Memorial Sloan Kettering Cancer Center

PATIENT & CAREGIVER EDUCATION

About Newly Diagnosed Type 1 Diabetes Mellitus (T1DM)

This information explains what type 1 diabetes mellitus (T1DM) is and what causes it. It also explains how to manage T1DM after you get diagnosed.

About type 1 diabetes mellitus

Type 1 diabetes mellitus (dy-uh-BEE-teez MEH-lih-tus) is also called T1DM. It's an autoimmune disease, which means your body attacks its own healthy tissues and organs.

T1DM is when your body kills the cells in the pancreas that make insulin. Your body can no longer make insulin on its own. Insulin is a hormone that helps glucose (sugar) enter cells and provide energy. Without insulin, your blood glucose level can become very high, enough to harm you. This is called hyperglycemia (HY-per-gly-SEE-mee-uh), also known as high blood sugar.

Autoimmune T1DM often starts in childhood, but it can happen at any age.

T1DM is permanent (does not go away). You'll need to treat it all of your life. People with T1DM must take insulin injections (shots) to replace the insulin their body cannot make. Read *About Insulin for Diabetes or Treatment-Related Hyperglycemia* (www.mskcc.org/pe/insulin-diabetes-hyperglycemia) to learn more.

Treatments that can cause T1DM

Immunotherapy

Immunotherapy is a treatment that boosts your immune system to help fight diseases like cancer. Some immunotherapies can also target the cells that make insulin in your pancreas while fighting the cancer cells.

T1DM is a rare but serious side effect of these treatments. About 1 in 100 people who get immunotherapy develop T1DM.

Total pancreatectomy

A total pancreatectomy (PAN-kree-uh-TEK-toh-mee) is a surgery to take out all of your pancreas. This is sometimes done to treat problems that are precancerous (can become cancer).

The pancreas is the only organ that makes insulin, and people who have this surgery can no longer make insulin. This causes T1DM.

How to manage T1DM

Diabetes can cause long-term health problems. It's important to manage diabetes during cancer treatment.

If you are newly diagnosed with T1DM, it's very important to learn how to stay safe and healthy. Here are some tips and reminders to keep you safe.

Test your blood glucose

Your goal is to keep your blood glucose (BG) level between 100 and 200 milligrams/deciliter (mg/dL). You'll use a glucometer or a continuous glucose monitor (CGM) to test your glucose.

Most people test their glucose when they wake up, before meals, and at bedtime. This will help you decide how to manage your blood glucose.

- **Have your supplies with you.** Even if you're using a CGM, always have your blood glucose meter and testing supplies with you as a backup. These include a lancing device, test strips, and lancets. Doing a fingerstick can help you make sure your CGM glucose reading is correct. This lets you decide how to manage your glucose. Read *About Your Continuous Glucose Monitor (CGM)* (www.mskcc.org/pe/cgm) to learn more.
- **Check your blood glucose often.** Avoid going for more than 6 hours without checking your blood glucose, unless you're asleep.
- **Keep track of your supplies.** Be sure to regularly keep track of how much you have so you do not run out. You may be able to get these supplies at a lower cost with a prescription. Talk to your diabetes healthcare provider about getting a prescription for these supplies. You can also buy blood glucose testing strips over the counter if you run out.

Use insulin safely

People with T1DM must take both rapid-acting and long-acting insulin. Rapid-acting means it starts to work right away. Rapid-acting insulin helps manage the rise in blood glucose that happens after eating. Long-acting means it works for a longer time. Long-acting insulin helps manage your blood glucose between meals and while you sleep.

Follow your diabetes healthcare provider's instructions for taking insulin. Read *About Your Continuous Glucose Monitor (CGM)* (www.mskcc.org/pe/cgm) About Insulin for Diabetes or Treatment-Related Hyperglycemia to learn more.

Always have at least 1 extra of each insulin pen. Keep these in the refrigerator until you use them. Read *How to Use an Insulin Pen* (www.mskcc.org/pe/insulin-pen) to learn more.

Rapid-acting insulin

Most people take rapid-acting insulin a few times a day, before each meal. Rapid-acting insulin works for 4 hours. Take rapid-acting insulin within 15 minutes before your meal, at least 4 hours apart.

Your diabetes provider may tell you to take a correctional dose of insulin

whether you are eating or not. If they do, follow their instructions. A correctional dose is an extra dose of rapid-acting insulin. This helps to lower your blood glucose and manage hyperglycemia.

When taking rapid-acting insulin, try not to miss any meals. If you do, you should still check your blood glucose. To help prevent hypoglycemia (low blood sugar), only take mealtime rapid-acting insulin if you're eating at least 30 grams of carbohydrates. Read *How To Manage Your Blood Glucose (Blood Sugar) With Your Diet* (www.mskcc.org/pe/blood-sugar-diet) to learn more.

