



A resource for caregivers of **children with type 1 diabetes** and their sitters

Acknowledgments and Special Thanks

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Introducing Toby's T1D Tale

An educational iPad® app from Omnipod® Insulin Management System

In Toby's T1D Tale, Omnipod® Mascot and Podder™ Toby the Turtle™ provides diabetes education to children and caregivers through stories, tips and trivia.

- + Follow Toby on his journey from diagnosis to management of his type 1 diabetes
- + Show off your skills and what you've learned along the way in Toby trivia sections
- + See how Toby and his family handle sick days and sleepovers
- + Choose to have Toby's story narrated to you or read it by yourself

Visit the Apple® App Store® and search for **Toby's T1D Tale**
Please note, Toby's T1D Tale is currently only available on iPad and in the United States.



Preface for Caregivers



Whether your child is diagnosed with type 1 diabetes (T1D) as an infant, young school child or middle-schooler, leaving your child with a sitter can be challenging, especially soon after diagnosis.

Although it can be difficult, it's important for you and your child to spend time away from each other.

For your child, depending on their age, spending time away helps them increase their independence— in general and specifically with diabetes self-care tasks.

For you, it's important to nurture yourself, your interests and other relationships in your life. Taking care of yourself can help you be a better caregiver.

The good news is that technologies to manage and monitor your child's diabetes now make it easier than ever to spend time away from your child, yet still be in the know about their glucose control.

When you're ready, start with an hour or two away from your child. Go to dinner, see a movie or take a long walk. Next time spend a few more hours apart— maybe your child stays with a grandparent or close friend or attends a school, community or religious activity/event without you. The next step may require a sitter to put your child to bed. In time you and your child will build up to overnight stays.

Rest assured, slowly and over time you and your child will gain experience, increase your comfort level and enjoy success spending time away from each other.

As you and your sitters use this guide, keep your child and their individuality in mind. Every child is unique. Diabetes doesn't change this. Factor in the age of your child, their physical capabilities, their stage of development, the number of years they've had diabetes and more. Consider how ready they are for you to be away from them. Think about your child's ability to do certain diabetes self-care tasks alone or with sitter supervision. Share your insights with your sitters.

By working together you'll create positive experiences for everyone.

We wish you success on your journey!

“Crawl before you walk. Start with a walk around the block, or run to the store. Extend the length each time so your sitter, your child, AND YOU get used to being apart. Put this incredible asset in your diabetes tool box. Give it to everyone who you call upon to watch your child.”

Tom Karlya

**Father of 2 kids
with T1D**

**DiabetesDad.org,
advocate and VP
Diabetes Research
Institute Foundation**



Design and Intent of Smart Sitters Guide:

“Caregivers need a break from diabetes, even if just a couple of hours. Take a breath, connect with loved ones. You’ll be a better parent for it.”

Trang Ly, MBBS FRACP PhD
Pediatric Endocrinologist,
Senior Vice President,
Medical Director
Insulet Corporation



The Smart Sitters Guide can help you prepare sitters or other caregivers for tasks they may need to do and situations that may arise while they take care of your child with T1D.

This Smart Sitters Guide covers basic information about T1D, current tools to manage diabetes, along with plenty of practical advice and tips for caregivers and sitters. It is not intended to serve as a complete guide to managing T1D in children and young adolescents.

As you use this Smart Sitters Guide, give thought to how it best fits your, your child’s, and your sitters’ needs and situation. Think about how you’ll

get each sitter ready to care for your child. Prior to leaving your child with a new sitter, consider having the sitter spend some time with you and your child to observe your child and the diabetes self-care tasks they may need to do. Take this opportunity to show the sitter how to do these tasks and have the sitter demonstrate them back to you. Think about giving this Smart Sitters Guide to sitters to review prior to sitting for your child.

Remember every child, family, sitter and situation is unique. This Smart Sitters Guide is informational and is intended to become a valuable and valued resource as you and your child navigate spending time away from each other.

Ways to Find Knowledgeable Sitters

You may want to find a sitter who has T1D. With an increasing number of teenagers and adults with T1D and the use of various communication channels, there’s easier access to sitters than ever before. The following is a list of ideas and resources:

- Ask your child’s diabetes healthcare providers if they have a list of sitters with T1D.
- Seek out a local group of caregivers who will share names of sitters with you. Determine if the group uses a social media channel to communicate.
- Connect with other families through the American Diabetes Association’s Camps, Safe at School Campaign, and register for a Courage-Wisdom-Hope Kit for newly diagnosed families.

“Start training and using sitters ASAP! Knowing you have trained sitters offers you a sense of security. You’ll have sitters to call whether it’s a spur of the moment event or an emergency.”

Sylvia White MS, RD, CDE

Diabetes Educator,
Mother of 2 kids with T1D

Owner, ParentingDiabetes.com



- Network with other families you meet in support groups or at diabetes events to learn of potential sitters, take turns sitting for each other's children or determine if there are older children in the family who are willing to be a sitter.
- If your child attends, or plans to attend, a diabetes camp, you may find camp counselors who live near you who are willing to be a sitter.
- Attend a local JDRF event with youth-focused programs. Potential sitters may be providing childcare, doing the youth programming or attending the programs.
- If you live in a college town, the campus may have a student-led Chapter of the College Diabetes Network (CDN), which is a group of college students who have diabetes. Find the list of CDN chapters at this link: <https://collegediabetesnetwork.org/find-a-chapter>.
- Children with Diabetes is an online community for kids, families and adults with diabetes. It's an Ohio-based non-profit organization that promotes T1D awareness, support and education both online and at in-person educational conferences called Friends for Life. Learn more about CWD at: <http://www.childrenwithdiabetes.com/>.
- Explore online resources:
 - safesittings.com is a T1D babysitting service provided by Beyond Type 1 in partnership with Insulet Corporation. This online resource connects caregivers in need of a sitter with a responsible teenager or young adult who has T1D. Register today at safesittings.com.
 - sittercity.com is a service that helps caregivers find sitters. They offer a special needs option and will run a background check for a fee.

“Find and train sitters you can trust. You need to get mental and emotional breaks from time to time.”

Greg Dooley

Father of a daughter with T1D

**Beyond Type 1 Executive Board Member,
Children with Diabetes volunteer**



“Leaving your child with a sitter is step one on their road to independence. As parents, it’s our job to model confidence and not fear, to encourage engagement in life fully and to not allow diabetes to be a roadblock to happiness or success.”

Teresa Miller

Mother of a son with T1D

**Regional Coordinator
for Outreach, JDRF**

**Member of Board of
Directors, JDRF
New England**



Define Diabetes

“Diabetes can be overwhelming for caregivers. Use this guide to give sitters a diabetes care overview. It’ll give them the confidence they need!”

Trang Ly, MBBS FRACP PhD

*Pediatric Endocrinologist,
Senior Vice President, Medical Director
Insulet Corporation*

