals can all play a critical role in keeping you healthy and helping you to better understand your diabetes. Keep reading, and we'll explain a few practical tips for how to find the right providers for you.

“An endo-crin-what?!”—maybe that's what you're thinking right now. Do not fear! Let's explain who an endocrinologist (*commonly referred to by many T1D's as an “endo”*) is.

An endocrinologist deals with the endocrine system, which includes hormone-producing organs like the thyroid, adrenal gland, and pancreas. Because diabetes is caused by a malfunction of the pancreas not making

enough insulin, an endocrinologist is the main type of doctor to see for diabetes. Although many healthcare professionals and general practitioners may have had experience with diabetes throughout their career, an endocrinologist is a doctor that will have the most training, knowledge and experience with the condition (*Mandal, 2014*). It is vital for you to have a doctor who knows diabetes like the back of their hand. It's important to find an endo who is knowledgeable and willing to work with people with T1D, so you may find it helpful to look for ADA certified programs, or check out the [American Association of Clinical Endocrinologists \(AACE\)](#) for endos who are looking to work with people with T1D.

Your endo is an enormous part of your diabetes team, even though you may actually only end up seeing them a few times a year, for 15–30 minutes at each appointment. They will help you determine all of your insulin ratios, answer the complex questions that others on your healthcare team may not be able to, and give you that wonderful A1c number, which estimates your average blood sugar over the last three months. Your endocrinologist will write your prescriptions for your important supplies such as insulin, test strips, and other things. They should also examine and test your body for complications from diabetes, including foot and eye issues, and any scar tissue that may develop. Although your endo is likely only one part of your diabetes care team, you absolutely need to feel comfortable and safe, and if you get along and chat like old friends, that's an added perk.

Unfortunately, because endocrinologists are specialists (*and there are not nearly enough available for the number of people who need to see them!*), they can be a little difficult to find and get an appointment with. If you live in a rural area with few providers to begin with, you may have even fewer options. Nonetheless, there are a few key steps everyone should take to find a great endo, in addition to other healthcare team members.

1 Start looking as soon as possible. A good first step is to contact your health insurer and find providers near you that are in your insurer's network. Deciding on one to see can take some time, and then getting an appointment is the next step. "Where would I begin to look?" you may ask. Well, the Internet is a beautiful thing, and has lists of endocrinologists at various hospitals and offices in your area. Usually there are even short bios and reviews from patients available, too. You can begin your search by typing "Endocrinologists in [insert your location here]" or "Reviews of endocrinologists in [insert your location here]" into Google, and see what results you get. Check out your local hospital systems and doctors' offices to see what you find. You may

even find Yelp reviews about practices in your area. Keep in mind, negative reviews may not necessarily be indicative of the type of doctor that person is. Many people only feel compelled to leave a review when they've had a bad experience. Don't write off a doctor just because of one bad review! Some doctors are just not for everyone. Lastly, try contacting your local ADA (*American Association of Diabetes*), JDRF (*Juvenile Diabetes Research Foundation*), company reps for your diabetes devices, or a CDN Chapter to ask for their recommendations.

- 2 Do solid research.** Read the bios and reviews on the websites you find. See if the doctor, as a person, might be someone you would get along with well. Talk to your primary care provider, friends, and family in your area and see if they know any endocrinologists who may be accepting new patients, or if they know anything about ones you have come across in your research. Remember, someone you ask doesn't necessarily have to have diabetes to know something about an endocrinologist. And of course, there is always social media. This is a good place to look for more reviews and thoughts from people with diabetes about the doctors they have seen. You can search on sites like Facebook to find local diabetes groups, where people may have shared thoughts about endocrinologists, or where you can ask them for recommendations.
- 3 Call and schedule an appointment with the doctor's office.** Hop on the phone and reach out to request an appointment with the new doctor you have found. If that specific doctor is not accepting new patients, try the second or third doctor on your list. You also can ask the receptionist if there are other doctors in their office or in the area who are accepting new patients, if you would like some more recommendations. Keep in mind, your insurance may require you to have a referral from your primary care physician or previous endo.
- 4 Once you have your first appointment scheduled, it's basically like dating.** Think of a few questions or concerns you have that you would like to ask your doctor about. Are your blood sugars a little wacky at a certain time every month? Are you struggling to carb count well? Are you concerned about how a medication you are taking may be affecting your blood sugars? Are you waking up with blood sugars too high or low in the mornings? Are you interested in learning more about diabetes devices like insulin pumps or a CGM? Narrow down your questions to the most important ones that you want to ask, because you won't have unlimited time, and be ready to ask those when your doctor gives you the chance. The more you can tell your new doctor about what you liked or didn't like about past doctors, the more they will be able to help you (*or let you know they may not be the best fit*).

You also should be prepared to answer about how you have been managing your diabetes on a daily basis, what your diet has consisted of, and how you have adjusted emotionally and mentally to having diabetes.

- 5 Think about how you feel after your appointment is over.** Did your doctor treat you kindly? Were they honest with you about how your blood sugars are doing? Did they encourage you to manage your blood sugars well, and give you any advice on how you can manage them even better? Did they teach you anything new and helpful with diabetes? And most importantly, did you feel safe and comfortable with them?





CDN TIP

- ✓ Don't forget to ask for any refills you may need in the next few months!

If you can answer yes to most of those questions, call back a few days after your appointment and schedule another appointment around the time your doctor suggests. Then keep going to them as long as you feel like you are getting what you need. If you weren't happy with your experience at that doctor, try someone new. It can certainly be a little more effort to go through the process with a new doctor again, but it is absolutely worth it when you find a doctor who truly helps you manage your diabetes better. Your endo is also not the only important person on your care team—you may find that your CDE, dietitian, or support system can fill in the gaps where your endo may be lacking.

You should never feel unsafe, mistreated, or looked down upon by your doctor. A good doctor will never be rude or angry with you, or use bullying or fear to make you feel bad. You should never be made to feel inadequate, like a failure, or scared of your diabetes. Sometimes your doctor might have to deliver disappointing news, and there can be real consequences, but they should always be supportive, constructive, and encouraging. If you are not receiving this from your doctor, move on to someone new—and fast! Seek out providers who you know you can trust and rely on to support you!

One last note regarding your diabetes care team: as knowledgeable, experienced, and helpful as they are most of the time, they are not perfect, and they don't know everything. They will not be able to answer every single question or concern you have about your diabetes. They are human and subject to error, just like us. Not to mention, unlike other diseases where a doctor is responsible for a lot of the management decisions, you're the one managing your diabetes 99.9% of the time. Be prepared to be the expert (*sometimes even with your own doctor!*) and don't be afraid to speak up if you think something isn't right. Be patient with them as they learn about you and your diabetes, just as you learn from them. Be sure to communicate clearly and openly about how you are doing with diabetes, including both the good and the challenging days. Talk to them about your communication and learning style, and how you think they can really help you.

An Endo's Advice:

Make sure your doctor is willing to collaborate with other providers. Also, remember, your job is never to “please” your doctor...so many patients are afraid to leave an old doctor so as not to “hurt their feelings”. Good grief. It is not a doctor's ego that matters, it is the patient. I am never ever upset if a patient finds a better doctor for themselves than me. I am not the perfect doctor for everyone. I know that. If a doctor seems too possessive or egotistical that is a bad sign. We doctors learn everyday. I share what I learn. And that will change overtime. And my patients are my best teachers.

SICK DAYS

You may hear your endocrinologist tell you that as a person with diabetes, your immune system is compromised, and you are more likely to get viruses like the flu. There isn't a ton of evidence to prove that people with diabetes are more susceptible to getting sick, but it can certainly be more challenging to fight off colds and viruses when you are also dealing with the highs and lows of blood sugars.

While T1D is an autoimmune disease in that your immune system mistakenly attacked your insulin-producing beta cells in your pancreas, your immune system should otherwise be healthy, especially if you are taking care of your diabetes. According to Diabetes Mine, “The autoimmune part of type 1 is very particular, as only the beta cells in the islets are targeted; not the other cells in the islet, and not the other cells in the pancreas. In all of the usual ways, the immune system is just fine.” (*Tenderich, 2008*). That being said, being sick can do all sorts of crazy things to your body when you have diabetes.

It's a good idea to prep a sick day kit before you get sick, so that when you do come down with a cold or flu, you're prepared. Some suggestions of items to include in your sick day kit include: regular and diet ginger ale, sports drinks like Gatorade or Powerade, saltine crackers, documentation of basal rates for sick days, Glucagon kit, ketone strips/meter, insulin (*fast-acting*), syringes, a copy of your doctor's sick day guidelines (*including when to call and your diabetes care team's daytime and after-hours phone numbers*), a copy of your insurance card, glucose tabs, honey, water, thermometer, ibuprofen, antibiotic ointment, adhesive bandages, and cough syrup.





**MENTAL
HEALTH**

While many people think of diabetes as simply a physical condition, the mental and psychological aspects of this disease are immense. You are battling a chronic illness that impacts nearly every aspect of your life, 24/7, and with no breaks. This can be draining, exhausting, anxiety inducing, stressful, and downright just sucks sometimes. This section will focus on how to take care of yourself mentally while living with diabetes, and cover topics like what “control” over diabetes means, how to create a support system, what to do when you experience burnout, and how to advocate for yourself.

CONTROL: WHATEVER THAT MEANS

You may have already heard your doctor or others talk about having “good” or “tight” “control” of diabetes. Dictionary.com defines “control” in the following way: “to exercise restraint or direction over; dominate; command” (*Control, n.d.*). Now, if you can find someone who can actually “control” their diabetes by this definition, you should probably win a million dollars (*and please tell us who they are so we can learn their secrets*). In short, diabetes may feel completely out of your control sometimes, and that is okay.



As we have explained, essentially everything affects your blood sugar. Many bodily functions and hormones greatly affect blood sugar, and you really have very little or no control over those. A myriad of factors can also play into your capacity to give yourself the right amount of insulin, check your blood sugar, eat well, and exercise. All of these, of course, affect your blood sugar, and your life with diabetes. There is already so much to do and think about on a daily basis, and having diabetes adds a little (*or a lot*) more to the mix.

Because diabetes is so complex, many times you’ll feel like you are doing everything you can to make the best decisions for your body—eating all the right foods, giving yourself just the right amount of insulin, exercising in just the right way, and checking your blood sugar just the right number of times every day. You’ll try to not get too stressed, and sleep enough. You’ll try not to drink too much alcohol, or overeat when your blood sugar is low. You’ll try to not eat too much when your blood sugar is high, and you’ll try to eat meals at regular times. But those tasks don’t always fit as neatly as you’d like into your life. Even when it feels like you are doing all the right things to “control” your diabetes, you may find that it still doesn’t feel controlled. One day you may feel like you did everything “right”

because your blood sugars were in range, but the next day you may do all of those things again, and get different results.

If you ever feel this way, know that you are not alone, inadequate, or “bad” at diabetes. Keep in mind that all you can ever do is your best. You can try your best to eat well and regularly, give yourself the correct amount of insulin, exercise often, sleep enough, and check your blood sugar. If you are trying your best, you can be sure that you are doing what you can to manage your diabetes well. But, even if you are trying your best, your blood sugars may not be what you are expecting or what you want. An important thing to remember in these times is that you are not defined by how you manage diabetes. It is certainly frustrating when your blood sugar isn’t what you want it to be, but try and learn from what happened and don’t feel guilt from your out-of-range numbers. Diabetes is a part of your life—not who you are. It can certainly feel like it takes over life at times, but you are far more than your diabetes.

Every person’s body is created uniquely, which means that what works for one person with diabetes, even of the same sex, age, and stage of life, may not work for you. That’s why this guide doesn’t necessarily have suggestions for foods, insulin dosages, etc. But it does mean that it will take you some time to learn what works for your body and what doesn’t. Even after you’ve had diabetes for a long while, you will continue to learn through new stages and places in life. You now have a chronic (*life-long*) condition that may be one of the hardest things in your life to deal with, but it will also teach you more than you may have ever imagined about yourself, your body, others, and much more. Learning through diabetes is something that is a continual process, that even people who have had it for many years are still doing.

With all of that said, you can and do have control of your diabetes. You have diabetes; diabetes doesn’t have you. As contradictory as that may sound to what you just read, your diabetes is yours, and no one else’s. You have the power and the capacity to care for yourself well—to continue to make adjustments to how you manage your life and your life with diabetes. As you experience the literal highs and lows of diabetes, you can use those to learn and grow. Remember: your blood sugars are an indicator of how your body is feeling and how hard it is working. They certainly should not bring on guilt or shame, but should be used to learn.

And what is even better is that you don’t have to do that alone. You can create an incredible support system to help you along the way. Read on to figure out how to do that.



TELLING OTHERS

We have already established that diabetes is a complex, challenging, and demanding condition. Sometimes it can also feel like it is entirely up to you to manage it. In reality, though, diabetes is a condition that cannot be managed on your own. It is absolutely vital that you surround yourself with people who love and support you. We will talk about how to do that more specifically in the next section, but first, in order to surround yourself with those people, there have to be people in your life who know that you have diabetes.



The thought of telling others that you have diabetes may not be a problem for you. Maybe you have already shared it with the vast majority of your friends and family members, and they have responded positively. It might be valuable for you to skip down a couple paragraphs to think about how you will share it with new people in your life.

But maybe telling others about your diabetes seems intimidating or awkward. Maybe you've already experienced a really hurtful or frustrating response from someone when you shared with them, and now you are hesitant to tell anyone else. Or maybe you just don't think that they need to know. No matter what, you should know that who you tell, and when you tell them, is up to you. It is important to tell the people in your life that you are closest to, in order to ensure your safety in case of an emergency, but you should not feel pressured to tell everyone.

Telling others that you have diabetes can definitely be uncomfortable in certain situations. If you haven't already, you'll probably notice that many people don't understand the differences between type 1 and type 2, and sometimes they just say things that make no sense or make you feel awful. Over time, it can become exhausting to explain to people what diabetes is and how it affects *(and doesn't affect)* your life. Your doctor might have told you that diabetes requires some extra math, but they may have accidentally left out that it also requires a lot of patience! But it is worth it to tell others, for multiple reasons.

First, telling others that you have diabetes can give you the opportunity to learn more about the condition as you educate them. As they learn more, they may begin to ask questions that you had not thought about before. More importantly, telling others that you have diabetes is also vital to your safety. The people closest to you need to know that you have diabetes, understand what it is, and know what to do and how to do it in case of an emergency.

Take note that we said, "the people closest to you." Of course, you are surrounded by different people at many points of the day, week, month, and even year. You have many parts of your life that involve you moving around and encountering lots of people. There's no way that every single person that you're ever around is going to know that you have diabetes. Not every single person actually needs to know, nor is it practical for you to tell them all (*this is where a medical ID can be so important*). However, it is helpful to have at least one or two people you can count on in various situations you find yourself in (*at school, at home, at a party, etc.*) to understand diabetes and know how to help you, should you need it. Think about someone at home (*or who lives near you*), someone at work, in your family, in your friend group, a workout buddy, a party friend, and others who can be your go-to-person in various times and places.

Once you have an idea of who those people might be, your next question might be [how you tell them](#). This does not have to be complicated. Keep it simple by explaining the basics—blood sugar, insulin, and carb-counting. Make sure they understand what the symptoms of high and low blood sugar are, and then explain what you would like them to do to help you if you are experiencing either of these situations. If you stay cool and calm during the conversation, they are likely to do the same. Follow up by asking if they have questions along the way, and answering what you can. Share anything else that you are comfortable sharing with them (*how to check your blood sugar, how your pump or injections work, how to give Glucagon in a low blood sugar emergency, etc.*), and then move about your life like normal.