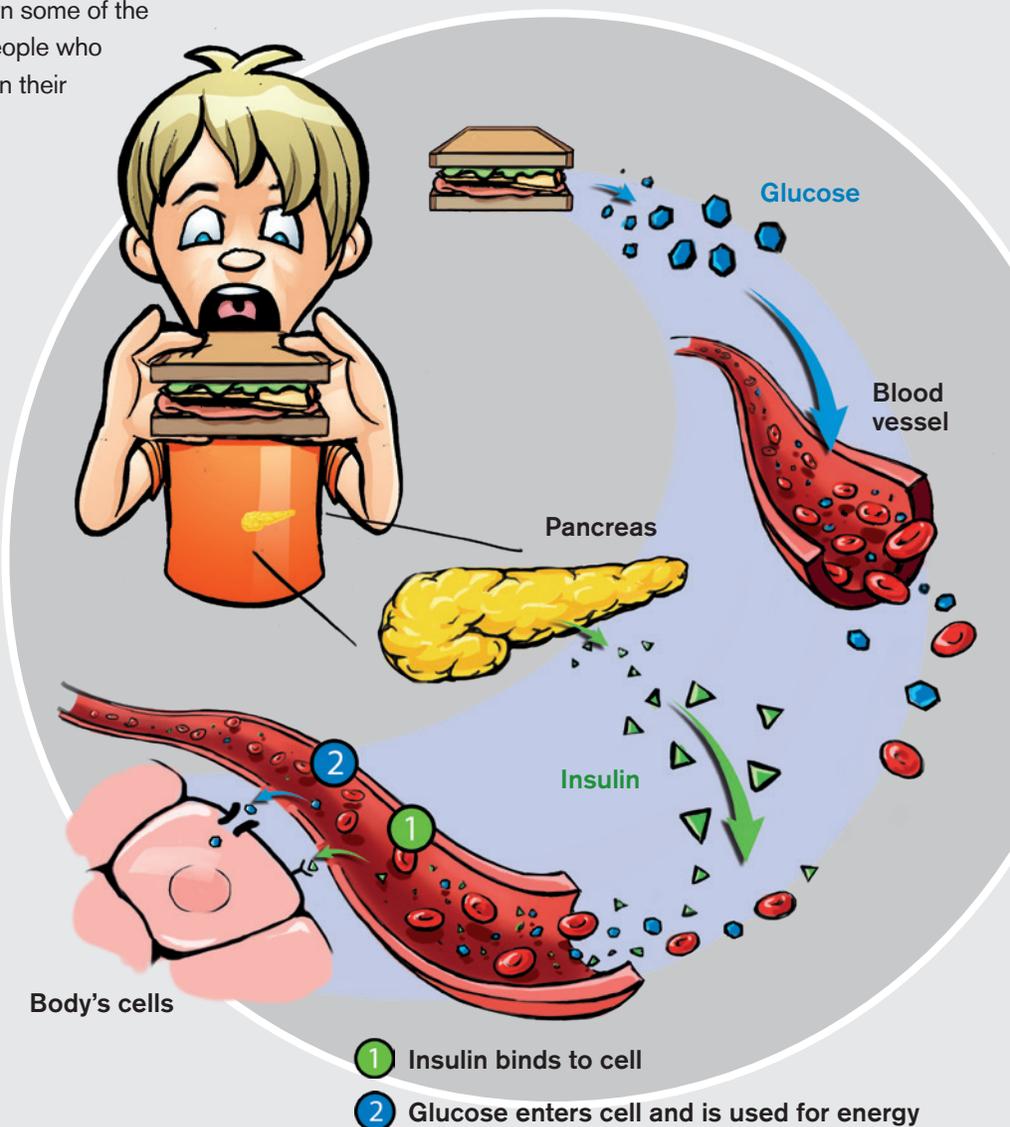


Type 1 diabetes is a health problem in which the person’s pancreas, due to how the disease develops, makes little to no **insulin**. Prior to being diagnosed with type 1 diabetes and due to the lack of insulin, the person’s blood **glucose** (also known as sugar) typically rises higher than normal. Insulin is a hormone required by the body to use the glucose made by breaking down some of the foods and beverages we eat and drink. People who do not have type 1 diabetes make insulin in their body’s pancreas.¹

What is Type 1 Diabetes (T1D)?

There are two main types of diabetes – T1D and type 2. In T1D, the person no longer makes enough of their own insulin. People with type 2 diabetes (T2D) may either make enough insulin but it isn’t working effectively or they no longer make enough insulin.

The challenge of managing T1D is to control the ups and downs of glucose levels. People with T1D must take insulin every day, eat healthfully and carefully manage their physical activity to control their glucose levels and their health. T1D is for sure a blood glucose balancing act!



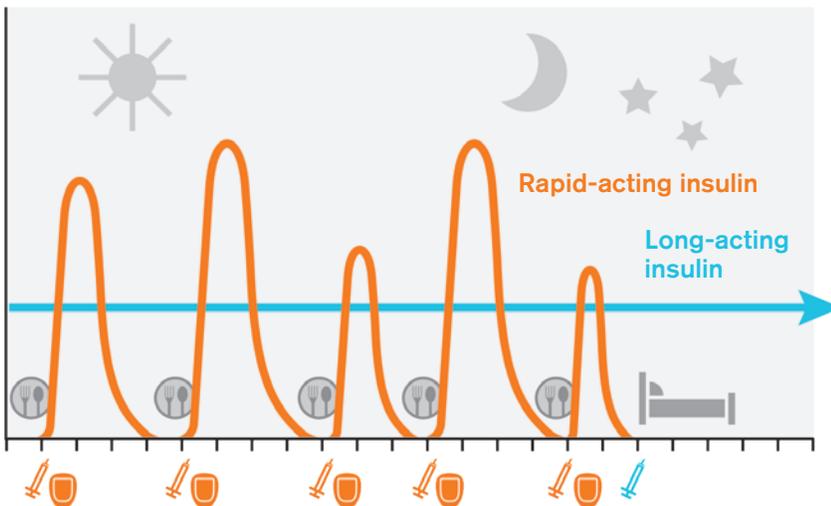
Insulin Basics

Main Types of Insulin

If a child with T1D takes insulin shots, they likely take two different types of insulin:

Long-acting insulin works to lower high glucose levels for a full day (24 hours) or longer. It helps keep glucose levels even between meals and snacks, as well as overnight.

Rapid-acting insulin works to slow the rise of glucose levels that happens after eating. People also take it to lower high glucose levels that may occur any time of the day or night. Different types of *rapid-acting insulin* begin to work in different amounts of time. It can range from starting to work 2.5 minutes after taking it to about 15 minutes after taking it. Usually, most *rapid-acting insulin* peaks in about 1 hour, and continues to work for 2 to 4 hours longer. Children typically take their *rapid-acting insulin* before, during or after they eat a meal or snack.



Ask if the child takes long-acting insulin and if so, what type.

Children with T1D typically take their long-acting insulin at night or in the morning. Sometimes they take it twice a day.

Ask if the child takes rapid-acting insulin and if so, what type. (Hint: if they use a pump or are a Podder™ they most likely use only rapid-acting insulin.)

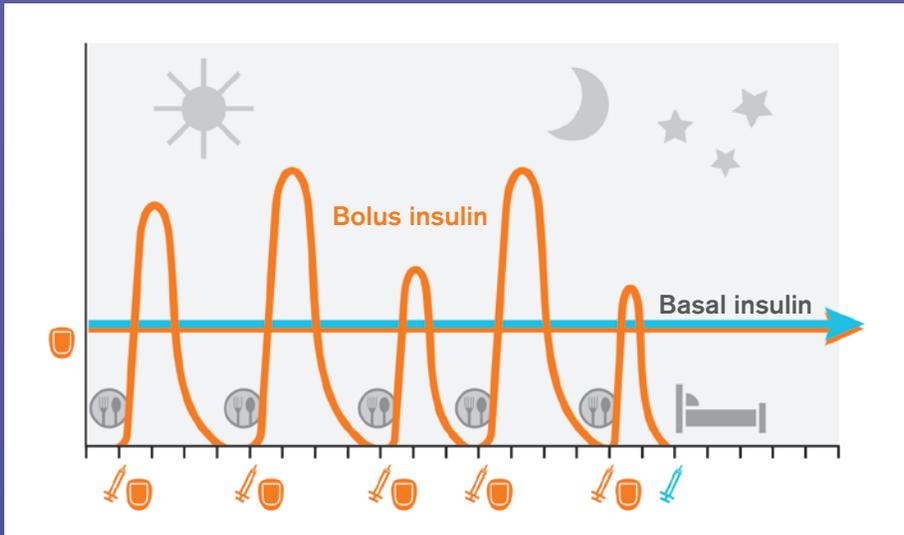
“If your child is old enough, let them help teach their sitter. You’ll be impressed!”

Donna Albright, RN, BSN

**Nurse Diabetes Educator,
Mother of 3 kids with T1D**

**Monroe Carroll Children’s Hospital
Diabetes Clinic at Vanderbilt Medical Center**





Insulin Terms to Learn

Basal Insulin: This is the insulin people take in specific doses to constantly (24/7) help keep their blood glucose in the target zone.