BUILDING A SUPPORT SYSTEM

Like we mentioned earlier, your diabetes can feel like a heavy burden that only rests on your shoulders—that no one else is responsible for your health besides you. You decide how much food to eat, and how much insulin to give yourself. You decide when and how you exercise, if at all. You decide how to manage your stress and how to spend your time. This may be very empowering if you enjoy having control. However, you might also be overwhelmed by all of the responsibility you have to take on, or feel lonely in dealing with diabetes all on your own.

No matter how you're feeling (*and this may change over time*), know that living with any chronic condition without a support system can be difficult—not only physically, but emotionally and psychologically as well. Diabetes is not something you should handle completely on your own. You deserve to have people around you that understand, love, and care for you well.

When we say “support system,” we aren’t talking about a “support group” (*although they can be the same*), but we are talking about a few people in your life who you know you can count on. These people may or may not have diabetes. These are people who you can call at 2 A.M. when you are sick and your blood sugar is crazy high. These are people who remind you that you are more than your A1c. These people will encourage you to keep trying and moving toward your goals when you are exhausted, but also know when to back off and let you handle things yourself. These are your people.

These people also include medical professionals, like your endocrinologist, diabetes educator (CDE), primary care provider, dietician, or optometrist. Maybe for a time this includes the health care professionals at your college health clinic. This support system also includes many others such as your friends—with and without diabetes, family members, and co-workers. In college, this support system can be especially helpful to build, as you may be living away from your family.

Begin to identify these people in your life. Have there already been people who stepped up to your side when you were diagnosed that were there to help? Are there friends or family members who already know and love you and want to support you in your new life with diabetes? Or are there new people in your life that you want to reach out to for support (*CDN Chapter?*)

Don’t be afraid to reach out and ask people to support you. Your friends and family will want to help, but especially because you are a young adult, they may also want to give you space. If they don’t have diabetes themselves, they also may not understand how to truly help you. These two aspects —being supportive and understanding diabetes versus being a little overbearing— are key when it comes to support. There are many resources and even support groups for significant others, friends, and family members of people with diabetes. If someone in your support system is interested in joining one to learn more and connect with others, these groups may be helpful for them!

Along with making sure these people understand diabetes well, you can also let them know how they can help you. There are a ton of great resources out there for your support network—such as Facebook groups, message boards, articles, and blogs. Tell the people in your support network about things they say or do that you find offensive or unhelpful. This may take some time to figure out, and it may be different for various people in your life. Maybe you’re okay with a significant other giving you advice on your blood sugars, but maybe you’re not cool with that coming from a family member. Although it can be awkward at first,



it is important that you share how you perceive what they say or do with the person openly and honestly in a kind and gentle way.

Your friends and family members may never fully understand what it is like to live with diabetes, but you can teach them more about it, and explain how they can help you. They will certainly want to do what they can to help make your life easier and more comfortable because they love and care about you. Creating a respectful space where your friends and family feel comfortable asking you questions about your diabetes can help them better educate themselves, and support and understand you.

SELF-ADVOCACY

“Oh, how could you have diabetes, you’re not chunky!”

“Should you be eating that? It has a lot of sugar.”

We could go on, but you get the point. These are real lines that young adults with diabetes have heard from others when they share that they have diabetes. Absolutely crazy, right?! Hopefully you haven’t heard too many of these kinds of comments yet, but if you have, please know that you aren’t alone. Unfortunately, the confusion and misconceptions about diabetes are still very prominent, and cause people to comment in ways that can be frustrating and hurtful. Trying to understand and manage diabetes well everyday can be taxing enough, but then hearing insensitive and ignorant comments on top of that can just be exhausting. It is important to recognize how these words affect you mentally and emotionally, and express your thoughts to those that are commenting, so that anger isn’t bottled up. You may also find that talking to a counselor or therapist can help you to process some of what you may be feeling. Check out the [“Burnout, Body Image, and Depression”](#) section of this guide for more info on how diabetes may not just be affecting your body, but your emotional well-being, too.

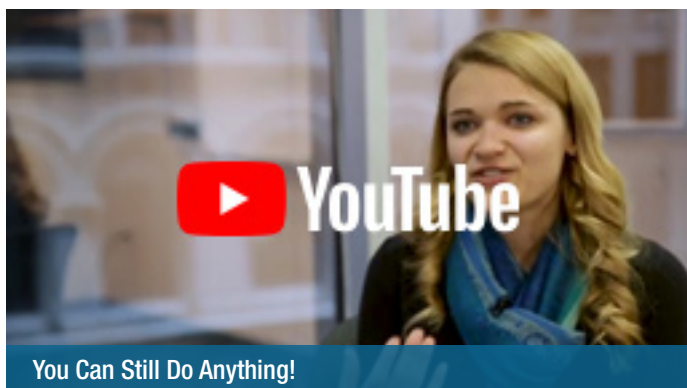
Although responding to people who have made insensitive comments in a harsh and hurtful way is tempting, remember to have patience. Take their ignorant comment and turn it into an opportunity to educate them. Ignorance is one of the biggest reasons that people say these types of things. This doesn’t make their words okay or any less hurtful, but it does give you a chance to prevent them from making that same comment to another person with diabetes. Self-advocacy is all about sharing the truth about diabetes, as well as standing up for yourself and what you need. Over time you may decide to pick your battles, and that is okay too. Educating and correcting every person you hear an ignorant comment from can also be tiring, so in some instances you may decide to just let it go. What and who you decide to correct is up to you.



When people in your life (*even people you think understand diabetes*) choose to make upsetting jokes and comments, it can be helpful to mentally and emotionally process how they will affect you in the short-term and in the long-term. At the very least, if you don't find them funny, don't feel obligated to laugh. Maybe certain jokes from certain people at certain times are okay with you, but others are not. Setting boundaries on jokes and comments, especially from friends and family, is healthy. You get to decide what is okay with you. But you also need to be sure to communicate that to those around you. When someone says something you aren't cool with, tell them why it isn't okay and ask them to respond differently next time.

In addition to upsetting jokes, you may also have people commenting on your blood sugars or what you eat. You may not be cool with this either. The way you manage your diabetes is up to you and your doctor (*with the goal being, of course, to take good care of your body*). Over time, people are bound to see your blood sugar when you check at a meal or party, in a meeting, or during class, and they are also bound to have an opinion about it. Although most people simply are curious or want to be helpful, they likely don't understand the hourly battle that diabetes brings. In these situations, continue to be bold and stand up for yourself. If you aren't okay with them peering over your shoulder to see your blood sugar pop up on the screen and then comment on how "good" or "bad" they think the number is, tell them that! They may never realize how frustrating it is for you if you don't let them know.

You may also have friends and family who, while well intentioned, can sometimes totally miss the mark on being helpful when talking about diabetes to you. You may have already experienced the frustrations that come from some of these people, and if you haven't



yet—you will. The general population living without diabetes typically has heard of the condition and could probably tell you that it has to do with sugar—at the very least. Although you periodically may be pleasantly surprised by how much someone may know, you likely will run into someone that doesn't know much past "sugar."

Because all they may know is that the condition has to do with having too much sugar in your body, they usually make the assumption that you can't have any sugar. One question you may hear often is "Can you eat [insert sugary food here]?" Depending on the person and the situation, you will want to vary your response. But it is almost always appropriate to say "Yes, I can have that, actually! As long as I give myself enough insulin to cover the carbohydrates that are in it, it isn't a problem."

Then you may have the people at gatherings with family and friends, or even professional events, who genuinely want to be helpful and kind, but just don't get it. They may bring you a sugar-free pie, or offer a different food option (*usually that isn't nearly as tasty*) to "accommodate" for your needs. These kinds of situations can be tough. You don't want to be rude and refuse to accept what they see as kindness, but you also should use it as an opportunity to inform them of what diabetes really is, and what is isn't. Maybe try to take a few bites of what they have bought or prepared specifically for you, and then take some time later to explain that although you appreciate them thinking of you, you really can have all the same foods as those without diabetes.



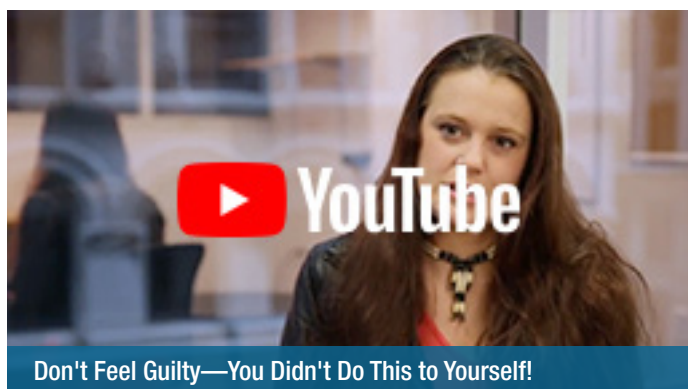
At times, people's comments may even be discriminatory or unlawful. Although the "Working World" and "What are my Rights?" sections will delve more deeply into your rights with diabetes, it is important to stand up for yourself in situations where others may be discriminating against you. Whether that is in a class or meeting, on the job, or in another setting, you deserve to be treated like anyone else does. If a colleague, professor, volunteer, or anyone else says something directly or indirectly discriminatory towards you in regard to your diabetes (*or anything else for that matter*), do not hesitate to address what they have said. Call out the comment they made, in an appropriate time and place, and explain how it affected you. You can reference the Americans with Disabilities Act, which is a helpful tool for understanding your rights. If you are experiencing emotional distress from this, it also may be a good idea to seek out help from a counselor or therapist who can help you work through the issue.

BURNOUT, BODY IMAGE, AND DEPRESSION

While on the surface, diabetes may seem to be just a physical disease, there are so many components that can impact a person's mental health and body image as well. One word you might hear come up when people talk about having diabetes is "burnout". So what does burnout actually mean? Diabetes burnout is a term for a state in which someone with diabetes grows tired of managing their condition, and as a result ignores parts of their management for a period of time. A person with diabetes burnout will show a decrease or decline in self-care behaviors such as checking blood sugar, adjusting insulin doses or changing insulin pump sites on schedule. A person with T1D in more severe burnout may even cancel medical appointments or run out of supplies. In addition, a person in diabetes burnout will likely also experience at least some of the following:

- Strong negative feelings about diabetes
(e.g. *frustration, anger, sadness, hopelessness*)
- Feeling controlled by diabetes such as feeling that diabetes limits them or prevents them from doing things or achieving certain goals, or is likely to do so in the future
- Frequent worry about long-term complications, but without motivation to try to prevent them and a sense that complications are inevitable
- Isolation, or feeling alone with diabetes
- A feeling that no matter how hard they try, they cannot manage their blood sugars

First things first, not only is burnout totally normal for a person with diabetes to experience, it should be expected at some point(s) during their life. Everyone with diabetes goes through periods of burnout to some degree. So if you have, or are, going through this yourself, remember this: you are not alone, and there are tons of other T1Ds who can relate. Having burnout doesn't make you "bad" at having diabetes, nor should you feel guilty about feeling this way. The important thing to do if you are starting to feel this way is to talk to someone. Sometimes talking to another T1D who has gone through burnout can be enough. Or sometimes, you may need to talk to your endocrinologist, CDE, a social worker, or counselor who has experience working with people with chronic illness. It's important to talk to someone before things get serious. It's tough, and not easy to admit sometimes. To find a counselor with experience in diabetes, check out the [ADA's database of T1D-knowledgeable mental health providers](#). To connect with other T1Ds who've been through burnout too, contact CDN or check out other diabetes communities, and don't be afraid to [ask for help](#).



With T1D comes a few other issues related to mental and emotional health. One of those is the visible scars including scar tissue that can develop from insulin injections, finger pricks, and pump injections over multiple months and years. Although modern technology has given us very small needles to help decrease the risk of scar tissue for both insulin and pump injections, scars can still develop on your skin. These can feel unattractive and discouraging for some people, but they don't have to be! They can also be seen as battle scars—representing your victory in your fight with diabetes. But if you want to get rid of them, there are multiple scar creams and similar products that you can find over-the-counter, or from a dermatologist, that may help.

One important tip for preventing scars and scar tissue is to rotate the site in which you inject—whether with a needle or a pump. Injecting in the same site over and over again will create fatty scar tissue (*lipohypertrophy*) under your skin much more quickly. Lipohypertrophy refers to the build up of fatty scar tissue under your skin, which can prevent the flow of insulin into and through your body. It can also cause the cannula on your pump to bend or kink, preventing the insulin from moving through it properly. If it becomes too severe, some people with diabetes have found that a plastic surgeon can help. If you find you are having challenges with this, chat with your doctor to get their advice on products and the steps they suggest you take.

Another area that can be challenging to handle is weight fluctuations that can come with diabetes. Before some individuals are diagnosed, they may lose quite a bit of weight, but after starting on insulin, they gain that weight back. Even if you didn't lose weight when you were diagnosed, fluctuations in weight should be expected, especially in the first year or so after your diagnosis. Not only is your body getting used to the new medications you are using, but when your blood sugar drops too low, you will have to eat something with sugar to raise it back up. Unfortunately, if you are experiencing a low blood sugar, you may have to eat something even if you're not hungry. In this case, choosing something like natural fruit juice can be a good option. Liquids move through your body the most quickly, so these will also raise your blood sugar the fastest. If you're looking for something more portable than a juice box, and non-perishable, many people find honey sticks to be helpful. Honey is full of natural sugars, and will quickly raise your blood sugar when it is low. There are always glucose tablets, too. You'll soon find that many people in the diabetes community have very strong opinions about the taste and texture of different brands. Check out [Glucolift](#) for starters!

If you want to avoid weight gain, try to make healthy decisions about what snacks you choose when you're low, as well as in your overall diet. Of course, exercising regularly helps—not only in keeping you in good physical and emotional shape, but also with your blood sugars, too! If you find that you are beginning to gain weight, particularly within the first year of your diagnosis, remember that it is normal and may be temporary. Initial weight gain early on can often be because you lost weight before you were diagnosed. With healthy diet and exercise decisions, your body will get used to the insulin you are taking, and the fluctuations can level out. If you see a significant fluctuation or change in your weight, don't be afraid to chat with your doctor about it to find out if there may be other factors involved. Most importantly, if you feel like your worries about weight gain are starting to impact your diabetes management, make sure to talk to a counselor before it becomes a problem!



HOW TO ADULT

Adulting is hard. Although it can be fun, there are also many practical aspects of it that are challenging, and diabetes doesn't make them any easier. Things like medical insurance, travelling, and the working world are complicated by diabetes, but not made impossible, especially if you have a few tips and tricks up your sleeve.

HEALTH INSURANCE

Let's just start by saying that health insurance isn't the easiest thing in the world. With lots of unfamiliar words like "co-pay", "deductible", and "out-of-pocket maximum", understanding how insurance works can seem impossible. And then there are many different types of medical insurance for your eyes, teeth, and all of the other issues that come up out of the blue, like diabetes. On top of different types of health insurance, there are also many insurers and different types of plans that they offer. You may get your insurance coverage through your job, your parents, or through the government. There's a lot to figure out, but hopefully this guide will help you get started.

Let's start with some of these confusing words. Of course, these are just short overviews, and you should definitely check out the information that is provided by your insurance company to make sure you understand the specifics of your plan.