- Children who take *long-acting insulin* use this as their basal insulin.
- Children who use an insulin pump, Omnipod® Insulin Management System, or Omnipod DASH™ Insulin Management System get their *basal insulin* from a constant supply of *rapid-acting insulin*.

Bolus Insulin: People take *rapid-acting insulin* called *bolus doses* to keep glucose levels from rising too high after eating.

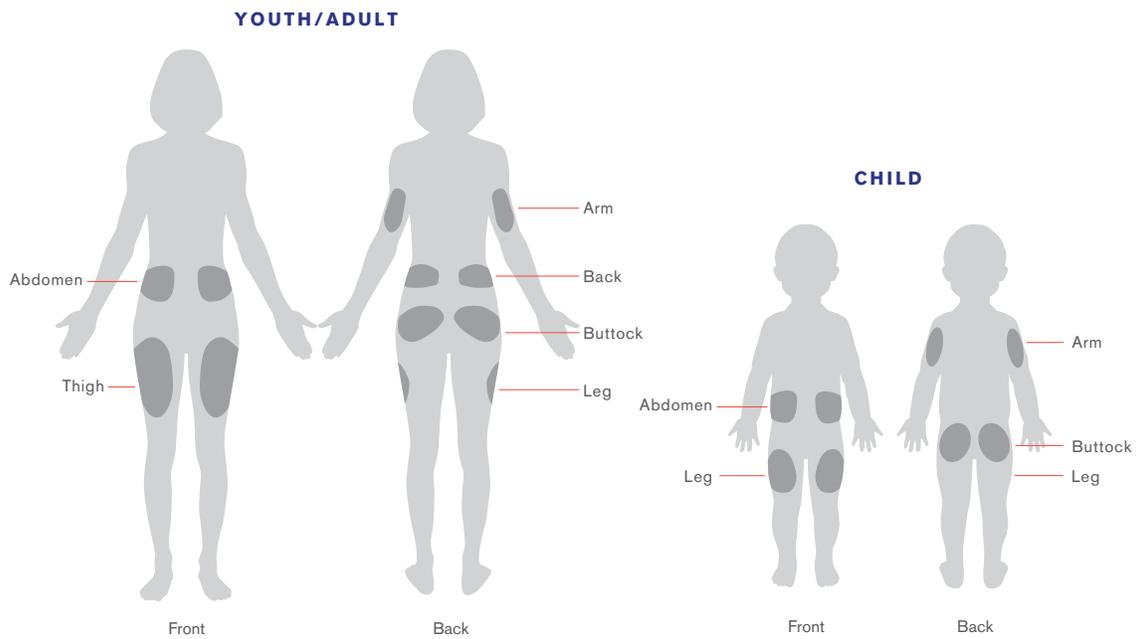
- Children typically take their *bolus insulin doses* before, during or after they eat a meal or snack.
- A dose of *bolus insulin* may also be used to lower a blood glucose level that is too high any time of day or night according to the child's insulin dosing plan.
- Children who take several shots a day typically use several *bolus insulin doses* with *rapid-acting insulin* each day.

Three Ways Children May Take Insulin

1. By Injection (shot)

Rapid-acting or *long-acting insulin* can be given using a vial (bottle) of insulin and a syringe. The syringe has a very short, thin needle on it. Some children use insulin pens. A short, thin needle must be placed on the pen for use. Some insulins are available in both vials and pens, while others are only available in pens.





Injection Sites

“Sites” are certain places on the body that are safe to give insulin. If you will give the child an insulin shot or observe them doing this, their caregivers will tell you the site or sites they want you to use. They’ll also, if needed, teach you how to give an insulin shot.

Step-by-step: how to give an insulin shot with a pre-filled syringe or pen (see notes)³

1. Wash hands
2. Select a site (review sites with caregivers)*



3. Use an alcohol wipe to clean the site and let it dry for a few seconds (do not blow or fan)

4. Gently lift up or “pinch up” the skin (1-2 inches of skin)



5. Holding the pinch, pick up the syringe or insulin pen like a pencil and hold it at a 90-degree angle (straight in) to the pinched skin

6. Push the needle into the skin at 90-degree angle with one quick motion
7. Let go of the skin pinch before you push the plunger to inject the insulin
8. Push the plunger at a steady moderate pace until the insulin dose is injected
9. Hold for 10 seconds
10. Remove syringe/pen and discard as directed by child’s caregivers

*See step by step: how to put a needle on an insulin pen on page 8.



Taking insulin:

With vial and syringe: ask the caregivers to prefill it for you with the insulin dose you will give. If you are asked to draw up insulin into a syringe on your own based on the dose the child needs, have the caregivers show you how to do this and demonstrate your know-how back to the caregivers.

Make sure the prefilled syringes are labeled with the type of insulin they contain.

With insulin pens: the caregivers will show you how to prime the needle on the pen.

Make sure there is enough insulin left in the cartridge for the hours you will be sitting.

Step-by-step: how to put a needle on an insulin pen.*

1. Wipe rubber seal with an alcohol swab
2. Select a new needle
3. Pull off the paper tab from the outer needle shield
4. Push the capped needle straight onto the pen and twist the needle on until it's tight
5. Pull off the outer needle shield. Do not throw away
6. Pull off the inner needle shield and throw it away
7. To prime the pen, turn the dose knob to select 2 units of insulin in the dose window
8. Hold pen with the needle pointing up. Tap the cartridge holder gently to collect air bubbles at the top
9. Continue holding pen with needle pointing up. Push dose knob until it stops and you see "0" (units) in the dose window. Hold the dose knob and count to 5 slowly. You should see drips at the end of the needle

The pen is now ready to be used for an insulin injection.

**A new needle must be put on the pen before each injection. To fill the pen needle with insulin requires priming.*

2. By Insulin Pump

Most insulin pumps are about the size of a deck of cards. An insulin pump is a computerized device that children wear clipped to a belt or tucked in a pocket. The pump device must be worn this way because it's attached to a long, thin tube, called an infusion set. The infusion set is inserted with a small, thin needle. It can go into a variety of sites including the abdomen, thighs, outer side of the upper part of the arms and upper part of either side of the butt. There are several different types of infusion sets. The needle in most of them is removed once the set is inserted. All that remains just under the skin is a very short, thin tube called a cannula. The infusion set sticks to the skin with a special tape.



The caregiver or child pushes buttons on the pump to give insulin. The *basal insulin* doses are set to deliver small amounts of insulin continuously, which may be different during the day and night based on the child's insulin needs. Children also take *bolus insulin* doses through a pump based on their need for insulin at meals, snacks and other times.

Some pumps available today have a built-in continuous glucose monitor (CGM).

Get familiar with where the child tends to wear their insulin pump and infusion set with the tubing and needle. Help them avoid pulling the set out when they're active, changing clothes and using the bathroom.

Some pumps are not waterproof and must be disconnected for activities like showers, baths, and swimming.



If the child wears a pump that's not waterproof, ask the caregivers how to deal with this situation. Follow their guidelines about disconnecting and reconnecting the tubing and pump and ask about replacing the insulin that was missed during time off of the pump.

If they want you to disconnect and reconnect the tubing, make sure they demonstrate this and you know how to do it.

3. By Insulin Pod

Pod therapy is a third way to give insulin.

The Omnipod® Insulin Management System is the only Pod therapy currently available. Children who use this system may call themselves a Podder™.

Omnipod® Insulin Management System

The Omnipod® Insulin Management System has just two parts – the Pod and the handheld computerized device called the Personal Diabetes Manager (PDM). The PDM contains a blood glucose meter. The Pod, which is small and lightweight, is worn on the body. It can be placed on almost any site where an insulin injection can be given. The person uses the PDM to direct the Pod to give both basal or bolus insulin doses.

With the Pod there is no infusion set tubing or needle. The Pod is put directly on the skin. Then, with the PDM, the user directs the Pod to insert a needle with a thin, short tube around it. The needle pulls out quickly and only the thin, short tube remains just under the skin.

The Pod* is waterproof so it doesn't need to be disconnected for showers, baths and swimming. This helps prevent glucose level spikes that can occur with disconnections.⁴



**The Pod has a waterproof IPX8 rating for up to 25 feet for 60 minutes; the PDM is not waterproof.*

***The DASH™ Pod has a waterproof IP28 rating for up to 25 feet for 60 minutes; the PDM is not waterproof.*

****The Dexcom System does not have integrated functionality with the Omnipod DASH™ System.*

Omnipod DASH™ Insulin Management System

Another form of Pod therapy is the Omnipod DASH™ Insulin Management System.

The Omnipod DASH™ Insulin Management System is a tubeless, wearable insulin pump that holds up to 200 units of insulin and delivers continuous insulin therapy through customizable basal rates and bolus amounts. The system consists of the Pod, which is a waterproof** insulin pump worn on-body, and the Personal Diabetes Manager (PDM), which is a handheld device used to wirelessly control the Pod. The PDM has a modern, touch-screen interface that is simple, colorful and intuitive.

The CONTOUR®NEXT ONE Blood Glucose Meter from Ascensia Diabetes Care is the only compatible meter that will transfer blood glucose readings to the Personal Diabetes Manager via Bluetooth® wireless technology.

With Bluetooth® wireless technology, the Omnipod DASH™ System will also feature a suite of mobile applications that will allow users quick and easy access to their PDM data on their smartphone and the ability to share therapy status information with up to 12 friends or family members. The Omnipod DASH™ System will have the Today View Widget which will give users the ability to see their CGM*** and insulin delivery information together on a single screen on their personal iOS mobile devices, helping to make diabetes management simple and seamless.



DASH™ app screenshots

How to Give a Bolus Dose with an Insulin Pump or Pod

If you will need to give a bolus insulin dose with a pump or Pod, ask the caregivers to show you the proper steps. Then, demonstrate this back to the caregivers to make sure you are doing it correctly.

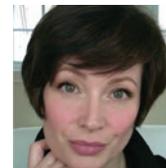
Follow the caregivers' instructions on how to give a bolus insulin dose.

Troubleshooting a Pump or Pod Therapy

Though unlikely, it is possible that a problem could occur with the insulin pump or the infusion set tubing. A problem could occur with the Pod the child has on. Talk to the caregivers about problems that may happen. Get specific instructions on how to troubleshoot various situations.

“The ease and reliability of current technologies can give kids and parents the confidence to travel and experience milestones safe and sound.”

Teresa Miller
Mother of son with T1D
Regional Coordinator
for Outreach, JDRF
Member of Board of Directors,
JDRF New England



About Glucose Monitoring

The purpose of checking glucose levels is to help caregivers and children see how the food they eat, insulin they take, activities they do and other factors, affect their glucose levels and whether their results are in their target zones.

Glucose monitoring allows caregivers and children to make immediate care decisions, such as treating high or low glucose levels, as well as to make changes in diabetes care over time.

Two Ways to Monitor Glucose Levels

Today, because of advances in technology, there are two ways caregivers and children may check and track their glucose levels. One is called blood glucose monitoring and the other is called continuous glucose monitoring. They may use both types.



Blood Glucose Monitoring (BGM)

What is a blood glucose monitor?

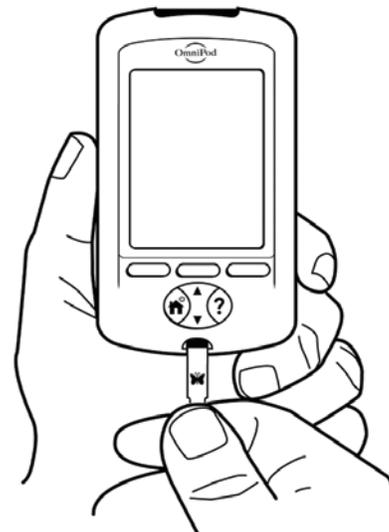


Blood glucose monitors, also called BG meters, come in a variety of shapes and sizes. Most are quite small and the supplies are easy to carry. Typically, meters have two parts – a meter and strips. The meter is used to measure the glucose level. A non-reusable BG strip is inserted into the meter and the tip of the BG strip is touched to the drop of blood. The blood glucose level will then appear on the meter's display.

Children with T1D or their caregivers typically check

glucose levels several times a day. This depends on whether they just do BGM or also use a continuous glucose monitor.

The PDM in the Omnipod® Insulin Management System contains a glucose meter. The BG strip is placed in the meter (see the diagram to the right) in the PDM to get a reading.



BGM Supplies

- Meter
- Bottle (called vial) of BG strips (make sure to take one out for a check and then quickly put the cover on)
- Device (called lancing device) and lancet (piece with needle on it) to prick finger to get a blood sample
- Ability to wash and dry hands to get a good reading



How to do a BGM Check

1. After making sure your and the child's hands are clean, insert a BG strip into the meter
2. Insert a new lancet into the lancing device
3. Prick the side of the fingertip to get a small drop of blood. (Note: Do not use near the fingernail or in the center of the pad, but rather, to the side)
4. Touch and hold the edge of the BG strip to the drop of blood
5. Wait for result on the meter's display
6. Dispose of the BG strip as directed



Make sure that all of the BGM supplies are in one spot for easy access and checking.

Ask the caregivers to show you how to use the BGM supplies and then demonstrate to them that you understand how to do it.



If you think a child might have a low blood glucose level, it's best to do a glucose check. Based on the results, check in with the caregivers or take the actions that you and the caregivers have agreed on.

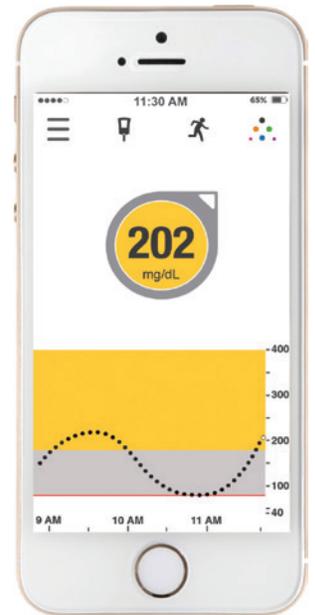
If you are sitting overnight, ask if and when a blood glucose check during the night is needed.

Continuous Glucose Monitoring

What is a Continuous Glucose Monitor (CGM)?

A Continuous Glucose Monitor is a small device that tracks and shows the user's current glucose level throughout the day and night. It gives nearly 300 readings a day. The CGM also shows whether the glucose level is going up or coming down and whether that is happening quickly or slowly. People using a CGM usually don't need to do as many BG checks a day. Typically people set alarms in their CGM to get alerts if the glucose level is lower or higher than their target range. This helps a person take action to prevent glucose levels from getting too high or low.

Dexcom, Inc. makes a few different types of Continuous Glucose Monitors. One type is the Dexcom G5[®] Mobile. This CGM must be "calibrated", or confirmed against a BG check to assure that the results remain accurate. However, this system is FDA-approved to let you make treatment decisions about high/low blood sugar without a BG check. It's important to know that if the user is taking acetaminophen (a common pain reliever or fever reducer), or if symptoms/expectations do not match the CGM readings, not doing a BG check may result in a low blood glucose level.



Dexcom G5[®] Mobile

"Today's technologies and tomorrow's advances ease parents' and sitters' anxieties. Pump or Pod therapy with historical information along with a CGM allow the sitter and parents to access critical information from any location and take steps to prevent serious situations."

Courtney Gale

Person with T1D

Former Sitter of T1D kids

College Diabetes Network (CDN)

Chapter Leader

National Advocate, Type One Nation



“Using available technologies are now a key piece of overseeing diabetes care when you’re not with your child. You can watch your child’s glucose levels on your smart phone app and then direct insulin adjustments, and more.”