- 1 Premium:** A premium is your monthly payment that, when you pay it, allows you to have insurance coverage. Whether you have diabetes or not, you have to pay a premium every month to keep your health insurance. However, this number can also fluctuate depending on what plan you are on. If you pay a high premium, your deductible and co-pay will often be lower, and vice versa (Pezalla, 2016).
- 2 Deductible:** A deductible is an annual payment limit, which you personally will be asked to "meet" by your insurance. Once the payments that you have made toward medical expenses meet this limit, your insurance coverage will "kick in" and begin to cover a certain amount or a percentage of your services. For example, your deductible may be \$1,000 for the year. Therefore, once the services you have paid out of your own pocket total \$1,000, your insurance will begin covering a portion of the rest of your medical bills for the remainder of the year (Pezalla, 2016).
- 3 Co-Insurance/Co-Pay:** A co-insurance or co-pay is a fixed amount or a percentage of the total cost of a service that you will be asked to cover, after your insurance has paid their part. This will occur after your deductible is met. Once your deductible is met, your insurance plan may offer to cover 80% of your services, for example, while you cover the other 20% (Pezalla, 2016).
- 4 Out-of-pocket-maximum:** An out-of-pocket-maximum is a fixed amount toward which any expenses you pay for count. Any amount you pay toward your deductible, your co-pays, or your premium counts toward the out-of-pocket-maximum total. Once you have reached this amount, your insurance will cover 100% of your necessary health care expenses after that (Pezalla, 2016).



Make sense? Hopefully we didn't confuse you more, but if you are, be sure to check out www.healthcare.gov/glossary for a full list of healthcare related terms and definitions.

There are also a few important things to know about health insurance that will help you navigate life with diabetes a little easier.

- 1 Remember that insurance is (mostly) good and on your side, even when it may not feel like it.** You need insurance (*for your own physical and financial health, and to abide by the law*). But sometimes, because of how confusing it can be, it doesn't necessarily feel like insurance companies actually want to help you. But you need it. So to begin, work with your insurance company, not against it. Make them part of your support team. Things will not always be perfect, but it will be better than constantly fighting them, and save you a lot of mental anguish. For better or for worse, this is the system you have to work within, and having health insurance is far better than not having it.
- 2 Don't be afraid to be persistent.** Most insurances will not cover every pump or CGM or even every glucose meter, and you can't always just switch insurance providers if your device isn't covered. If the insurance rejects something that you and your doctor both agree that you need, speak with your doctor and diabetes nurse educator to see what they can do to help you. It can sometimes take several tries, and several letters from your doctor for your insurance company to approve something. Sometimes, if your doctor's appeal fails, you may need to write your own—be persistent! Similarly, if you need more test strips per month than what the insurance companies wants to provide, don't be afraid to present your case and request more. If your doctor agrees that you need more, you can work together to convince the insurance company to cover them. You can also check out Beyond Type 1's article "[Insurance—Navigating Denials](#)" to get more advice.





3 Know your stuff. When it comes to insurance, there are so many details and caveats to your plan. When you are researching and evaluating plans, it can be difficult to understand every part of it. However, because you now have a chronic condition that can be quite expensive, it is absolutely vital that you give yourself enough time to read through the plans you are offered. If you are getting insurance through your parents (*because you can until you are 26*), or through a spouse, be sure to speak with them so you understand what the insurance plan covers and how you will cover the cost. Don't be afraid to ask questions. Insurance companies have representatives whose job it is to answer questions and help you understand how to navigate your plan. If you aren't sure if something is covered, or you have a question, call them up!

4 Let's be real: diabetes is expensive. Although insurance truly does help with that burden, diabetes affects every area of life, including finances. If you are still under your parents' roof and financial coverage, enjoy it while you can, but begin to talk with them about the cost of your supplies, doctor's appointments, and other expenses. While this may be shocking, it is a good idea to get a sense of what health care costs actually look like, especially if you've never been responsible for these expenses before. Ask your parents how they feel about you staying on their insurance until you are 26. Although you are able to do this, they may or may not be okay with it. This also may depend on if you are getting a job right after high school or college, or if you will be in a masters or doctorate degree program for many years.

If you are already on your own insurance and are financially independent from your parents, you probably have already seen just how expensive diabetes can be. It is overwhelming and incredibly frustrating, to say the least. You already have to deal with this challenging, life-long condition, and then you have to pay an arm and a leg for it, too. You didn't ask for it or do anything to deserve it, but it is here nonetheless. Now would be a good time to look at your monthly budget, or make one if you don't have one, and see how your diabetes supplies will fit into that. You may have to cut out some extra expenses in order to pay for your supplies, or move some expenses around. If budgeting and expenses are confusing for you, talk to a trusted family member or friend to ask for help, or even a financial advisor. Your school, employer, local community center, or bank might also have some resources for you that can help with this, such as classes or workshops that can help you learn how to budget and organize your finances.

5 Don't let the insurance and financial side of diabetes get you down. Before now, you may have never dealt with insurance. Maybe you've never been sick a day in your life, and now you have hospital or doctor bills to pay, and thinking about covering all of these new supplies is overwhelming. It is normal to feel this way. Take it one day at a time, and remember to lean on that support system for advice and encouragement. If the cost becomes too much of a burden to bear, many pharmaceutical companies have assistance programs which, if you qualify, can help you get your supplies at a discounted rate. Additionally, if you have hospital or doctor's bills that you are struggling to pay, try contacting their patient advocacy departments. Often, hospitals have financial assistance programs or will work with you to develop an income-based payment plan.

THE WORKING WORLD

If you aren't part of the "working world" yet, it may seem very intimidating, or it can be very exciting! Many times it is a little of both. You may be feeling some anxiety when you think about trying to deal with diabetes in the workplace, or wondering how diabetes may affect your professional career. Believe it or not, diabetes can actually be an asset in the workplace. While we can't cover everything in this section, if you're interested in learning more about employment and diabetes, check out the [College Diabetes Network Off to Work Guide](#).



If you already are working in a company, you should know that legally you are under no obligation to tell your employer that you have diabetes. Although we sincerely hope that they would not be discriminatory if you did reveal this, you do not have to tell them. They also cannot ask you if you have diabetes, or if you have any other medical condition for that matter. However, if you feel you have been discriminated against because of your diabetes, but you have not revealed it to them, proving that they have violated a discrimination law will be very difficult (*American Diabetes Association, 2014d*).

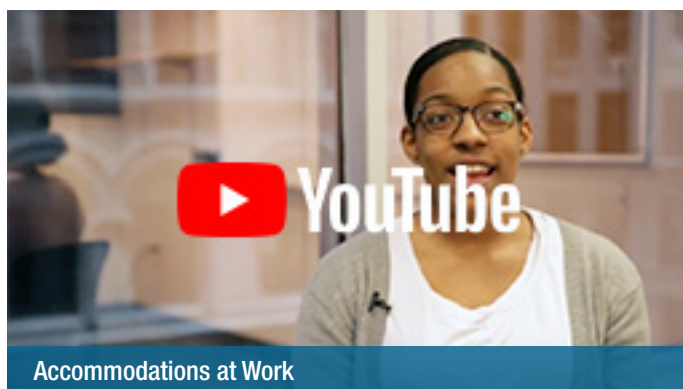
You certainly shouldn't be scared to tell your employer or colleagues. Many positive things can come from it. Telling your employer gives you the opportunity to ask for reasonable accommodations, if you feel that you need them. These could be things like needing to leave a meeting to administer insulin or check your blood sugar, or taking medical leave for doctor's appointments, etc. You also can use your employer or colleagues for more critical help in times when your blood sugar drops and you need assistance. By letting your employer and/or your colleagues know that you have diabetes, they will be better equipped to help you, should you need it.

If you are fearful or nervous to tell your employer, chat with your support system. Meet with people you know that have diabetes to discuss how they navigated choosing to disclose their diabetes to their employer, and how they handle diabetes on the job. Also, always keep in mind, if you are afraid for them to find out: do you really want to work for an employer who would discriminate against you for having diabetes anyways? If you feel you may have been treated unfairly because of diabetes, or you have questions about diabetes related discrimination, contact the American Diabetes Association Legal Advocacy team at 1-800-DIABETES or askada@diabetes.org.

If you are not worried about telling your employer, or maybe you already have, that's great! Feeling safe and comfortable around your employer is really important. Work with them to make sure you are on the same page about what kind of accommodations (*such as breaks to eat, drink, or check your blood sugar, or a place to rest while your blood sugar gets back in range, etc.*) you may need at work, and how they can help set you up for success at your job.

On a more hour-by-hour workplace note: things like insulin, pumps, CGMs, blood sugar checking, and food can sometimes feel like a nuisance. Maybe you're in the middle of a very important meeting or project, and your blood sugar suddenly drops. You're probably going to have to excuse yourself from the meeting to take care of your low. That can be awkward and frustrating. But unfortunately, it is part of the gig. You've got to do what you've got to do to take care of yourself well.

To avoid frustrating highs or lows before meetings, projects, or presentations, check your blood sugar about 30 minutes before. Depending on how your blood sugar reacts to stress or adrenaline, you may want to make sure your blood sugar is a little higher than normal, so that if it begins to drop, it won't drop too low. Don't be afraid to bring low snacks, glucose tablets or a drink into a meeting with you either, so you don't have to leave to get something.



You may also be in the middle of a meeting or presentation when your pump or CGM goes off. People might immediately look at you and wonder why you can't prevent it from making noises at the most inconvenient times. Sometimes you can't prevent a pump alarm or sudden low, but you can try to prepare before these meetings by checking your blood sugar and having low snacks on hand. Do what you can, but don't stress about it too much.

The "working world" can be a strange and scary place at first. Transitioning from college, where you make your own schedule—usually including late nights, long weekends with friends, and plenty of naps—to working all day (*or night*) long can be difficult. You have to meet a whole new set of people at work, sometimes in a new city, and spend quite a bit of time with them—juggling meetings, projects, events, and more to be successful. But with all of these things in mind, remember that you are a person beyond work, and beyond diabetes. Diabetes now plays a role in every aspect of your life, including your career. But as you deal with everything diabetes brings, don't forget to enjoy your career just as much as the rest of your life. It's important to find a balance between work, your social life and hobbies, and diabetes. Although it can be hard to find this balance, don't worry—with practice, you'll get there (*promise!*)

WHAT ARE MY RIGHTS?

Thanks to the Americans with Disability Act (ADA) (*not to be confused with the American Diabetes Association, which is also commonly referred to as the ADA*), as a person with diabetes, you have specific rights in certain places and situations of life. And no, this doesn't mean that you need to identify as "disabled" or feel that you're getting "special treatment" if you take advantage of the rights afforded to you by the ADA. It simply means that you have a chronic condition for which you may need certain accommodations, and this law gives you something to stand upon if/when others question it. The areas in which you would likely need this backing include: interviewing for jobs, the workplace, in school (*including during tests*), in public, with insurance, with law enforcement, and while driving. As you read about your rights, consider the responsibilities you now have as a person with diabetes, like communicating what you need, working with your doctor, and asking questions when you have them.

Let's begin with the job hunt. For high school and college students, let's be real: this can be pretty daunting. You know that after either high school or college, you'll have to get some kind of job and eventually

support yourself, but now you have to do that with diabetes. Maybe so far you've been able to manage tests, presentations, and even your part-time job since you've been diagnosed, but researching, networking, and interviewing to find your first "real job" while figuring out diabetes can be just a little bit (*or a lot*) tougher.

As we said before, one of the first things you should know is that you are not obligated to disclose that you have diabetes to anyone in your company, especially during the interview process (*American Diabetes Association, 2014b*). There are some exceptions for jobs that have specific physical requirements (*such as truck drivers, firefighters, etc.*), but in general, you get to decide if you want to share it. If you do share that you have diabetes, and feel that they have discriminated against you in the process of applying and interviewing for that job, there are legal advocates to help you navigate the process and understand your options. Lastly, it is important to remember that you cannot take any legal action against an employer for discriminating against you for your diabetes if you did not share that you have it. All of these legal issues can become a bit complicated, so check out the CDN [Off to Work Guide](#) or the American Diabetes Association's [Employment Discrimination](#) webpage for more detailed information.

Like we mentioned earlier, you also can ask for "reasonable accommodations" in your workplace, whether you were already working a job when you were diagnosed or when you start a new job. Asking for these accommodations, though, will of course require you to tell your employer that you have diabetes. These accommodations can be very simple, easy changes to make, such as being allowed to keep food or drink within a short distance of your workspace, or have breaks when necessary to administer insulin or use the restroom. It is important to keep in mind that even if some of your requests conflict with the company policy, you cannot be denied them unless they pose "undue hardship," meaning that they create excessive expense or difficulty on your employer (*American Diabetes Association, 2014d*). Getting these accommodations is usually simple, especially if your organization already has a process in place for it. If they do, be sure to follow that. If they don't, start by talking with your doctor to figure out what you would like to ask for, how you would like to ask for it, and getting documentation from your provider. Then consider writing out your requests, and schedule a meeting with your boss to discuss them.

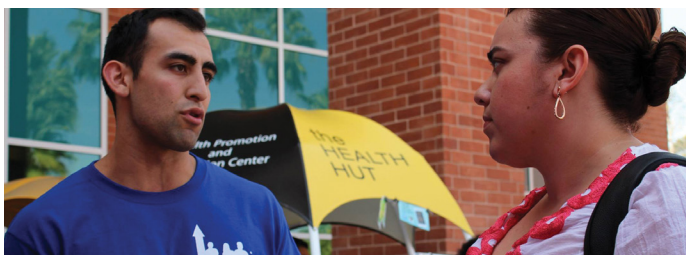
If you are a high school student, there are rights you have related to your diabetes, too. If you want to ensure that you have proper accommodations, you may consider getting what is informally called a "504 Plan." This name comes from Section 504 of the Rehabilitation Act of 1973, which states that any school receiving federal funding

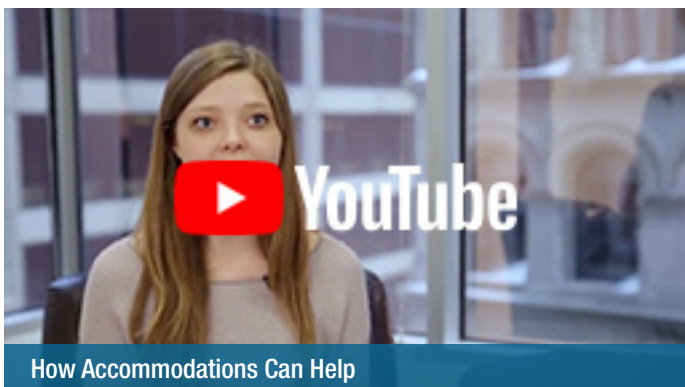
(*public schools*) must provide proper accommodations and assistance for students who have any disability (*this includes private schools, but their requirements are slightly different*) (*American Diabetes Association, 2016b*).

This plan outlines accommodations that you may need while you are in your classes or any school-related activity. These can include things like extra trips to the restroom, extra absences, adjustments to a testing environment or test time, or having the option to take a test at another time if your blood sugar is too high or low. Although you may be able to manage your diabetes without the help of nurses or a teacher, having a safety net to make sure that you will be able to get what you need is comforting. After all, it's better to have them and not need them, than need them and not have them. You can start by talking to your school guidance counselor to find out how to register for a 504 plan. The [Safe at School](#) page of the American Diabetes Association's website is also helpful to know your rights at school. If you're starting to think about or getting ready for college, you should also check out CDN's [Off to College](#) booklet, to learn about preparing for the transition to college, and life on campus. Pro- tip: there is a parent version of the [Off to College](#) booklet, too!