Scott Benner

Father of a daughter with T1D

Host of the Juicebox Podcast



Another type of CGM that Dexcom makes is the Dexcom G6[®]. Pictured below, the Dexcom G6[®] CGM is FDA-permitted to be used without calibration. However, if the user feels the number displayed is inaccurate, it may be a good idea for them to do a BG check. Like the Dexcom G5[®] Mobile, the FDA has approved making treatment decisions about high/low blood sugar without a BG check.



The Dexcom G6[®] CGM has three parts:

- A.** *Simple auto-applicators:* a one-touch applicator easily inserts a small sensor just beneath the skin
- B.** *Sensor and transmitter:* a slim sensor continuously measures glucose levels just beneath the skin and sends data wirelessly to a display device through a transmitter
- C.** *Display device:* a small touch screen receiver or compatible smart device displays real-time glucose data

The Dexcom Follow app allows caregivers to view the CGM results. Caregivers can view the results on their compatible smart device.

If the caregivers use the Dexcom Follow app, which allows them to see readings from their child’s CGM remotely on their smart phone, ask whether they will view the results during the time you’re with the child and how they will communicate results and discuss actions to take with you.



Ask the caregivers about target glucose ranges they use for their child. Check to see that the caregivers have filled these targets in on your sitter checklist (accompanying this Smart Sitters Guide).

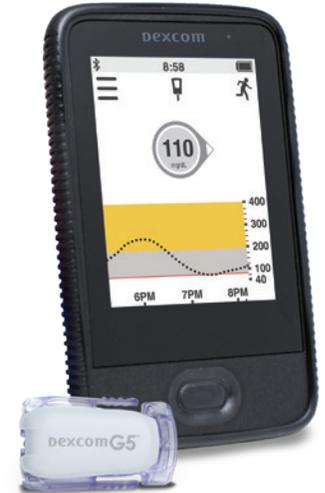
Ask the caregivers if they have a target glucose level for their child to be at before being physically active.

CGM Supplies:

- Sensor
- Transmitter
- Receiver
- BGM supplies needed for calibration (see BGM supplies on page 13)

How to Check CGM Reading:

- Look at the read out of the glucose number (result) on the receiver or smart device
- Observe for any trend arrow
- Listen for alarms



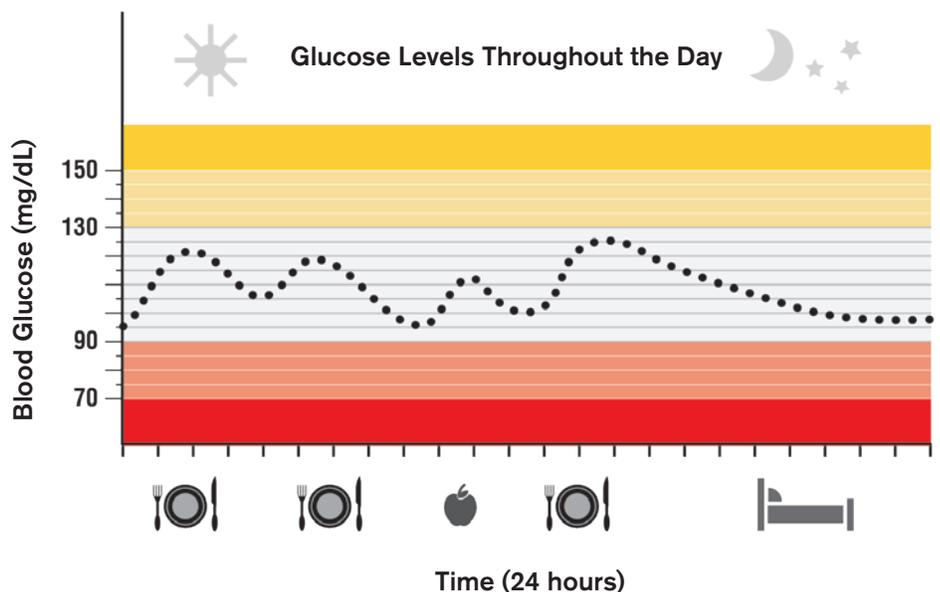
Dexcom G5® Mobile

Targets for Glucose Levels

Whether a person uses a BGM or CGM, the goal is to try to keep the child's glucose levels within specific target zones as much as possible. Keeping glucose levels in these ranges helps prevent glucose from getting too low or high.

The following are the glucose level target zones for children with diabetes published by the American Diabetes Association (ADA).⁵ Glucose targets for children may vary depending on the child's age and what their healthcare provider recommends.

- Before Meals: **90-130 milligrams/deciliter (mg/dL)**
- Bedtime: **90-150 milligrams/deciliter (mg/dL)**



When to do a BGM and/or CGM Check

Here are a few times that caregivers and children with T1D typically check BG levels:



- Before meals or snacks
- If/when a meal is late or delayed
- After treating a low blood glucose level
- Before bedtime and during the night
- Signs and symptoms of low blood glucose (see page 19 to learn about these)
- Before, during, and after being physically active or participating in a sporting event

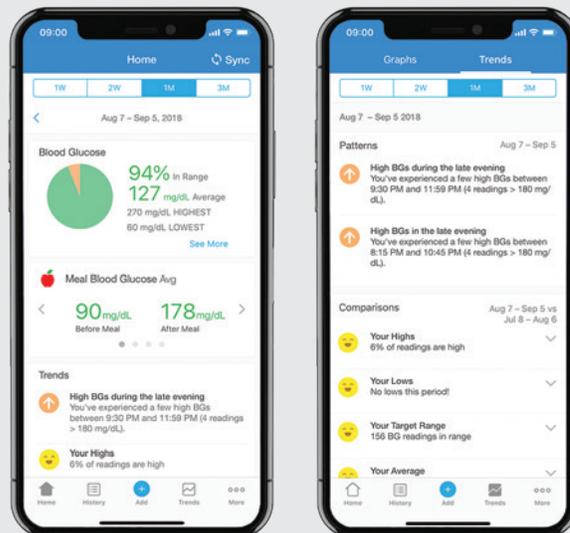
How to Manage BGM Data and Gain Insights

People with diabetes record and track their glucose results (BGM and/or CGM) regularly. This helps them use the results to take quick action and to monitor them over time.

Caregivers may keep an electronic or written log of BGM and/or CGM results.

Glooko is a popular data management system that shows BGM, CGM and pump data in colorful reports and graphs. Glooko is used by healthcare providers, patients, and their Care Teams, to identify patterns, trends and important insights.

Glooko can be accessed on any smart phone from the Glooko Mobile App or on the computer at www.my.glooko.com.



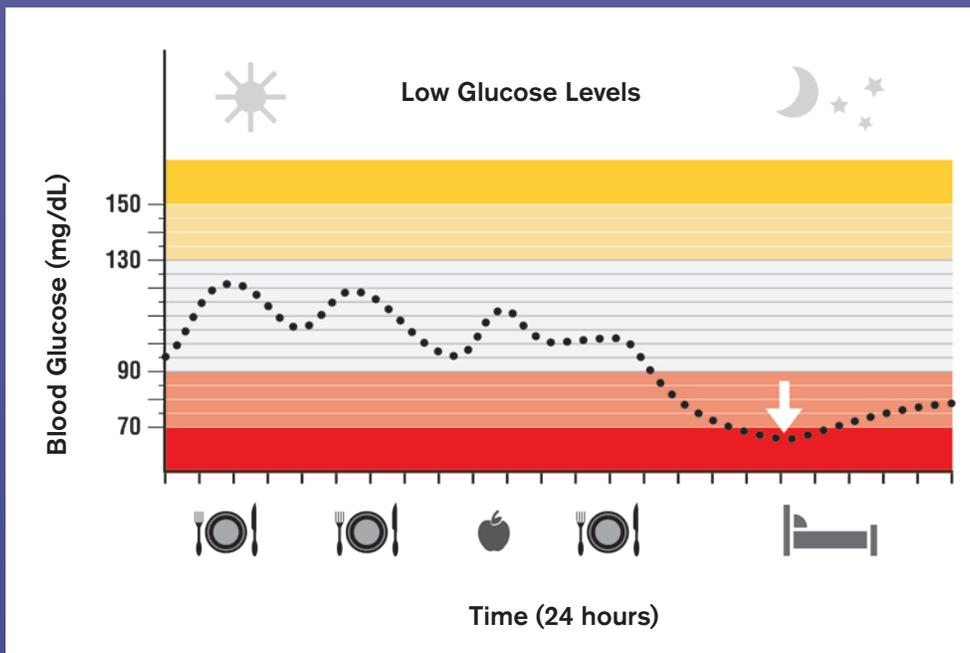
All Omnipod® System patients have access to a free Glooko account.