If you are 18 years of age or older, you are legally considered an adult and you get to make the decision whether or not you would like to register for accommodations at your college. Although there is no requirement to register for accommodations, they are free, simple, and extremely helpful in providing a safety net should any issues arise in your classes. Although you usually don't have a limited number of passes to leave the class, or other rules like you had in high school, there can be some very strict requirements around attendance, testing, and assignments. Unfortunately, not all professors are as understanding as you might hope. Some professors are very supportive and easy-going, and will understand when you are late to class because of a low blood sugar, or why you can't take a test when it is given because your blood sugar is super high. But for the professors who aren't so empathetic in these situations, registering for accommodations helps you navigate what to do if they try to penalize you for the consequences of a diabetes-related situation. As the old saying goes, "It's better to have it and not need it, than need it and not have it!"

The first step to register for accommodations is usually to set up a meeting with a staff member at your college's Disability Services office (*which also can be called Accessibility office, or another similar name*). Although your school may have a slightly different process, usually you will need to provide documentation from your doctor explaining your diagnosis and what types of accommodations they recommend or you'd like to request. You will take that documentation to your meeting with your school's Disability Services office, and work with the representative to figure out what types of accommodations might be needed and notify your professors explaining what you need in various situations. There are lots of types of accommodations you may need depending on your personal needs and situation, however, some common ones for students with diabetes are flexible attendance policies, the ability to reschedule tests or exams in the event of a high or low blood sugar, the ability to have diabetes supplies in classes or exams, housing accommodations,





and priority registration to allow you to fit diabetes into your hectic college schedule. Check out the [CDN website](#) for more info!

Pro tip: Don't take a test when you're too low or high. Scientific studies completed by the American Diabetes Association have proved that you won't perform at your best if you aren't in range (*Rosenthal et al., 2001; Cox et al., 2005*). In our experience, it usually doesn't turn out very well. If you are too low or high before a test, you can approach your professor (*by email, phone, or in person*) and let them know about your situation. If you have given them the letter from the Disability Services office stating your necessary accommodations, they are obligated to follow those requirements and allow you to take the test at a different time. This is when having those accommodations can really come in handy—just in case you have a professor who is less than understanding.

In addition to work and school, driving is a key part of life that makes these and many other activities possible. You can certainly drive with diabetes very easily and safely, but again, there are many situations that can occur where you need to be aware of your rights and responsibilities. Every state has varying policies and requirements for maintaining your license while living with diabetes, but there are a few important points to keep in mind. First, always check your blood sugar before you drive. Whether you are driving one mile or one hundred, just check it. Second, if you are driving many miles, especially by yourself, plan some extra time to pull over and check it throughout the drive. If you have a CGM, this process can be a lot easier. Third, always have low snacks or a fast-carb drink within reach!

In regards to actually renewing your license, sometimes your state may ask questions directly like “Do you have diabetes?” or indirectly, like “Do you have any physical or mental condition?” As a result of your answer to these questions, you may be required to get extra documentation from your doctor or take an extra medical exam. It's an extra step to deal with, but it keeps you and others around you safe. Check out ADA's [“Driver's License”](#) page for more information on your specific state laws (*American Diabetes Association, 2014a*).

The ADA also helps advocate for individuals who are in contact with law enforcement, either short- or long-term, to ensure that they receive the care they are due by the law. Although we hope that you and your loved ones will not need this information, it is always helpful to know your rights and resources. Check out the [“Law Enforcement”](#) page of ADA's website for more information on this topic (*American Diabetes Association, 2016a*).

TRAVELING WITH DIABETES

There really are so many incredible people and places in the world to see, and so many adventures to be experienced. Having diabetes should never stop you from going anywhere or doing anything you want to do, especially when it comes to traveling. Just like in other areas of life, there are just a few extra steps that you may need to take to prepare for your journey. Here are a few practical tips for how you can prepare yourself to take off on your next adventure. You can also refer to this handy guide for [flying with T1D](#) for more information. Pro-tip: Check out the [CDN blog](#) for tons of stories about other young adult's experiences studying abroad or traveling with diabetes!

- 1 Create your plan.** Have an idea of what you will be doing and where you will be going throughout your trip. Although you can certainly still be spontaneous with diabetes, it is helpful to have a general idea of what is going to happen. Planning for things like keeping insulin cool, having access to low snacks, and also getting plenty of rest are important when you are traveling. If you are traveling on your own, you might also consider having family or friends who will check in with you on a regular basis so that you can let them know how you are doing.



CDN TIP

- ✓ **If you are in a non-English speaking country, bring an index card and write “I have diabetes, I need sugar” or “I have diabetes, I need help” in the local language and keep it in your pocket. This can help you get the help you need in case of an emergency.**

- 2 Have your supplies ready.** As you probably have already realized, there is a lot of “stuff” associated with diabetes. Test strips, your meter, insulin, syringes, alcohol wipes, needles, pump supplies, batteries, low snacks, lancets, and ketone test strips. The list seems much too long. Nonetheless, these are all things that you need to take good care of yourself. And this doesn't change when you travel! You still need all of these supplies no matter where you go or what you do. Before you leave, make a list of all of the supplies you would normally use during the time frame for which you will be traveling. Then, triple it. Tripling the number of supplies you need usually gives you plenty in case of an emergency. If you are on an insulin pump, it is also a good idea to have backup insulin pens or syringes, including a long-acting/basal insulin (*i.e. Lantus, Basalglar or Levemir*) just in case. If you are going on a long trip or studying abroad, you will want to talk to your doctor and/or pharmacist about your plans to help you get plenty of extra supplies for your trip.

Once you have your list of supplies, make sure you have an organized way to pack them for your travel. Remember that your supplies should always be packed in your carry-on luggage if you are flying. If you are traveling with friends or family, it may even be helpful to put some of your supplies into another carry-on bag, just in case you lose your bag or encounter any other worst case scenarios. Pro-tip: If you're looking for a way to keep your insulin cool on the flight or while traveling, Frio packs or an insulated lunch box can be a lifesaver!



Dealing with Blood Sugar While Traveling

Because you will be bringing liquids and needles on the plane with you, it is always a good idea to have a doctor's note (just in case!) along with any diabetes medication(s) or supplies that have your name and prescription for when you go through airport security. While we're on the topic of airport security, it is also good to note that if you have an insulin pump or CGM, you should notify the TSA agent as you walk through the line. They may ask to pat you down (usually not too big of a deal), or they swab your hands with a small device. As diabetes and its related technology have become more common, TSA representatives have become more comfortable with it, so the process is usually quick and simple (*TSA pre-check can make the process even easier!*). If you have trouble in the process, this is when a note from your doctor and your prescription information will come in handy. Be sure to have the letter in a place you can access easily in case the agent needs more information. If traveling abroad, make sure this letter is written in the language of the country you are visiting.

- 3 **Talk with your doctor.** Before traveling, especially out of the country, your doctor and diabetes educator can play a key role in helping you prepare. Namely, they provide you with necessary documentation and resources that you cannot get elsewhere, like when you're trying to gather extra supplies for your trip and your insurance won't cover more until a specific time period is up (*but that time is after you leave*). Your doctor may be able to work with your insurance company to explain the situation and help you get more supplies (*this is sometimes referred to as a 'vacation override'*). They also usually have quite a few samples on hand that they can give you.



CDN TIP

- ✓ **What happens if you run out of insulin in another country?** In the United States, your doctor can call in a prescription, but outside of the country your prescriptions won't be valid. If you are in need of emergency insulin, the best thing to do is go to a pharmacy. They can send you to a local doctor for a prescription if they can't just sell you insulin. If you're on a pump, be prepared to go back to injections if needed.

Don't forget to ask them for a letter for airport security, or any other situation, where you may be questioned about diabetes and why you need the supplies. You can also bring a copy of your travel itinerary and time zone changes (*if any*) to your CDE or endo to have them help you figure out any adjustments you may need to make. They can help you plan ahead and think through any details you might not have considered.

- 4 **Get a medical ID.** If you don't already have a medical ID, you should consider getting one before you embark on your adventure. No matter how big or small it may seem to you, a medical ID can be critical in an emergency. If your blood sugar drops, and no one is around to explain to responders that you have diabetes, a medical ID bracelet will help them have a better understanding of how to treat you. And yes, they can be fashionable. Go online and check out all of the awesome websites (*such as [Road ID](#) or [Lauren's Hope](#)*) that sell IDs like bracelets, necklaces, keychains, and all kinds of other things. Remember, if you're traveling abroad, make sure the medical ID also includes the language of the country or countries you are traveling in!
- 5 **Expect the unexpected.** When you travel anywhere, sometimes even just down the street, anything can happen. Your blood sugar will probably be pretty irregular en-route to your destination, and when you first arrive you will probably be eating different foods at different times than your body is used to. There may be a significant time change where you're traveling, so getting enough sleep may be difficult at first, but it is vital to keep your blood sugar regular. It's a good idea to check your blood sugar more often while you're traveling to stay on top of these changes.
- 6 **Have the time of your life!** With all of the extra preparation it takes to go on an adventure with diabetes, and all of the crazy and frustrating things that you might have to deal with along the way, don't forget to enjoy it! Whether you're going on a backpacking adventure through Europe by yourself, hiking the Appalachian Mountains with your significant other, or hanging out in Hawaii with your family, enjoy every second of it. Smile and keep your head up through the challenges, and experience each minute of your adventure to the fullest. Don't forget to lean on your support system during this time, especially if you are far away or gone for a long time.



Traveling Tips for Newly Diagnosed T1Ds



**RESEARCH AND
TECHNOLOGY**

Over the past 20–30 years, diabetes technology has advanced drastically. Believe it or not, blood sugar checks used to be done only once every few months in the doctor's office, kind of like how your A1c is checked now. With many years of research and hard work, we now have meters at our fingertips (*pun intended*) that give us information about our blood sugar, which can then be used to make better self-management decisions. Similarly, other devices like pumps, CGMs, and even an artificial pancreas are continually being developed to help people with diabetes live easier lives. Whatever diabetes management tools you're using right now – whether you're on shots, pens, a pump, or using a CGM—none of these methods are a lifelong commitment! You are allowed to switch back and forth if you need a change or if something starts to not work well for you. Do what works best for you!

TO PUMP OR NOT TO PUMP

To pump or not to pump? Insulin pumps are an absolutely phenomenal invention that can significantly improve life with diabetes by making many daily tasks faster and simpler. However, there are many factors that go into deciding if you want to get a pump, and they aren't necessarily for everyone. Whether this question has been on your mind lately or if it has never even crossed your mind, it is always helpful to know the facts. You should know that the goal of this section is not to persuade you to get a pump. We also have chosen not to share specifics about the pumps on the market because there are many options, and we want you to make your own decision about what you want to use to manage your diabetes. Talk to your doctor, and check out [DiabetesMine](#) for helpful information about the latest updates in diabetes technology.

Let's begin by affirming that insulin shots, either with pens or syringes, are not inferior to an insulin pump. Although shots can be looked upon negatively, you can absolutely manage your diabetes very well through shots. Many people that have experienced both a pump and shots will tell you that shots can feel more “freeing” than a pump. You don't have to worry about something being attached to you. You don't have anything beeping or vibrating at you to wake you up in the middle of the night, or to interrupt a meeting or conversation you are in. You also don't have to worry about figuring out how to use all of the features, and then worrying about accidentally doing something wrong. You can swim, shower, and exercise without worry of breaking your pump, or it getting in the way of what you're doing. If you have a routine with your shots, and you are managing your diabetes well without a pump, keep doing what you are doing! Don't fix what isn't broken.



However, if you have been considering trying out a pump, or maybe you have already done a trial of one you are interested in, let's chat about a few of the perks and problems associated with a pump. One of the most commonly desired perks of a pump is fewer needle sticks. With most pumps, you need to change the site about every 3 days (*72 hours*), which means only one needle stick every 3 days to give yourself insulin, instead of multiple per day. Usually this makes life a little less physically painful, as well as more convenient. You probably have gotten used to shots at this point, and eventually will be able to do them almost blindfolded. However, doing them in public, at a meal, in the middle of a meeting, in a class, or in many other circumstances, can just be annoying and inconvenient. A pump eliminates the hassle of giving yourself a shot every time you need insulin just by pressing a few buttons.

Additionally, all of the buttons you press on your pump hold valuable information about how you are managing diabetes. Usually with these buttons you are able to enter your blood sugar, how many carbs you are eating, and how much insulin you choose to give yourself. When you input your blood sugar and the number of carbs you need to bolus for, the amount of insulin will automatically be calculated for you. This isn't always a perfect number—the pump doesn't know if you're going to exercise after your meal or if you have been running low all day—but it does help you dose more accurately for the food you are eating. And because it stores your blood sugars, and keeps track of the carbs you are eating and the insulin you dose, you and your doctor can see those records over time and understand if what you are doing is effective or not. Sometimes, instead of putting your blood sugar in manually, your pump can also sync with your meter and the numbers will automatically transfer over. Not only can a pump make life a little more convenient, but for some people it can also help to improve your diabetes management.





CHOOSING THE RIGHT METER

Meters—we all (*who have diabetes*) need them. As we talked about earlier, knowing your blood sugar is vital in managing your diabetes well. Your meter is a key tool to know if what you are doing—exercising, eating, and dosing insulin—is effective or not. Blood glucose meters are what provide us with this valuable information.

At the beginning of this section, we also talked about how much blood glucose meters have advanced in the last 20–30 years. Not very long ago, meters that patients themselves could use to check their blood sugar at home, or anywhere else they wanted, were unheard of. Now we have meters that we can use anywhere and at any time we need. They are usually very small and simple to figure out. They keep records of all of your blood sugars, and usually have some kind of software that can be used to display trends and averages for you and your doctor. Some have a bolus calculator built in, which is very helpful if you are on insulin shots. Many of the lancets are relatively painless, especially compared to how they used to be. Speaking of lancets, the meter you are prescribed by your doctor will likely come with a specific lancing device (*what you use to prick your finger*). Your doctor should also prescribe you lancets to use in the lancing device. The clinical recommendation that your doctor or the hospital may have explained for lancing is to change your lancet every time you check your blood sugar. However, if you've talked to anyone with diabetes or done a little bit of research, you may have found that this usually isn't the case. We suggest that you give yourself a "milestone" to aim for when you change it. For example, you can change your lancet every time you change your pump. Be sure to talk to your doctor about this, but set a realistic expectation for yourself.

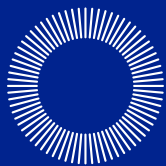
When you were diagnosed your doctor probably gave you a prescription for a specific meter without much discussion as to what kind of meter you wanted. At the time, you probably wouldn't have had much of an idea as to what a meter does, let alone what kind of features and gadgets to look for in one. And unfortunately, depending on your doctor, even long after you are diagnosed, they may not be very open to discussing a new meter. Because your doctor helps interpret your blood sugars, they (*as well as nurses you may see during your appointment*) need to have a basic understanding of how the meter works. So they may be resistant to you getting a meter that they are not familiar with. However, if you truly do want a specific meter, you certainly can try to convince them that the one you want is right for you. Your doctor has to write you a prescription for the meter, test strips, and lancets that you need, so you'll need to make sure they're on board with what you want. Keep in mind that depending on your health insurance plan, you may not have many (*if any*) choices as to your specific meter, so check with your insurance company first before you start exploring other options.

So what do you actually look for in a meter? Do you stick with what your doctor gave you and move on? Or do you research and find another one that may be better for you? Like we mentioned earlier—don't fix what isn't broken! If the meter you have now is working well, you understand how to use it, and you are content with what it does, stick with it! Sometimes changing and figuring out how to use a new meter is more trouble than its worth.

Lastly, a pump can also be freeing in some ways. You do have to have it attached to you basically 24/7—that can get a little frustrating at times (*though you can take it off for short periods of time*). But it does give you freedom to live your life and manage your diabetes as you want. If you want a snack at 10 P.M. and don't want to give yourself a shot, which with many pens may only give you full unit options, you can give yourself insulin down to the .05 or .1 units. If you want to exercise and not worry about your blood sugar dropping too low, you can suspend or decrease your basal rate during activity. Overall, you have more control over the amount of insulin you are able to give yourself and the time at which you do so. This allows you to worry less about your numbers, and go on living your life.

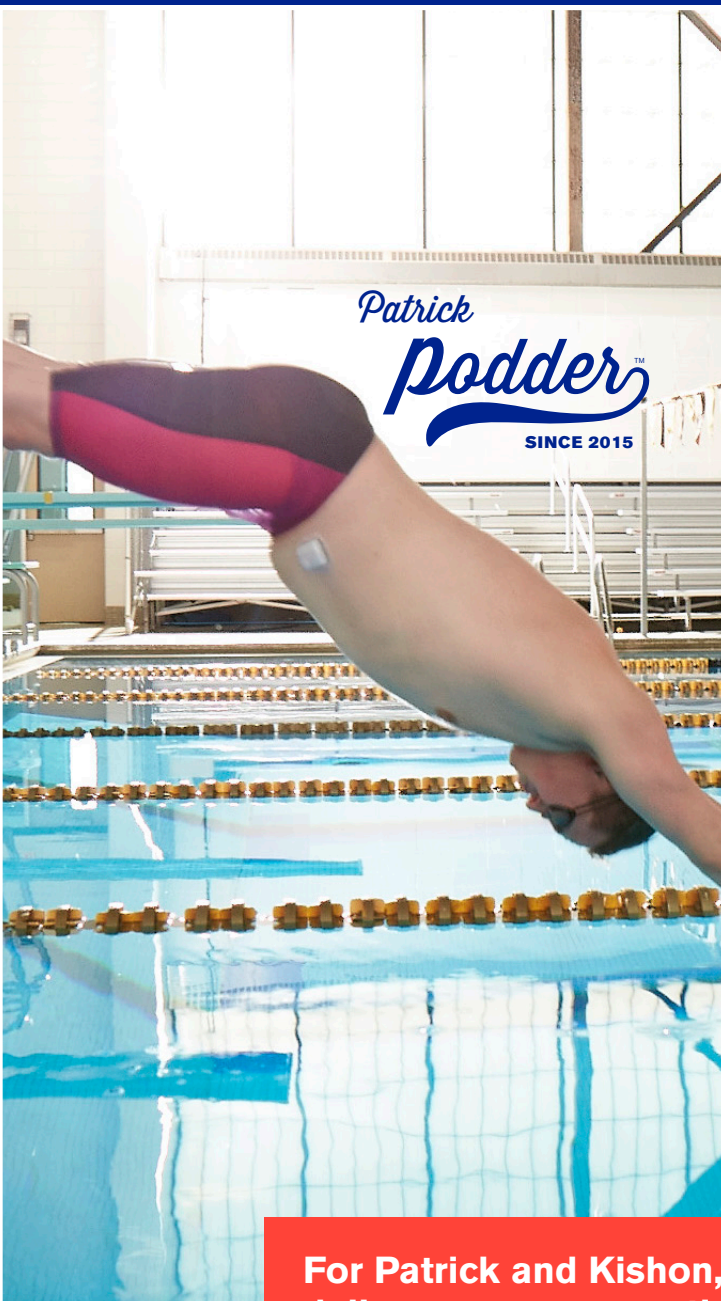
Choosing whether or not you want a pump is not always an easy decision. Your insurance company may not cover a pump until you have been on shots for a certain period of time. In reality, pumps are usually more expensive than shots, so that can add an extra complication to the decision, too. If you are still on your parents' medical insurance, it's a good idea to chat with them about what your insurance company will cover. Talk to your support network and your doctor—including insulin pump representatives from the device company—to see what they suggest. Do your own research as well to see the full list of options, and then bring your thoughts to the discussion with your doctor. Work with them to make your decision—including whether or not you want a pump, and if so, which kind. It may also be helpful to talk with other people with T1D who are on a pump about what they like or don't like about their specific pump model.

In addition to insurance and financial issues, you should consider how a pump will fit into your everyday life. Things like what kinds of clothes you normally wear, what types of sports or activities you are involved in, and your own body image desires all play a part in if you might want a pump or not, and what kind. As you are researching and learning about various pump options, ask a company you are interested in if they will send you a sample pump to test out for a few weeks. This may help you see how it fits into your daily life, and if you want to use it "full-time." Take your time in making a decision because most insurance companies will only cover a new pump every 4–5 years, and be sure to go with what you think will be best for you!



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However, if you are not content with your current meter—maybe it isn't really helping you manage your diabetes better, maybe the strips are too expensive, or maybe there are certain features that frustrate you—then it could be time to start looking into other options. A few important things to look for in a meter are accuracy, ease-of-use, and opportunities to translate your numbers into more valuable information. Accuracy is critical in a meter because you give yourself insulin based on the numbers your meter tells you, and if it's not accurate, you could be giving yourself too much or too little insulin. On this note, you also should know that all meters have a standard of accuracy of blood sugar readings that they must meet for FDA regulations. While you may notice that if you test your blood sugar three times in a row you get three different numbers, they should all be in generally the same range, thus meeting the FDA accuracy standards. Having a meter that is easy to use is also important because diabetes is complex enough; you don't need to spend your time figuring out how to work a complicated meter. When you were diagnosed, hopefully your doctor or a diabetes educator taught you how to use your meter. If they didn't, reach out to them and ask for a short training (*sometimes there are pretty great things that it can do that you don't know unless someone trains you*).

Lastly, having opportunities to actually use your numbers to help you make decisions to improve how you manage diabetes is also very important. In just one day of life with diabetes, you accumulate immense amounts of information, including your blood sugar levels, the carbs you are eating, and the insulin you give yourself. It is incredibly difficult, even after having diabetes for a while, to take that information and learn something from it. Many meters now have software that come with it to transfer the data to a computer or phone and view all of the numbers in a more helpful way—like a graph or a chart of averages. For example, you can see your numbers on a daily basis in a graph and see if you are trending high or low at a certain time of the day. If you tend to be waking up low in the morning, for instance, you may need to make an adjustment to your insulin.

Overall, you should make sure the meter you are using is right for you. Sure, you can make any meter “work” as you manage your diabetes, but not all meters (*or lancets!*) are the same. Spend some time researching the myriad of meters that are available to you, work with your doctor to figure out what your insurance company will (*or won't*) cover, and then make sure you know how to use it well. It will take time to become comfortable with it and all of its features, but eventually you will be a pro.

WHAT ABOUT A CGM?

Maybe you've heard of this thing—it's commonly referred to as a CGM, or a continuous glucose monitor. If you're thinking, “A continuous gluco-what?!” then don't fear—it's not as complicated as it sounds. In layman's terms, it is a device that measures your blood sugar about every five minutes. It is most useful when attached to your body 24 hours a day, 7 days a week, and the sensor needs to be changed about once a week. Unlike a pump, you can disconnect from your CGM occasionally since it is not administering insulin.

In many cases, the CGM information is viewable on your smartphone, and may be shared remotely with a friend, roommate, relative or person(s) of your choosing. You can also use a CGM with or without a pump. Now, you may be thinking, “Why would I ever want something that tells me what my blood sugar is every five minutes?” Maybe it's the immense amount of information that is overwhelming, or the fact that you'd have an extra device stuck to you constantly. Those are definitely valid considerations to think about before getting a CGM. However, there are so many great things about having a CGM that are also worth considering.

One of the most important benefits to having a CGM is that it can alert you when your blood sugar spikes too high or drops too low. Hopefully, you can feel when your blood sugar goes too high or low, and usually there are a few signs that indicate to you which end of the spectrum your blood sugar is on. However, a CGM can alert you in real time as soon as you are above or below a certain threshold. This can come in especially handy when you are sleeping or if you are drinking alcohol. Having a CGM that will beep loudly if you spike or drop out of range as you sleep can be especially helpful for people who cannot feel their lows when they sleep. Also, you will actually be able to tell if you are trending high or low, versus a meter that can only tell you if you are high or low at one point in the day. That way, if you are trending one way or the other, you can do what you need to do to address the issue before it becomes dangerous and interferes with your life. As we will discuss later, alcohol can do some wacky things to your blood sugar, so having a CGM will help you keep a closer eye on what it is doing as you drink, and the data sharing capability provides an option for a friend, roommate or loved one to get alerts as well.

Another benefit to having a CGM is that it allows you to check your blood sugar a little bit less. If you want to know what your blood sugar is, you don't always have to prick your finger and mess with getting a test strip out to find out what it is. Instead, all you would need to do is





check the receiver, or “reader” that comes with your CGM (*pro-tip: don't lose it*), which displays your blood sugar. It can come in handy to be able to simply glance at a screen to see what your blood sugar is, especially if you're in a meeting, playing a sport, or needing a break from pricking your finger. Some CGMs even allow you to read your blood sugar directly from your pump or your smartphone!

In addition to the ease and speed of a CGM, it also helps you and your doctor gain far more insight into your diabetes management. Meters are improving in regard to the information they can give you, but in order to get this information, you have to intentionally take action by checking. A CGM is always on you and always reading your blood sugar. You don't need to choose whether your blood sugar is recorded (*for better or worse*). CGMs allow you and your doctor to see very detailed trends of what your blood sugar is doing hour-to-hour and day-to-day, and make adjustments based on those trends. As scary as it can be to have so much information (*and for your doctor to have all that information*), it actually can be incredibly helpful in figuring out problematic times of the day, and other issues you may be having that you didn't even realize.

Keep in mind, though, a CGM, like a pump, is not for everyone. You may not want an extra device on you, or you may feel you are managing your diabetes well enough without one. Maybe you are just trying to figure out how to work your meter and carb count, and just aren't ready for a CGM yet. Maybe a CGM would cause you to become overly obsessive about your blood sugar, or give you anxiety and “information overload.” As with any diabetes technology, it is important to do some research on your options, and talk to your doctor. Take some time to think about the pros and cons, how it would fit into your lifestyle, and if you can afford it. You can usually do a trial for a week or two to see if you like it, and then decide if you want one “full-time.”



WHAT'S NEXT? HOW TO GET INVOLVED

There is a ton of research being done into not just a cure for diabetes, but better management tools, understanding what causes or triggers diabetes, and more. Progress is being made every day, and life with diabetes will only get better from here.

Once you've been around the diabetes scene for a little longer, you'll probably hear that a cure is coming “any day now”. While we all obviously want a cure (*now please?!*), we think it's important to manage expectations, take every day one step at a time, and focus on all of the advances in technology and medicine that have happened (*even just in the past 10–20 years!*) that make living with diabetes easier than it ever has been.

One perk to having diabetes, is that you can now have a direct impact on the research and advancements being made every day. Researchers are working hard to develop new drugs, technologies, and yes, even that elusive cure. They need people like you to help them get there! Not only do you get to be directly involved in some of the latest research and advancements in the field, but hey, you may even get paid (*and we all know diabetes ain't cheap!*). To find research opportunities, check out [Glu](#), [Antidote](#), [TrialNet](#), or [ClinicalTrials.gov](#), ask your endocrinologist, or see if there are any opportunities through local colleges, universities, or hospitals in your area!

Curious about some of the advancements being made? Read on! But keep in mind, as research advances quickly, this information may become out of date! Do some Googling to find out what the latest updates are.

Artificial Pancreas

One of the most exciting innovations in the diabetes sphere today is the “artificial pancreas”, or automated insulin delivery system. This is basically a device that will mimic the functioning of a healthy pancreas, making diabetes management MUCH easier for a person with T1D, and eliminating a large number of the decisions you need to make on a day-to-day basis.

The FDA describes the artificial pancreas as a “system of devices that closely mimics the glucose regulating function of a healthy pancreas.” This usually consists of three different devices—a CGM, insulin pump, and glucose meter, that all work together via a computer-controlled algorithm to function like a normal pancreas to keep glucose in range. Sometimes an artificial pancreas device system is referred to as a closed-loop system, an automated insulin delivery system, or an autonomous system for glycemic control (*FDA*).

This system not only monitors blood sugar levels in the body, but can also automatically adjust how much insulin you are receiving to reduce high blood sugars, and significantly minimize the occurrence of low blood sugars—all with very little action needed by the person with T1D!

Currently, “the FDA is collaborating with diabetes patient groups, diabetes care providers, medical device manufacturers, researchers, and academic investigators to foster innovation by clarifying agency expectations for clinical studies and product approvals.” Some systems have recently received FDA approval and are available on the market with more likely to be available soon as well. So do some research and see what's out there!

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BRIEF SAFETY STATEMENT The Dexcom G5 Mobile Continuous Glucose Monitoring (CGM) System ("G5") is a glucose monitoring system indicated for the management of diabetes in persons age 2 years and older. The G5 is designed to replace fingerstick blood glucose testing for diabetes treatment decisions. The G5 also aids in the detection of episodes of hyperglycemia and hypoglycemia. The G5 is intended for single patient use and requires a prescription. **CONTRAINDICATIONS** Do not rely on the G5 CGM data if you have recently taken acetaminophen. Remove the G5 (sensor, transmitter, and receiver) before Magnetic Resonance Imaging (MRI), Computed Tomography (CT) scan, or high-frequency electrical heat (diathermy) treatment. The G5 is MR Unsafe. Do not bring any portion of the G5 into the MRI environment. **WARNING** CGM-based diabetes treatment decisions are only approved with the G5, not previous generations of Dexcom CGM systems. Calibrate at least once every 12 hours using a fingerstick. If your G5 does not display a sensor glucose reading and an arrow, or if you are getting inaccurate or inconsistent readings, take a fingerstick. If your glucose readings and alerts do not match your symptoms or expectations, take a fingerstick to confirm. Failure to do so may lead to hyperglycemia or hypoglycemia. The G5 is not approved for use in pregnant women, persons on dialysis or critically ill persons. If a sensor breaks and no portion of it is visible above the skin, do not attempt to remove it. Seek professional medical help if you have infection or inflammation on or near the sensor insertion point. Report broken sensors to Dexcom Technical Support. Sensor placement is not approved for sites other than under the skin of the belly (ages 2 years and older) or upper buttocks (ages 2-17 years). To "share" data, you need an internet connection and a separate compatible smart device running the Dexcom Follow App. Contact Dexcom Toll Free at 877-339-2664 or www.dexcom.com for detailed indications for use and safety information. ©2017 Dexcom Inc. All Rights Reserved LBL015595 Rev001



TOUCHY TOPICS

Although you were just recently diagnosed, you've probably already experienced some touchy topics related to life with diabetes. Some of these topics are ones you have probably had questions about since you were diagnosed, but were way too awkward to talk about with your doctor, diabetes educator, or parents. Don't worry—we'll cover what we can, and if you still have questions, we'll give you some other resources to learn more.

DATING AND DIABETES

Dating can be awkward at any age and stage of life, whether you're still in high school or you've been out in the workforce for a few years. There is the weird stage of trying to figure out if the other person likes you before making any kind of move, and then there is the decision of what move to make and when exactly is the best time. Then there's all the stuff past that—when to say “I love you”, introducing them to your friends and family, and so much more. Dating with diabetes can just throw you yet another curveball.