Ask the caregivers what type of log they keep and if they want you to record results. If so, record the time of the reading and the result.

Ask the caregivers if they want you to communicate blood glucose levels to them. If so, ask if they want to know all the results or just results that are too high or too low based on the targets they use for their child.

Low Blood Glucose



Low blood glucose (*hypoglycemia*) means that there is too little glucose in the blood. Low blood glucose can be mild, moderate or severe based on the blood glucose number and the child's symptoms.

It's important to detect and treat low blood glucose as quickly as possible to decrease the risk of a more severe low.

Two diabetes care associations define hypoglycemia:

- The American Diabetes Association (ADA): at or below 70 milligrams/deciliter (mg/dL) is sufficiently low for treatment with fast-acting carbohydrate and/or dose adjustment of glucose lowering therapy (insulin for T1D).⁵
- The International Society of Pediatric and Adolescent Diabetes (ISPAD): 65 mg/dL defines hypoglycemia but recommends 70 mg/dL as the point to treat it to stop glucose from falling further.⁶

Reasons Low Blood Glucose May Happen

- Too much insulin
- Too little food, especially carbohydrates (e.g. the child doesn't eat the planned meal or snack) if insulin was given to cover this food
- Delayed meal or snack
- Strenuous physical activity or play (may occur soon after or hours after)
- Illness (especially if child is vomiting or has diarrhea)
- Hot bath or shower after just receiving an insulin injection (increases insulin absorption speed)

Low Blood Glucose Signs and Symptoms

Symptoms of low blood glucose can make the child feel or act differently or cause sudden changes in behavior. A child may show symptoms of low blood glucose when their glucose is dropping quickly, even if the glucose level isn't actually low.

Be on the lookout for low blood glucose signs and symptoms when the child is especially active, not eating their complete meal or snack, or are ill.



Hungry



Shaky/Jittery



Tired



Sweaty



Irritable



Cranky



Anxiety



Confusion



Headache



Blurred or double vision



Pounding heart and slurred speech



Dizziness

How to Treat Low Blood Glucose

To raise the glucose level, a child needs fast-acting, easy to digest carbohydrates. Children typically use some food, beverage or other treatment that equals 15 grams of carbohydrates to treat a low blood glucose. Many caregivers use what's called the 15/15 guideline to treat low blood glucose.

Sources of 15 grams of carbohydrates are:

- 3-4 glucose tabs
- 1 Tablespoon of sugar (3 sugar cubes or packets) or syrup
- ½ cup (4oz) juice or regular soda (not diet)
- 1 cup (8oz) fat free milk
- 3 graham cracker squares

Do not use foods that are high in fat, like chocolate or candy containing nuts. These raise blood glucose levels more slowly.



15/15 guideline steps:

1. Give 15 grams of fast-acting, easy to digest carbohydrates to raise a low blood glucose level*
2. Recheck blood glucose 15 minutes after the treatment. If the blood glucose level is still below the goal, then repeat steps for treating low blood glucose
3. When the blood glucose level is back up (usually over 100 mg/dL), offer a small snack to keep glucose in the target zone



**Smaller children may need less carbohydrates*

Tips to treat Mild or Moderate Low Blood Glucose

- Treat mild lows quickly to help prevent a more severe low
- It takes at least 10-15 minutes or longer for blood glucose level to rise after giving the child some source of carbohydrates
- Be patient and avoid over-treating lows by giving more carbohydrates and not waiting at least 10-15 minutes

Low Blood Glucose Level If Using Insulin Pump or Pod Therapy

If you're sitting for a child on an insulin pump or using Pod Therapy and he or she has a low blood glucose level, use the 15/15 guideline or the steps the caregivers have given you to treat this. If the low blood glucose level persists, contact the caregivers immediately. They may tell you to suspend insulin delivery.

Severe Low Blood Glucose

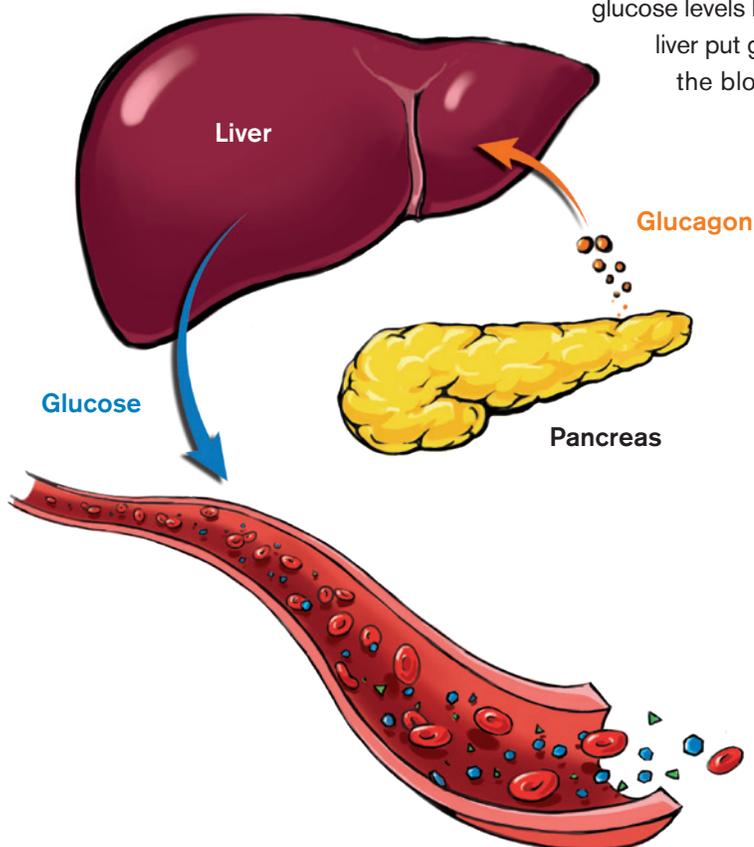
A severe low blood glucose is a glucose level below the number provided by caregivers and/or if the child is:

- unable to speak
- unable to respond to you (unconscious)
- unable to consume food or drink (Note: do not try to feed the child if they are unconscious, as they could choke)

A severe low glucose level needs to be treated immediately with glucagon.

Treating with Emergency Glucagon

Glucagon is a hormone that raises very low blood glucose levels. Like insulin, glucagon is also made in the pancreas. The effect of glucagon is the opposite of insulin. Glucagon raises glucose levels by helping the liver put glucose into the blood stream.



Know the glucose level that you should treat as hypoglycemia.

Know the signs and symptoms the child typically has with hypoglycemia or if they don't tend to have symptoms.

Know the preferred treatments to use and the amount to give.

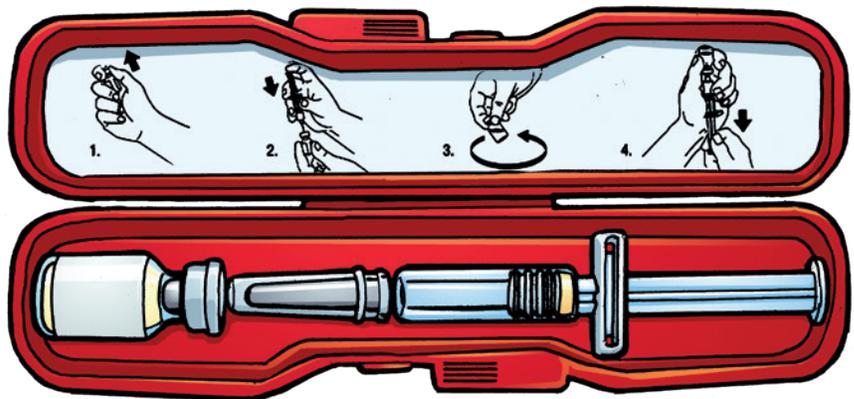
Be sure you ask the caregivers to show you how to suspend insulin delivery if the child wears a pump or Pod. To suspend insulin delivery if the child wears a pump, take the infusion site off. If the child wears a Pod, remove it.