Maybe you were already dating someone when you were diagnosed, or maybe you were in the process of trying to begin a relationship with someone when you were diagnosed. Maybe you weren't in a relationship, and you aren't looking to be in one. Wherever you're at, know that many of the points we will share can apply now, or may apply in the future.

[How do you tell someone](#) that you have diabetes, let alone explain to them what it is? What if they are squeamish and can't handle blood or needles? What if they don't understand or don't care to understand what diabetes is, and what you will need from them? What if they don't want to be in a relationship with you because you have diabetes? What if their parents don't want them to be in a relationship with you because of diabetes?

All of those are big “what ifs,” but they're important ones. The person you date may be completely comfortable with diabetes and have no issues with it, but it is likely that they will not know a lot about it, and may even be uncomfortable at first. Above all else: if someone doesn't want to date you because you have diabetes, you probably don't want to date them anyway. How someone reacts to your diabetes can be a key indicator as to whether they are the right one for you. A good partner will care about you and your health, and support you in whatever life might throw at you.



If you begin dating someone new, how you tell them about diabetes is up to you, but it is a good idea to tell them sooner rather than later. Many people have found that being upfront and honest, even in one of the first interactions or dates, and keeping it casual, can be helpful (*Heifner, 2016*). Something as simple as pulling out your testing kit during a date can be a good icebreaker. If you are calm and don't make it a big deal, it's likely that they won't either. If your partner's parents freak out, remember you are not dating their parents.

Once your potential significant other learns that you have diabetes, they may have some questions. Allowing them to ask questions is important because it can help them understand what you go through and how they can help you. It will take some time for them to understand diabetes on a deeper level, but make sure they know they can ask you questions without feeling silly or annoying. If they aren't comfortable with needles and blood, talk to them about why. Maybe they had a bad experience as a child and now they're a little traumatized. Offer to show them your lancet, shots, or pump, and that may help put them at ease. Over time, you might be surprised by how desensitized they will become to seeing you prick your finger, give yourself a shot, or change your pump site. But it might take longer for some than others.

If you were already dating someone or were even married when you were diagnosed, make sure to include your significant other in the learning process you are going through. Remember that not everyone will be as forthcoming in asking questions or learning more about diabetes because they want to respect you and your personal space. If you want them to learn though, invite them to ask questions about what you are going through as you are experiencing it. Help them understand what a high or low blood sugar feels like and what the symptoms are, and how they can help you in those times. Teach them what carb counting is and let them know that you will have low blood sugar snacks on hand that you just shouldn't share.

Eventually you will come to the touchy (*literally and figuratively*) subject of sex and diabetes. Whether you are having sex with your significant other now or not, it's helpful to know how to navigate that step in the relationship while living with diabetes. One of the most important things to keep in mind during sex is your blood sugar levels. Sex usually lowers your blood sugar, but sometimes it's tough to feel that when you're in the heat of the moment (*Baldwin, 2016*). Check your blood sugar before, during (*if you feel like you need to*), and after you have sex, and always have plenty of snacks within arm's reach in case your blood sugar drops (*Beyond Type 1, 2016d*). Sex, like any other physical activity, is a form of exercise, and just like you would plan for other types of exercise you are going to do, the same goes for sex. Of course, it's important to talk with your significant other about what you will need from them in case your blood sugar drops during sex: things like help getting a snack if you're low, a signal or word if you need to take a break, patience while you recover from a low, and any other boundaries and needs that you may have. It is never a good idea to “power through” a low during sex. Although neither you nor your partner want to have a steamy situation come to a screeching halt because your blood sugar has dropped, it will likely only continue to drop and eventually lead to worse consequences if you do not address it quickly.



Just like in other situations and relationships, communication is key. If you communicate what you need, want, and expect from one another, some of the challenges of sex with diabetes may not be such a big deal. Over time, your significant other will learn more about you and your diabetes, what you need and want from them in helping to manage your diabetes, and they may even begin to teach others about it, too! Check out Beyond Type 1's [Boyfriend/Girlfriend T1D Guidebook](#) if you need another resource to learn more about sex and dating with diabetes.

DRINKING, DRUGS, AND DIABETES

Like we discussed earlier, almost anything and everything affects your blood sugar—including drinking and drugs. Drinks with lots of sugar in them will certainly affect your blood sugar, but nothing will do so quite like alcohol. Not only do most alcoholic drinks have lots of carbs in them, but they also have (wait for it).... alcohol. And boy, does it do some crazy things to your blood sugar if you aren't careful. But yes, you can drink with diabetes safely if you choose to do so! Keep these things in mind, though, when you drink, and you will be much better off in the short- and long-term.

1 Keep a close eye on your blood sugar. Be sure to check it before, during, and after you drink alcohol (*duh*). A CGM can be especially helpful in these situations! The carbs in alcohol may spike your blood sugar at first, but the alcohol poses a risk of dropping your blood sugar a few hours after drinking, so it is vital that you check your blood sugar more often when you are drinking (*Beyond Type 1, 2016b*). When you drink, your liver has to focus on processing the alcohol rather than its usual job of releasing glucose stores (*i.e. glycogen*), which normally helps keep your blood sugar stable.



Thus, your blood sugar can drop in the absence of glucose release from the liver when you are drinking. So don't forget to have extra snacks with you in case you go low, make sure to check your blood sugar more often than you normally would to keep an eye on it, and consider eating a bedtime snack to prevent an overnight low. When you drink late at night, as annoying as it sounds, it may also be a good idea to set an alarm to wake up in the middle of the night to make sure you're okay, or to stay up for a few hours after drinking to monitor your blood sugar. Netflix binge, anyone?

If you are on CGM, it can be very helpful to watch your trends, which might help you decide when a snack might be a good idea. You might even temporarily raise your low glucose alert to 100 or so, to make sure you don't go too low when drinking. If your CGM information is available on your smartphone, you may be able to utilize the remote monitoring feature to have a buddy, roommate or another trustworthy individual track your glucose, especially on nights when you have been drinking. Having a snack or meal before bed can help to offset the delayed low blood sugar after drinking alcohol.

- 2 Have someone near you who knows you have diabetes.** When you're drinking, especially when you're at a party or large event, it is always a good idea to have a few friends who you can depend on to help you if your blood sugar drops. Make sure someone you trust and are drinking with knows that you have diabetes, can recognize the symptoms of a low if you are unable to, and will help you get low snacks if you need them (*Beyond Type 1, 2016b*). Low blood sugar symptoms can look a lot like being tipsy or drunk, so it is important to have someone that can recognize your symptoms, and is willing to help you check your glucose just to be sure. Drinking with diabetes can be really dangerous if you are not super careful, so it's good to have someone you trust looking out for you. It also may be a good idea to spend the night at a friend's house if you've been drinking, so you can have someone there to help you treat a low if you need to. Keep in mind that although it's great to have a friend around as an extra precaution, always keep in mind that they may not catch diabetes emergencies quickly, and you should always be prepared for the worst.
- 3 Eat before, during and possibly after drinking.** Drinking alcohol on an empty stomach not only can make you drunker faster, but for people with diabetes, it also means it can drop your blood sugar lower and faster (*Beyond Type 1, 2016b*). Foods with complex carbohydrates and protein are best, like pasta with cheese, or a meat sandwich. Also be sure to drink plenty of water in between those beers or margaritas, and then again at the end of the night.
- 4 Start slow.** You probably already know that some alcoholic drinks can have crazy amounts of sugar in them. So how do you drink and bolus, or not bolus for it? Many doctors will advise that you not bolus for alcoholic drinks, or maybe give less insulin than usual, and if you feel comfortable talking to your doctor about alcohol, you should. If you don't, check out Beyond Type 1's "[Sex, Drugs, and Rock & Roll](#)" section of their website. They have multiple blogs and articles about alcohol and diabetes, including some suggestions about the best diabetes-friendly drinks.



Wine and light beers are great because they have few carbs. However, if there is a specific drink that you like, and it happens to have quite a bit of sugar, try it out in a safe environment. See how your favorite drink affects your blood sugar at home or with close friends or family. Because of the sugar content in some drinks, you may actually need to give yourself a little insulin bolus. Keep in mind also, that many mixed drinks can be made with diet or sugar-free options to prevent a crazy blood sugar spike. As with other parts of diabetes, sometimes it just takes some trial and error to learn what works and what doesn't.

5 Glucagon will not work effectively if you have been drinking alcohol!

This is extremely important to keep in mind as you manage your blood sugar. If your blood sugar drops low very quickly, Glucagon will not be able to bring it up as effectively if you have been drinking. You should always have sugar tablets, juice, honey, or another quick-acting low-sugar snack on you, and generally err on the side of preventing low blood sugars when drinking alcohol.

Be patient and persistent, and if you mess up once with alcohol, don't beat yourself up about it. Think about what you did and try to adjust your insulin, your food intake, or even the type of drink you had to handle alcohol more successfully the next time. Use what happened to learn more about how your body reacts to alcohol, and use that information to make better decisions in the future.

Drugs and diabetes may also be a touchy topic to discuss with your doctor, let alone with your parents. Drugs aren't too different than alcohol in the sense that you should take similar steps to manage your diabetes well. Check your blood sugar frequently, have friends nearby who know what to do in case of an emergency, and remember that drugs, just like alcohol, will distort your thinking and perspective in some ways (*Beyond Type 1*, 2016c). You probably know that some drugs, like marijuana in particular, also can give you the munchies. It is easy to eat quite a few carbs without realizing it, so it may be a good idea to give yourself a small "pre-bolus" before you get the munchies, and then more insulin later if you know you've eaten more.

**The College Diabetes Network does not encourage or condone the illegal use of any drug or substance.*

WOMEN'S HEALTH

Periods, birth control, pregnancy, yeast infections and the like are just a few of the super-fun (*sarcasm intended*) things that women get to deal with, and things that diabetes can greatly affect. Although we cannot cover everything here, we'll hit on the basics of a few important topics, and provide you with some resources to [learn more](#).

Unexpected blood sugar spikes when you start your period, frustrating yeast infections when your blood sugars are high, or super long and painful periods—these are all pretty normal problems for a woman with diabetes. Let's chat about periods for a bit. They kind of suck, right? No, they really suck. No one enjoys being on their period. Now that we have that established, how do can we deal with diabetes through the sucky-ness of a period? Well let's start off with an overview of what a period with diabetes might look like.

Commonly, blood sugars will spike a few days before your period begins. Sometimes it is one or two days, and sometimes it is four, depending on many different factors. Unfortunately, if this is something you experience, there really isn't a whole lot you can do to prevent it. However, you can anticipate and prepare for it. Having a period tracker app on your phone can be extremely helpful in keeping track of when your last period was, when you can expect your next period, and even understanding how long your average cycle is (*which can be longer for women with diabetes*). You also can take notes on certain days to remember how your blood sugar reacted and see how that may have been related to your period. If you see trends, you may find that increasing your basal rates and/or adjusting your bolus settings on the days you expect it to spike could help.

After your blood sugar spikes at the beginning, you could also find that it drops lower when your period actually starts. On these days, it will most likely be helpful to lower your basal rates and/or back off your bolus settings. But with blood sugars, keeping a close eye on them and recording what they do in relation to your period is key to understanding trends and preparing to handle them as mother nature runs its course. And in regard to the pain that comes with it, plenty of ibuprofen, heat packs, and rest usually do the trick. Oh, and don't forget chocolate!

Over time, persistent high blood sugars can cause damage to blood vessels, and female erectile tissue is packed with blood vessels. Women have erectile tissue and need blood flow to these areas just like men do in order to comfortably have intercourse. Some of the ways this might manifest include vaginal dryness, pain or discomfort during sex, decreased sex drive, difficulty becoming aroused, or difficulty in reaching orgasm. Don't be afraid to use lubrication if you need it, and definitely talk to your doctor or OB/GYN if you find you are experiencing any of these issues.

Yeast infections are another one of the frustrating areas of health that many women with diabetes have to deal with. A healthy vagina should have some yeast present, but a yeast infection can develop when your blood sugar levels are running higher than normal. Your kidneys will flush out the excess sugar through urination, which

yeast feed on. Usually this can be addressed through an over-the-counter medication called Monistat. However, if you have reoccurring or severe yeast infections, you should chat with your doctor about what you are experiencing, and ask if they can prescribe Miconazole, which is a one-pill dose that should take care of the yeast infection in a day or two. If your yeast infections are recurring, you may also want to ask for a “standing prescription” for this medication, so you can pick one up at the pharmacy anytime you need one.

[Birth control](#) is another one of those topics that can be a little awkward to discuss with your doctor, and especially your parents if you need to talk with them about it. If you have already tried to do a quick search on the internet for more information, it may have come up short. There isn't a whole lot of information out there on how birth control can affect diabetes, mainly because it varies so widely from person to person. For the pill in particular, some women claim that they have to increase their insulin dosing significantly, and others say that their blood sugars are not affected at all (*Beyond Type 1*, 2016a).

There are also other forms of birth control, like IUDs (*interuterine device*), birth control implants (*such as Implanon*) and the ring. Start by talking with your doctor to find out what they would recommend for you. Research your options within each of the types of birth control to understand how they work, and consider what's important to you in birth control. Regardless of what you choose, keep in mind that a reliable birth control method is incredibly important for anyone who may become pregnant, but particularly for someone with diabetes. If you have an unplanned pregnancy with T1D and you have not been managing your blood sugars extremely well before getting pregnant, there can be risks to you and your baby. Make sure to talk to your doctor and find a birth control that works for you!



Even though this may seem far off in the future, at some point in your life, you may want to get pregnant. Just in case someone has told you otherwise – you can absolutely have a safe and healthy pregnancy with diabetes. It's important to plan well ahead before you get pregnant so that you can have good control over your blood sugar, and a low A1c (*usually 6.5% or less*) in the three to six months prior to conceiving, and around 6% or lower during pregnancy (*it may sound impossible, but T1Ds do it all the time!*). In addition, maintaining your weight at an appropriate level by following a healthy diet and exercising frequently is crucial for your baby's health. Do everything you can to make your body healthy before conceiving in order to give your baby the greatest opportunity to be healthy, too. (*Neithercott*, 2010).

In addition to making sure your body is healthy before pregnancy, you should talk with all of your doctors—endocrinologist, physician, OB/GYN, dietician, and even ophthalmologist—to make them aware that you are planning on becoming pregnant, and discuss anything that they might suggest you do to prepare. Decide where you'll deliver your baby, and make sure you understand how your labor and delivery will operate there. Although births traditionally happen in a hospital, home births and other types of birthing environments are on the rise. Keep in mind that because of pregnancy in women with diabetes is considered higher risk, home births are generally not a good option. Just as importantly, though, you should reach out to other mothers with T1D to provide you with stories, wisdom, and tricks for the before, during, and after of pregnancy. Groups like [Sugar Mommas](#) and other online communities can provide a great platform for this.

Wondering if your children could be at an increased risk of having T1D because you have it? According to the Joslin Diabetes Center, if the father has T1D, then the child is at an 8–10% risk of developing T1D. If the mother has T1D, then the child is at a 2–4% risk of developing it. Based on the fact that the exact cause of T1D has not been determined and the range of factors that affect diagnosis (*including sex, race, and environmental factors*), these numbers can vary (*Joslin*, 2017).