If the caregivers want you to be able to give their child glucagon and you feel comfortable doing so in an emergency situation, make sure to practice with the caregivers the proper way to give glucagon.

Once you've given glucagon, contact the caregivers, as they prefer. If you're unable to reach the caregivers, call 911. Do not leave the child alone.

A glucagon kit contains a vial of powder and a pre-filled syringe with liquid. Directions for mixing and injecting are in the package insert included with the kit and are also available as a smartphone app.



How to Prepare and Use an Emergency Glucagon Kit

1. Take off seal from the vial of glucagon powder



2. Take cap off needle

3. Insert syringe into vial of powder and push fluid into vial



4. Remove syringe from vial, gently shake vial until mixed (one uniform solution)

5. Insert the same syringe back into the vial and withdraw the amount of liquid that the caregivers have told you to use



6. Put needle into the thigh muscle and inject glucagon. Note: Do not pinch the skin when giving a glucagon injection

After Glucagon has been given:

- Turn the child onto his/her side, as glucagon can cause vomiting. Do not leave the child alone
- Contact the caregivers. If unable to reach caregivers, call 911
- Check his/her blood glucose level again
- As soon as the child wakes up (could take a few minutes) and is able to eat, give them fast acting carbohydrates, sips of juice and water. After 10 minutes give the child a solid food snack to continue to raise their blood glucose level



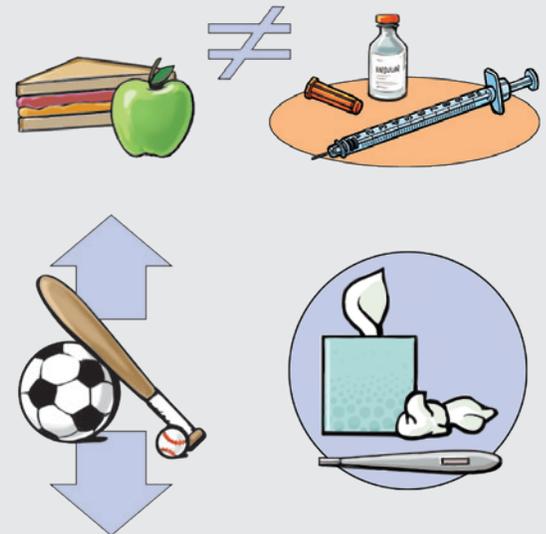
High Blood Glucose

High blood glucose (*hyperglycemia*) means that there is too much glucose in the blood.

It's important to detect and treat high blood glucose quickly to keep it from rising higher.

Reasons High Blood Glucose May Happen

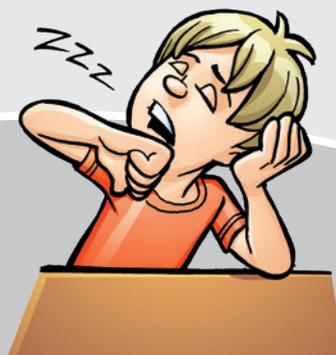
- Too little insulin
- Too many carbohydrates, food
- Incorrect carbohydrates estimate (too low)
- Incorrect insulin dose (too little)
- Less physical activity or play than usual
- Too much physical activity with not enough insulin
- Being stressed, excited or scared
- Illness or infection like a flu or cold



Signs and Symptoms of High Blood Glucose



Increased thirst
or hunger



Tired



Irritable or mean

Check for Ketones

Ketones are a type of acid that can form in the body when blood glucose levels are very high (usually over 300 mg/dL). They form because the body starts to burn fat for energy. When fat is burned, ketones form. This occurs because the body can't get glucose into the cells without insulin being available. If not treated, high ketone levels can cause a child with T1D to become very sick.

Ketones may be high:

- During an illness or after vomiting even once
- Missed dose of insulin
- Interrupted insulin delivery from a pump or Pod

When to check for ketones:

- If blood glucose is high (usually >300 mg/dL)
- During illness or after vomiting even once
- If an insulin injection is missed
- If an insulin pump or Pod fails and is no longer delivering insulin

Checking Ketones

- In urine: The caregivers will show you the ketone strips and how to read them
- In blood: The caregivers may have a blood glucose meter that can also check for blood ketones. They will show you how to use it



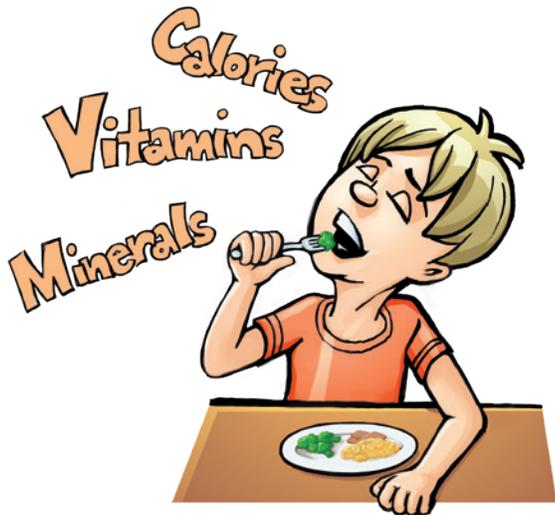
Know the blood glucose level that the caregivers define as high blood glucose for their child.

Know the steps the caregivers want you to take to manage the high blood glucose level.

Know at what blood glucose level and under what circumstances you should contact the caregivers for directions.

If you've just checked a blood glucose level and this number doesn't seem right based on how the child is acting, then recheck it. It may be that you or the child didn't do the check with clean hands. Doing a blood glucose check having just touched fruit, sticky or sweet stuff can cause a falsely high reading.

Food and Carbohydrate Counting



Everyone needs to eat food and sip beverages for energy (calories), vitamins and minerals. That's true for children with diabetes, too. However, because their bodies don't make insulin [see page 4], they and their caregivers need to choose the types and amounts of food and beverages they eat and drink very carefully.

To help children with diabetes keep their glucose levels within their target zone, they have to count the amount of carbohydrates, carbs for short, in their foods and take the right amount of insulin. They do this by what's called carbohydrate, or carb, counting.

Define Carbohydrate

Carbohydrate is one of the three nutrients in foods that contain calories. The other two are protein and fat. Think of foods and beverages with calories, like milk or juice, as packages with differing amounts of these three nutrients: carbohydrates, protein and fat.

For example:

- milk contains carbohydrates, protein and some fat, depending on whether it's fat-free, low fat or whole milk
- bread is mainly carbohydrates with a bit of protein
- broiled fish or chicken contains mainly protein and some fat, but no carbohydrates
- pizza with cheese contains carbohydrates, protein and fat



“Keep meals and snacks to foods that you know the insulin needs for and likely glucose response. Your sitter and child will have an easier and more relaxing time together.”

Scott Benner
Father of a daughter with T1D
Host of the Juicebox Podcast



Carbohydrates

Focus on Carbohydrates

The focus is on carbohydrates because it's the carbs in foods (and drinks) that, once eaten, turns into glucose. This causes blood glucose levels to go up. Protein and fat take a longer time to digest and therefore raise blood glucose levels more slowly.

Everyone needs to eat certain amounts of carbohydrates, including children with diabetes. That's because they need energy from carbohydrates. It's our bodies preferred source of energy. Plus, foods that contain carbohydrates provide important vitamins, minerals and dietary fiber.