MEN'S HEALTH

While you may not really be thinking of these issues now as a young adult, men have specific health concerns related to diabetes that are helpful to know about in case they ever become an issue for you. Things like erectile dysfunction (*ED*), lower levels of testosterone, and body image are all problems that young men with diabetes may not want to think about or acknowledge. We aren't supposed to be thinking about things like ED in our 20s! We totally get it. However, it is important that you take a moment to acknowledge these issues, regardless of how uncomfortable they may be.

Let's begin by explaining what these challenges are and why they can occur. Erectile dysfunction (*ED*) is simply the inability to get and/or keep an erection before or during sex. It is important to know that ED can be caused by a multitude of issues, related or unrelated to diabetes. Just like with other parts of the body, if blood sugars are not kept in range over long periods of time, blood vessels in the penis can be damaged,

which can cause ED. However, other issues like depression, anxiety, smoking, obesity, and certain types of medications have all been known to cause ED. So, diabetes should not necessarily be blamed as the first culprit of the issue. If you are experiencing ED, it can certainly be awkward, but talking to your doctor will help you figure out what the true cause is, and how to solve it (*American Diabetes Association, 2014c*). Lots of men struggle with ED at some point in their lives, so don't be ashamed or feel like this is something you'll deal with forever! It's often treatable with either medication or other options.

Experiencing lower testosterone levels means exactly what it sounds like: men with diabetes are at a higher risk for having lower testosterone levels than men without diabetes. Insulin is a hormone, just like testosterone, and because people with diabetes have more difficulty keeping "normal" insulin levels, other hormone levels can also be thrown off. However, this issue is more often associated with insulin resistance and poor health in other aspects, not just in diabetes. As with any of these issues, if you suspect that you may be experiencing lower testosterone levels, sex drive, or other issues that men with diabetes can sometimes face, talk to your doctor about it.

Thrush is a yeast infection that can affect men, and may be more of an issue for men with diabetes due to high blood sugar levels. Symptoms of oral thrush include white patches in the mouth (*cheeks, lips, tongues, or back of the mouth*), bitter taste, redness and/or bleeding. Symptoms of penile thrush include inflammation of the head of the penis and pain during urination and sex. Non-diabetes factors, such as antibiotics and asthma inhalers can also increase the risk for developing thrush—luckily, over-the-counter medicines can be used to treat it. If symptoms of thrush do arise, you should consult your physician or endocrinologist right away.



Another issue that can come up in men with diabetes who have very high blood sugars and A1c's over several years is called retrograde ejaculation. In simple terms, this is the process in which semen attempts to ejaculate through the penis, but instead goes into the bladder and out through urine. Although this is not harmful to the bladder or urine, it can be generally uncomfortable, and cause infertility issues for men who are trying to conceive a child (*National Institute of Diabetes and Digestive and Kidney Diseases, 2008*). If you believe you are experiencing this, it can be treated relatively simply by talking with your doctor and deciding on a medication that would work best for you.

One of the best ways to prevent these types of complications is to monitor your blood sugar closely and make every attempt to keep it in range as much as possible. It is important to remember that these complications can be caused by any number of issues unrelated to diabetes as well. That being said, it is important to find an endo that is both knowledgeable and with whom you feel comfortable speaking with. Be your own advocate and have a general awareness of what issues, like these and others, you are experiencing. Be courageous enough to address issues quickly when you notice them come up! It can make a huge difference in treatment.

As often as self-esteem is talked about as a women's issue, men experience issues with it as well. Diabetes can add a layer of complication to self-esteem and issues regarding performance. Diabetes impacts not only exercise and sex, but also attitude towards blood sugars and ego. These are all issues that men face, and are compounded by the presence of diabetes. Even though most men are driven to perform successfully, sometimes we must acknowledge that complications due to diabetes are beyond our control. If your blood sugar numbers are out of range, your performance in any facet of life may suffer. Over time, this can impact self-esteem. A good thing to remember is that all men, with or without diabetes, can experience these issues from time to time, and there are a ton of ways to treat them.

Out-of-range blood sugar levels can affect performance in other areas as well. Men are often expected to perform a certain way in the bedroom. Society, friends, and even individuals can place an immense amount of pressure to perform "well" in bed. When you experience a low blood sugar during sex, temporarily stopping to correct can be frustrating. This situation can contribute to a negative self-esteem. Other issues, such as ED, can make this even more difficult for men. It is important to remember that these issues, like others, can be managed. If you "roll with the punches" and remain proactive in your diabetes management, there is no reason that any of these issues should pose a problem or be embarrassing. Side note: If any partner ever makes you feel bad for needing to take care of yourself, they are not worth your time.

Wondering if your children could be at an increased risk of having T1D because you have it? According to the Joslin Diabetes Center, if the father has T1D, then the child is at a 8–10% risk of developing T1D. If the mother has T1D, then the child is at a 2–4% risk of developing it. Based on the fact that the exact cause of T1D has not been determined and the range of factors that affect diagnosis (*including sex, race, and environmental factors*), these numbers can vary (*Joslin, 2017*).



CONCLUSION

So you've made it all the way to the end of this thing, huh? While getting diagnosed with T1D is never easy, we hope that this guide made it just a little bit easier. There are a million other places you can turn to for more information on any of these topics (*and others!*), so don't let this be the end of what will be a lifetime of learning new things about your own personal diabetes, tips and tricks for making life easier with diabetes, and all the leaps and bounds being made in diabetes research, technology, treatment, and management. Check out the "More Resources" section of this guide for some tips on where to turn for different topics. Not sure where to turn? We got you—email CDN at info@collegediabetesnetwork.org for any and every question you might have and we'll point you in the right direction. If nothing else, one of the most positive things about diabetes is you've just gained a community full of some of the strongest, most resilient, and capable people you'll ever meet (*not that we're biased or anything*). Welcome!

GLOSSARY

Whether you've had diabetes for 5 days, 5 months, or 5 years, there may be some terms you will come across in this guide (*or as you navigate life with diabetes*) that you've never heard before. Thank you to the STEPP-UP PROGRAM funded by the Helmsley Charitable Trust for this glossary of diabetes related terms!

A1c

This is also called HbA1c, Hemoglobin A1c, or Glycosylated hemoglobin. It is a blood test. The test can be a finger stick or blood taken from your vein. It tells you what your average blood sugar has been over the past three months. It does this by measuring the percentage of red blood cells in your body that have glucose stuck to them.

In most cases, normal A1c levels are 4% to 5.6%. The goal is to have your A1C as close to normal as possible, without having too many low blood sugar reactions. Your diabetes team will help you figure out what is the best target for you.

Be sure to do this test as often as your diabetes team orders it, usually every 3 months.

Antibodies

These are proteins the body makes to protect itself from outside threats. These threats can include bacteria or viruses.

People get type 1 diabetes when their antibodies destroy the body's own β -cells that make insulin.

Aspart

This is the generic name of one kind of rapid-acting insulin. The branded (*trade*) name for aspart is Novolog. See rapid-acting insulin for more information.

Apidra

This is a branded (*trade*) drug name of one kind of rapid-acting insulin. The brand name for Apidra is glulisine. See rapid-acting insulin for more information.

Autoimmune Disease

This is a disease caused by a problem in the body's immune (*infection fighting*) system that causes an attack on the body itself, rather than an infection. Type 1 diabetes is this kind of disease.

Basaglar

This is a brand drug name of one kind of basal insulin. The generic name for Basaglar is glargine. This long-acting basal insulin drug comes in one strength written as U100. See basal insulin and long-acting insulin for more information.

Basal Insulin

This is the insulin you give by injection, once or twice a day. This is usually only for patients on multiple daily injections. Basal insulin comes in different strengths shown as U100, U200 and U300. There are two types of basal insulin, long-acting insulin and intermediate acting insulin. See long-acting insulin and intermediate acting insulin for more information.

Basal insulins are:

Generic name	Brand name
NPH U100	Humulin (<i>N</i>) or Novolin (<i>N</i>) or ReliOn (<i>N</i>)
Degludec U100	Tresiba U100
Degludec U200	Tresiba U200
Detemir U100	Levemir
Glargine U100	Lantus or Basaglar
Glargine U300	Toujeo

Basal Rate

Your body needs insulin on an ongoing basis even when you are not eating. The basal rate is the amount of insulin you need to give by shots or with an insulin pump. When the basal rate or basal insulin dose is set just right, the blood sugar does not go high or low when you are not eating.

For those using a pump, basal rates are in units per hour. You may see units per hour written as units/hour or u/hr. Typical rates are between 0.4 u/hr and 1.6 u/hr. If you are using shots, you give yourself basal insulin doses in daily units, such as 15 units or 20 units. Your diabetes team will tell you what your basal doses should be.

Beta Cells or β -cells

Beta cells are also called β -cells. They are cells that make insulin. These cells are in the part of the pancreas called the Islets of Langerhans. See Cells for more information.

Blood Glucose (*BG*) or Blood Sugar

Blood glucose is also called blood sugar. This is the main sugar that is in the blood. This sugar is the body's main source of energy.

Blood Sugar Level

This means how much sugar is in the blood. In the U.S. blood sugar level is measured in milligrams per deciliter, or mg/dl. In other countries, it is measured in millimoles, or mmol/L.

A normal range (*for someone without diabetes*) is usually 70 – 100 mg/dl before breakfast and below 140 mg/dl after meals.

Blood Sugar Meter

This is a small, portable machine. People with diabetes use it to check their blood sugar levels.

After pricking the skin with a lancet, you place a drop of blood on a test strip in the machine. Then the meter, or monitor, shows the blood sugar level as a number on the digital display.

Blood Sugar Monitoring

This means checking your blood sugar level on a regular basis to manage diabetes.

You need a blood sugar meter or blood sugar test strips that change color when a drop of blood touches them. This is so you can check your blood sugar often.

Bolus

This is a burst of short or rapid acting insulin. It acts over a short period of time.

Most often a bolus is to offset the blood sugar rise that happens after eating or drinking carbohydrates. It is also a correction dose to bring down a high blood sugar level back to normal.

The insulins for this are:

Generic name	Brand name
Insulin Regular	Humulin (R) or Novolin (R) or ReliOn (R)
Lispro	Humalog
Aspart	NovoLog
Glulisine	Apidra

Cannula

This is a small and flexible tiny piece of tubing. It stays under the skin once you remove the needle from the infusion set of an insulin pump.

Carbohydrate or Carb

Carbohydrates are also called carbs. Carbs are one of the three main parts in foods:

- 1 Carbs
- 2 Fats
- 3 Proteins

They are the most important part of foods to control sugar. Carbs are made up mainly of sugars and starches and have four calories per gram.

Carb Bolus

This is a spurt of insulin that gets sent out quickly in the body to match carbs you are about to eat in a meal or snack. Most people use between 1 unit of rapid acting insulin for each 5 grams of carbs to 1 unit for each 25 grams.

Carb Counting

This means counting the grams of carbs in any food you eat or liquid you drink. This is a useful way to find out the amount of insulin you need to keep a normal blood sugar.

Carb Factor or Carb Ratio or Insulin-to-carb Ratio

This is the number of grams of carbs that one unit of insulin covers for a person. This varies from person to person. Your diabetes team will tell you your ratio.

Catheter

This is also called pump tubing. It is the plastic tube that insulin goes through from the pump to the insertion set.

Cells

Cells are the smallest units of life. They are basic building blocks for all known life forms. Cells make up the parts of your body, such as your skin, bones, heart, liver, or lungs. A person has over 10 trillion cells in their body.

Certified Diabetes Educator (CDE)

This is a health care professional with expertise in diabetes education. A CDE is trained and is certified.

Continuous Subcutaneous Insulin Infusion (CSII) or Insulin pump

CSII is the formal name for an insulin pump. See Insulin pump for more information.

Coma

This is a sleep-like state where a person is not conscious. Very high or very low blood sugar in people with diabetes can cause a coma.

Correction Bolus

This is a spurt of short or rapid acting insulin that gets sent out quickly in the body. It is to bring a high blood sugar level back within a person's target range before a meal, after a meal, or at bedtime.

Correction Factor or Insulin Sensitivity Factor

This is the fall in blood sugar level that one unit of insulin will produce. This is set by your diabetes team. It is often in the range of 25–75 but can be more or less depending on what your body needs. A correction factor of 50 is often used as a starting point. This means that 1 unit of insulin will lower your blood sugar by 50 mg/dl. For instance, if your correction factor is 50 and your blood sugar is 200 mg/dl, you expect that giving 1 unit of insulin will lower your sugar by 50 points. Which means that after 1 unit of insulin the blood sugar will fall from 200 mg/dl to 150 mg/dl.



Dehydration

This is when a person does not have enough water in their body. This can come from drinking too little fluid. It can also come from losing too much body fluid when a person pees or urinates often, sweats, has diarrhea or vomiting.

Delayed-onset Hypoglycemia

This is a drop in blood sugar levels that can happen a number of hours after intense exercise.

Diabetes Team

This is the group of people who help you take care of your diabetes. You are the most important member of your team. The other people on your team can be your:

- Doctor
- Nurse or nurse practitioner or physician assistant
- Diabetes educator
- Dietitian or diabetes educator
- Social worker
- Psychologist
- Eye doctor

All of these people are part of your diabetes team. Each one of them can help you take better care of your diabetes.

Diabetic Coma

This is when a person with diabetes is not conscious and is in a sleep-like state. Very high or very low blood sugar in people with diabetes can cause this.

Diabetic Ketoacidosis (DKA) or Ketoacidosis

This is a very serious condition where the body is deprived of insulin. This results in dehydration and the buildup of acids in the blood. It is life-threatening. In most cases, this needs to be treated in the hospital.

Dietitian

This is a health care professional who tells people about meal planning, carb counting, weight control and diabetes management. A registered dietitian (RD) has more training. Dietitians can also be diabetes educators.

Degludec

This is a generic drug name of one kind of basal insulin. The brand name for degludec is Tresiba. This long-acting basal insulin drug comes in two strengths written as either U100 or U200. See basal insulin and long-acting insulin for more information.

Detemir

This is a generic drug name of one kind of basal insulin. The brand name for detemir is Levemir. This long-acting basal insulin drug comes in one strength written as U100. See basal insulin and long-acting insulin for more information.

Endocrinologist

This is a doctor with the title MD or DO who is trained to treat diseases related to glandular problems. This includes diabetes.

Exchange Lists

These lists are one of the ways for people with diabetes can plan meals. The lists have different types of food and show the amount carbohydrates, proteins and fats in a serving size. Knowing this information helps you know how much insulin you will need if you eat that food.

Extended Bolus

This is a bolus with the insulin pump that gets sent out over a set period of time, that is set by the patient. For example, the pump could be set to give the bolus dose over 2 or 3 hours instead of right away. Normally the pump gives the bolus right away. This is a way to give the insulin over a longer period of time, which is good for foods that are more slowly absorbed, such as foods with a lot of fat in them.

Fasting Plasma Glucose (FPG) Test

This is a lab test that people take after fasting (*not eating food or drinking any fluids except water*) for 8 to 10 hours. In most cases, people fast overnight and take the FPG test in the morning.

An FPG level of less than 100 mg/dl is normal. A level of 100 to 125 mg/dl means prediabetes. A level of 126 mg/dl or more means a person likely has diabetes. When a level is over 126 mg/dl, additional tests will usually be done to confirm if the person has diabetes.

Fats

Fats are one of the three main parts of foods along with carbohydrates and protein. Fats occur alone as liquids or solids, including oils and margarines but also can be a part of other foods. Fats come from animals, veggies, or nuts/seeds and have 9 calories per gram.

Fiber

This is a kind of carb that passes through the digestive system intact. It does not raise blood sugar levels. It comes from plants.

Fiber adds bulk to your diet. It is very important for keeping your intestines healthy.

Food Bolus

This is a dose of insulin that a person with diabetes takes before meals or snacks. This is to cover the expected rise in blood sugar from the food. Most often, food boluses are matched to the amount of carbohydrates in the food.

Glargine

This is a generic drug name of one kind of basal insulin. The brand name for glargine is Lantus or Basaglar or Toujeo. This long-acting basal insulin drug comes in two strengths written as either U100 or U300. See basal insulin and long-acting insulin for more information.

Glucagon (hormone)

The alpha cells make it in the Islet of Langerhans in the pancreas. This hormone raises blood sugar levels. It is the opposite hormone to insulin which lowers blood sugar levels. In people without diabetes the glucagon and insulin work together to keep blood sugars normal. In people with diabetes not enough glucagon is made to keep the blood sugars normal so they can fall too low.

Glucagon (medication)

Glucagon can be given as a shot to help raise your blood sugar level. It is something that another person would give you if you were having a low blood sugar reaction and were unable to eat or drink sugar to bring it back up. The shot raises the blood sugar quickly. It does this by releasing sugar that is stored in the liver.

Glucagon Emergency Kit

This is a kit that has glucagon and a syringe. It is used to treat severe low blood sugar. Glucagon is a hormone that quickly increases blood sugar.

You need a prescription to get glucagon. It is a shot that someone else has to give you. You should always have a glucagon kit at home, just in case. Be sure the one you have isn't expired.

Glucose

This is a simple sugar that is in the blood. The body uses glucose for energy.

Glucose Tablets

These are tablets that you chew and swallow. They are made of pure glucose. People take them to treat low blood sugar.

Glulisine

This is a generic drug name of one kind of rapid-acting insulin. The trade name for glulisine is Aprida. See rapid-acting insulin for more information.

Glycemic Index (GI)

This is a method to classify foods, most of all carbs. They are classified based on how much they cause the blood sugar level to go up after eating the certain food.

Glycogen

When you eat, carbohydrates turn into a form of sugar called glycogen. This is a storage form of glucose. The glycogen is stored in your liver and muscles. When you have a low blood sugar, fast, or exercise, the glycogen turns into glucose and is released into the blood stream when you need it.

Gram

This is a small unit of weight in the metric system. People with diabetes use grams to weigh food. One ounce equals 28 grams.

Hormone

This is a chemical substance made by a gland or tissue. The blood carries it to other cells in the body. There, the hormone attaches to cells and causes them to do a certain job. For instance, when insulin attaches to a muscle cell it lets sugar go inside the cell. This is described as a "lock and key" effect. The hormone is the key, the cell is the lock. When the hormone insulin attaches to the cell, it opens the door and lets sugar inside.

Insulin and glucagon are hormones.

Humulin [N]

This is a brand drug name of one kind of intermediate-acting insulin. The generic name for Humulin [N] is NPH. See intermediate-acting insulin for more information. It is a cloudy insulin.

Humulin [R]

This is a brand drug name of one kind of short-acting insulin. The generic name for Humalin [R] is Insulin Regular. See short-acting insulin for more information.

Humalog

This is a brand drug name of one kind of rapid-acting insulin. The generic name for Humalog is lispro. See rapid-acting insulin for more information.

Hyperglycemia or High Blood Sugar

This is when a person has a higher than normal level of sugar in the blood. In most cases, it's a blood sugar level of more than 180 mg/dl.

Hypoglycemia or Low Blood Sugar or Insulin Reaction

This is when a person has a lower than normal sugar level in the blood. In most cases, this means a blood sugar level of less than 70 mg/dl.

Symptoms can vary. They can include feeling confused, nervous, shaky, drowsy or moody. They can also include sweating, headaches or numbness in the arms and hands. If it is not treated, severe low blood sugar can cause loss of consciousness, convulsions, or even death.

Infusion Set

This is part of an insulin pump. This set transfers insulin from the pump through an infusion line to below the skin. The set includes the hub, tubing, insertion set, and cannula.

Infusion Site or Insertion Site

This is the area on the body where someone who uses an insulin pump inserts the cannula or needle.

Injection or Shot

This is when someone inserts liquid medication or nutrients into the body with a syringe. A person with diabetes injects insulin just under the skin, into what is called subcutaneous tissue. Subcutaneous means below the skin.

Injection Site Rotation and Infusion Site Rotation

This is when you change the place on the body where you inject insulin or put the infusion sites. When you rotate, it prevents lipodystrophy. This is an abnormal build-up of fat under the skin.

Injection Sites

These are places on the body where people most often inject insulin.

Insertion Set

This is the part of the infusion set that a person inserts through the skin. It may be a thin or a large metal needle. When the person removes the needle, it leaves a small Teflon catheter or cannula under the skin.

Insulin

This is a hormone made by beta cells in the Islet of Langerhans in the pancreas. Insulin is sent out when blood sugar levels go up, for example after eating a meal. Its job is to lower blood sugar levels to normal. It lets sugar go into cells. Sugar gives your cells the energy to live. Without insulin the sugar stays on the outside of the cells and goes up to very high levels in the blood. Without insulin you would die because your cells would have no energy to live.

When your body cannot make its own insulin, there are different types for insulin drugs you can take. Your diabetes team will determine the best insulin for you.

Insulin Adjustments

This is a change in the amount of insulin a person with diabetes takes. It is based on factors such as meal planning, activity levels and blood sugar levels.

Insulin Pen

This is a device that injects insulin. It looks like a fountain pen. There are two kinds of insulin pens:

- 1 Prefilled pen with insulin and is disposable
- 2 Reusable pen that holds replaceable cartridges of insulin

To inject the insulin under the skin, you need to screw on a needle to the top of the pen.

Insulin Pump

This is a small machine about the size of a beeper. It is computerized. You can program it to deliver a constant amount of basal insulin and give a bolus of insulin for a meal or high blood sugar. It takes the place of insulin shots.

A pump sends out fast-acting insulin through a plastic catheter. The catheter is attached to either a Teflon infusion set or a small metal needle. You insert the set or small needle through the skin. The body gradually absorbs the insulin into the bloodstream.

Insulin Regular

This is a generic drug name of one kind of short-acting insulin. The brand name for insulin regular is Humulin [R]. See short-acting insulin for more information.

Insulin Sensitivity

This is a term to describe how the body reacts to insulin. Everyone reacts differently even if your body is making its own insulin or you have to get insulin by shots or a pump. If a person is sensitive to insulin it means that a smaller amount will lower the level of glucose or sugar in your blood. If a person is not sensitive to insulin, they will need more insulin in order to lower the glucose or sugar in the blood. This is called insulin resistance.

Insulin-to-carb Ratio

This is a formula you use to match the dose of insulin to the amount of carbs you eat and drink.

Intermediate-acting Insulin

This type of basal insulin controls blood sugar for about half the day or overnight. This insulin starts working in about 2 to 4 hours. It works best in your body at 4 to 8 hours and then starts fading. How it works is different for each person.

NPH is the generic name of the drug and Humulin and Novolin are brand names.

This insulin looks cloudy. You can mix it with regular or rapid-acting insulin in a syringe. See basal insulin, regular insulin and rapid-acting insulin for more information.

Islets of Langerhans

These are small islands of cells scattered throughout the pancreas that make hormones. They have β -cells, which make insulin and alpha cells, which make glucagon and delta cells, which make other hormones.

Ketoacidosis

See [Diabetic ketoacidosis](#)

Ketones

These are acids that the body releases when body fat breaks down. Ketones can build up to dangerous levels in the absence of insulin. This is because the body is not able to break down sugar as fuel.

They can be measured by a urine or a blood test. Most often they are tested with a urine dip stick.

Lancet

This is a spring-loaded device that you use to prick the skin with a small needle. You do this to get a drop of blood to check your blood sugar

Lipodystrophy

This is when the fat tissue below the skin becomes swollen, hard or forms dimples. It also limits the body from absorbing insulin if you inject in that area.

It is often caused by giving yourself many shots into the same area of skin or putting the pump cannula in the same site over and over again.

Lantus

This is a brand drug name of one kind of basal insulin. The generic name for Lantus is glargine. This long-acting basal insulin drug comes in one strength written as U100. See basal insulin and long-acting insulin for more information.

Levemir

This is a brand drug name of one kind of basal insulin. The generic name for Levemir is detemir. This long-acting basal insulin drug comes in one strength written as U100. See basal insulin and long-acting insulin for more information.

Lispro

This is a generic drug name of one kind of rapid-acting insulin. The brand name for lispro is Humalog. See rapid-acting insulin for more information.

Long-acting Insulin

This type of basal insulin controls blood sugar consistently for an entire day or longer. It begins working several hours after being injected and can stay in the bloodstream up to 42 hours. How long it works can be different for different people. It may start weakening a few hours earlier for some, while it may work a few hours longer for others. It comes in different strengths shown as U100, U200 and U300.

See basal insulin for more information.

Long-acting insulins are:

Generic name	Brand name
Degludec U100	Tresiba U100
Degludec U200	Tresiba U200
Detemir U100	Levemir
Glargine U100	Lantus or Basaglar
Glargine U300	Toujeo

Medical Insurance or Health Insurance

This is a plan that a person signs up for that pays for some or all of the costs of medical and surgical care. These plans differ from state to state. Sometimes people have to buy their own insurance. Other times they get it from their job or the government. Government plans include Medicare, Medicaid (*MediCal in California*).

Multiple Daily Injections (MDI)

This is a schedule where you give yourself a number of insulin shots each day. In most cases, you use a long-acting insulin along with shots of rapid acting insulin before each meal or snack. Some people also use intermediate-acting insulin. See long-acting, intermediate-acting and rapid-acting insulin for more information.

Novolin [N]

This is a brand drug name of one kind of intermediate-acting insulin. The generic name for Novolin [N] is NPH. See intermediate-acting insulin for more information. It is a cloudy insulin.

Novolin [R]

This is a brand drug name of one kind of short-acting insulin. The generic name for Novolin [R] is Insulin Regular. See short-acting insulin for more information.

NPH

This is a generic drug name of an intermediate-acting insulin. The brand names for NPH are Humulin [N] and Novolin [N]. See intermediate-acting insulin for more information.



Occlusion

This is when the infusion set or infusion site gets clogged or blocked. This can stop or slow insulin delivery.

In most cases, an occlusion happens when the cannula gets pinched, kinked or dislodged. It also happens when the cannula gets blocked when insulin crystals form.

An occlusion can be partial. That means it only reduces, but does not stop the flow of insulin. Or it can be complete. That means no insulin gets through the tubing.

Pancreas

This is a gland that is near the stomach. It is deep in the center of the body. It releases insulin and other hormones. It also releases digestive enzymes.

Pharmacist

This is a health care professional who prepares and gives medicine to people. She or he also gives information on medicines.

Pre-mixed Insulin

In most cases, people with diabetes take this two or three times a day before a meal. They are insulins where a shorter and longer acting insulin are mixed together. In most cases, they look cloudy. The numbers after the name describe how much long-acting and short-acting insulin is in the mix. They have many names, including:

- Humulin 70/30 (70% long acting/30% short acting insulin)
- Novolin 70/30 (70% long acting/30% short acting insulin)
- Novolog 70/30 (70% long acting/30% rapid acting insulin)
- Humulin 50/50 (50% long acting/50% short acting insulin)
- Humalog mix 75/25 (75% long acting/25% rapid acting insulin)

Proteins

These are one of the three main parts of foods along with carbohydrates and fats. Proteins are made up of amino acids. Foods such as milk, meat, fish, and eggs have protein.

The body burns proteins more slowly than it does fats or carbohydrates. There are four calories per gram of protein.

Rapid-acting Insulin

If you give yourself shots, you will give both long-acting insulin and short or rapid-acting insulin. The rapid-acting insulin covers insulin needs for meals. You give yourself a shot at the same time you eat. If you use a pump, you only use rapid acting insulin. The pump gives out rapid-acting insulin in small amounts continuously. You also program your pump to give you a bolus of insulin for meals. See long acting insulin and bolus for more information.

Rapid acting insulins are:

Generic name	Brand name
Lispro	Humalog
Aspart	Novolog
Glulisine	Apidra

Reservoir, syringe, cartridge

This is a container that holds the fast-acting insulin inside a pump.

Self-Management

In diabetes, this means the ongoing process of managing diabetes. It includes when you:

- Plan meals
- Plan physical activity
- Check blood sugar
- Take diabetes medicines
- Handle diabetes when you are sick
- Handle low and high blood sugar
- Manage your diabetes on trips

People with diabetes design their own self-management treatment plan. They do this with the support of their diabetes team. This includes doctors, nurses, dietitians and pharmacists, and others.

Sensitivity Factor

This is the amount that a single unit of insulin lowers the blood sugar level in a person. This is often first set at 50. But it gets changed based on how a person reacts to insulin.

A lower number, such as 25, means that the person is less sensitive to insulin. A higher number, such as 75, means that the person is more sensitive to insulin.

Sharps Container

This is a container where you get rid of used needles and syringes. It is often made of hard plastic so that needles cannot poke through.

Self-monitoring of Blood Glucose (SMBG)

This is when you check your blood sugar with a blood sugar meter

Short-acting Insulin

Short-acting insulin covers insulin needs for meals. You give yourself a shot about 30 minutes before you time you eat. Short-acting insulin brand names are Humulin or Novolin Regular [R]. The generic name regular insulin.

Starch

This is type of complex carbohydrate. Some examples are bread, pasta and rice.

Sugar

This is a kind of carbohydrate that most often has a sweet taste. This includes, glucose, fructose and sucrose. In the diabetes world, the word sugar is often used instead of glucose. Blood glucose and blood sugar mean the same thing.

Sugar Alcohol

This is a sugar substitute. It has simple sugars with an alcohol molecule attached to them. This lowers the calorie content. It also delays the effect on blood sugar levels.

Syringe

This is a device used to inject medication or other liquids into body tissues. The syringe for insulin has a hollow plastic tube with a plunger inside. It also has a needle on the end.

Team Management

This is an approach to treat diabetes where a team provides medical care. See Diabetes team for more information.

Total Daily Dose (TDD)

This is the total amount of insulin a person uses in a day. It means adding all the insulin doses: faster and slower acting insulin together. You use the TDD to help figure out the basal rate, carb factor and correction factor.

Tresiba

This is a brand drug name of one kind of basal insulin. The generic name for Tresiba is degludec. This long-acting basal insulin drug comes in two strengths written as either U100 or U200. See basal insulin and long-acting insulin for more information.

Toujeo

This is a brand drug name of one kind of basal insulin. The generic name for Toujeo is glargine. This long-acting basal insulin drug comes in one strength written as U300. See basal insulin and long-acting insulin for more information.

Type 1 Diabetes

In type 1 diabetes the pancreas makes little or no insulin. This is because the β -cells in the body that make insulin have been destroyed.

It is an autoimmune disease. It is caused by a defect where the body's internal defense system attacks a part of the body itself.

Most often, this type of diabetes appears suddenly. It is more common in people younger than 30. But it can appear at any age.

The ways to treat it are:

- Give daily insulin shots or using an insulin pump
- Count carbohydrates
- Exercise regularly
- Self-monitor blood sugar levels each day through finger sticks or by using a continuous glucose monitoring device.

Units of Insulin

This is the basic measure of insulin. U-100 insulin means 100 units of insulin per milliliter (mL) or cubic centimeter (cc) of solution.

It is a way to describe the concentration of insulin. In the United States, there are U100, U200, U300 and U500 insulins.



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