These are the food groups that contain calories mainly from carbohydrates:

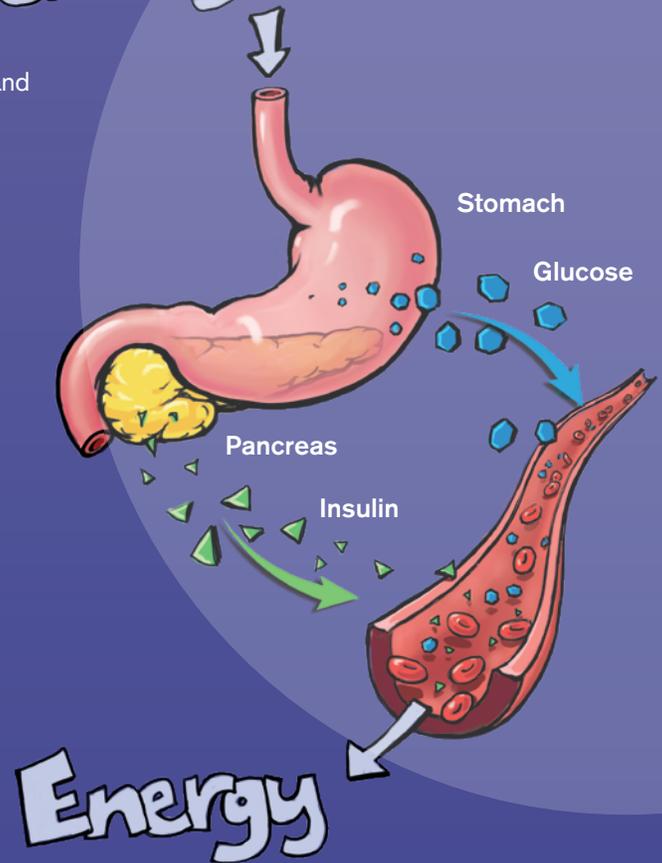


- vegetables (all types)
- fruits and fruit juice (all types)
- milk and yogurt
- starches and grains
- beans and peas (legumes)



Two other categories of foods and drinks contain carbohydrates, but they also contain lots of calories and typically very few vitamins and minerals. Bet you can guess what these are!

- Sugary foods, like sweetened soft drinks (soda), jelly beans or pancake syrup
- Sweets like cake, cookies and ice cream





Be sure to ask caregivers about any food allergies or foods a child can't eat. Some children with T1D also have celiac disease. Both diabetes and celiac disease are autoimmune conditions. Managing celiac disease means having to eliminate any foods that contain gluten, a protein found in wheat, rye and barley.

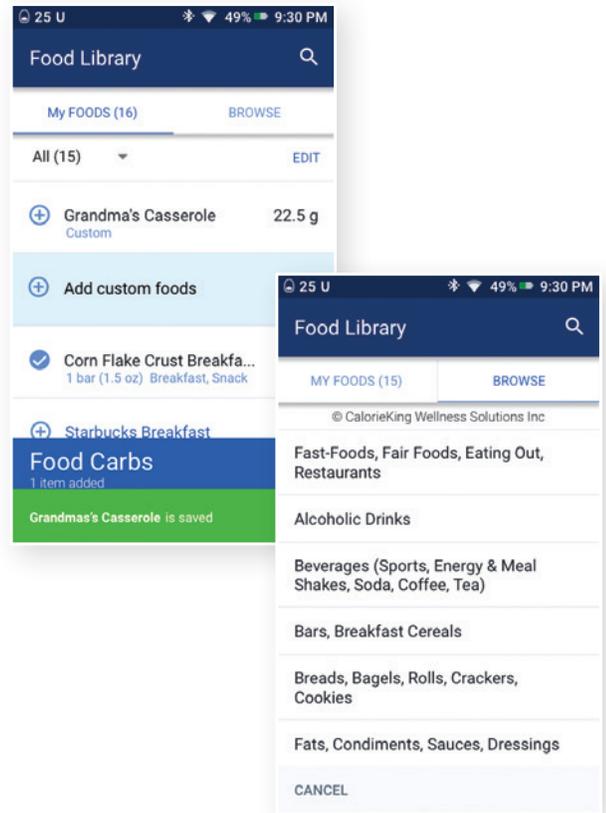
Ask the caregivers what the child's insulin-to-carbohydrate ratio is.

If the number of hours that you'll sit includes meals or snacks, you'll want to know:

- ✓ specific foods and amounts to serve
- ✓ when to feed meals and snacks
- ✓ how much insulin to give and how (injection, pump or Pod)
- ✓ when to give the dose based on the time of meals and snacks (before, during or after)
- ✓ what action to take if based on what and how much is eaten

Count the Carbohydrates

Most children with T1D count the grams of carbohydrates they eat in meals and snacks. This helps them figure out the amount of insulin to take in order to prevent their glucose levels from going too high after eating. The name for this type of insulin dose is called a bolus dose [see page 6]. Children who take shots typically use a *rapid-acting insulin*. Children who use an insulin pump call this a *bolus dose* and also typically use *rapid-acting insulin*.



How to Figure Out a Bolus Dose for Meals and Snacks

Most children use what's called an *insulin-to-carbohydrate ratio* to figure out their meal or snack time insulin doses. This means that one unit of insulin will control blood glucose levels for a certain amount of carbohydrates. An example may be one unit of insulin for 20 grams of carbohydrates. Most insulin pumps have a "Bolus Calculator" feature. This feature will allow the child or caregivers to enter in their blood glucose level and how many carbohydrates they are eating. Using this information and the child's insulin-to-carbohydrate ratio, the pump will calculate the amount of insulin needed.



How to Give a Bolus Insulin Dose

A *bolus insulin* dose for food is given either as an injection or by a pump or Pod [see pages 6-11].



How to Figure Out a Bolus Insulin Dose to Lower High Blood Glucose Levels

Most children use what's called an *insulin correction factor* to figure out how much extra insulin they need to lower a high blood glucose level. Typically they know that one unit of insulin lowers his/her blood glucose level by a certain number of points. An example may be one unit of insulin is likely to lower blood glucose down 75 points.

“Make no mistake, the tools available now to care for diabetes have come ‘light years’ in just the last ten years. But you still must stay diligent about highs and lows.”

Tom Karlya

Father of 2 kids with T1D

**DiabetesDad.org, advocate
and VP Diabetes Research
Institute Foundation**



Ask when to give the *bolus dose* of insulin – before, during or after the child eats. (Keep in mind the amount children eat and drink at a meal or snack can be unpredictable. Sometimes caregivers may suggest giving the insulin after eating so you can figure out how much they ate.)

Ask how soon after the *bolus insulin dose* you should check the child's glucose level.

Ask the caregivers what the child's insulin correction factor is.



“For the good of family dynamics, pay attention to each other and nurture your marriage. To do so make sure to secure and train sitters with whom your child feels comfortable.”

“Good sitters for your child are ones that your child is comfortable with. Just because sitters can manage diabetes well doesn't mean your child will feel comfortable with them while you are away.”

Cynthia M. Deitle
Mother of a son with T1D
Children with Diabetes volunteer



Forms for Caregivers and Sitters

The Smart Sitters Guide offers checklists to assist caregivers and sitters. The checklists easily and quickly enable caregivers to share important details about their child with T1D and their diabetes care and self-care know how.

These six forms can be accessed on Insulet's website, myomnipod.com. We suggest you make several copies of each for your files. Maintain one as your master copy.

Forms you'll find on myomnipod.com:

- For the Sitter: About the Parents, Child with T1D, Other Children
- For parents: About Your Sitter
- Sitting: Two to Three Hours
- Sitting: Three to Five Hours
- Sitting: Overnight
- Locations of Diabetes Supplies



Insulet is pleased to provide this resource full of practical information and hands-on tips to help everyone enjoy successful experiences spending time away from each other – you, your child and your sitters.

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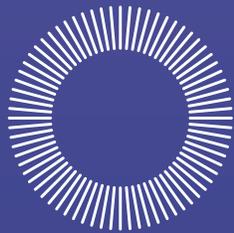
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