Long-acting insulin

Long-acting insulin helps keep your blood glucose levels stable when you're not eating. Examples are between meals and throughout the night. Most people take long-acting insulin once or twice a day.

If you take long-acting insulin once a day, take the dose at the same time every day.

If you take long-acting insulin twice a day, take the doses 12 hours apart at the same time every day.

Manage hyperglycemia

Hyperglycemia is when your blood glucose level goes above 200 mg/dL. This can happen if you eat too many carbohydrates or do not take enough insulin.

Symptoms of hyperglycemia include feeling like you need to urinate (pee) often, feeling very thirsty, and having dry mouth. Read *About Hyperglycemia (High Blood Sugar)* (www.mskcc.org/pe/high-blood-sugar) to learn more.

If you eat a snack between meals, do not take extra insulin. Taking insulin doses too close together can cause hypoglycemia.

To prevent hyperglycemia, limit the amount of carbohydrates in your snack. Instead, eat something high in protein or non-starchy vegetables. High protein snacks include a serving of cheese, peanut butter, or Greek yogurt. Non-starchy vegetables include spinach, mushrooms, broccoli, and peppers.

Prevent diabetic ketoacidosis (DKA)

Diabetes ketoacidosis (DKA) is a medical emergency that happens when your body does not have enough insulin. **DKA can be life-threatening (it can cause death).** If you have DKA or think you have DKA, call for medical help right away. Read *Diabetic Ketoacidosis (DKA) and Ketone Urine Testing* (www.mskcc.org/pe/dka-ketone-urine-testing) to learn more.

Symptoms of DKA include:

- Urinating (peeing) often.
- Extreme thirst (feeling thirsty even after drinking a lot of fluids).
- Fruity-smelling breath.
- Deep, fast breathing.
- Feeling confused.
- Abdominal (belly) pain.

To prevent DKA:

- Never skip your long-acting insulin dose. If your blood glucose is low and you are concerned, call your diabetes provider. They'll give you instructions or talk with you about the best plan for you.
- Be ready to manage your diabetes when you have "sick days." Never stop taking your insulin before you talk with your diabetes healthcare provider first. Read *How to Manage Diabetes When You're Sick* (www.mskcc.org/pe/manage-diabetes-when-sick) to learn more.

Treat hypoglycemia (low blood sugar)

Hypoglycemia is when your blood glucose level goes below 70 mg/dL. This can happen if you did not eat enough or are more active than usual. Symptoms of hypoglycemia include shakiness, fast heartbeats, dizziness, and sweating. Read *About Hypoglycemia (Low Blood Sugar)* (www.mskcc.org/pe/low-blood-sugar) to learn more.

It's important to treat hypoglycemia right away. Always carry something with you that has 15 grams (g) of rapid-acting sugar to treat hypoglycemia. This includes glucose tablets or 4 ounces of juice. Contact the provider who prescribes your diabetes medicine any time you have hypoglycemia.

If you had a total pancreatectomy, you may not always have the symptoms of hypoglycemia. Try to have the same amount of carbohydrates with every meal as much as possible. This will help balance your blood glucose level. It will also help your diabetes healthcare provider know how much insulin you need.

Prevent hypoglycemia

It's best to prevent hypoglycemia before your blood glucose goes below 70 mg/dL. When your blood glucose is between 70 and 99 mg/dL, it's important to have a balanced snack. Your snack should include:

- Something high in protein, such as a serving of cheese, peanut butter, or Greek yogurt.
- One serving of a carbohydrate, such as a small apple, half a banana, a slice of toast, or 6 small crackers. A serving of carbohydrates is equal to 15 grams.

Avoid having a rapid-acting sugar, such as juice or soda. This can cause your blood glucose to go too high. Read *How To Manage Your Blood Glucose (Blood Sugar) With Your Diet* (www.mskcc.org/pe/blood-sugar-diet) to learn more.

Hypoglycemia unawareness

Your body gives you warning signs when your blood sugar drops too low. These include feeling shaky, sweaty, hungry, dizzy, or anxious. These warning signs tell you something is wrong so you can treat the low blood sugar right away.

Hypoglycemia unawareness is when your body stops giving you those warning signs. Your blood sugar can drop to a harmful level without you knowing. This is common in people who have had diabetes for many years. It's also common if you have low blood glucose very often.

Over time, your body gets used to hypoglycemia and stops reacting the way it should. You may pass out without showing any other signs or symptoms.

It can be very harmful and lead to a medical emergency if you do not get treated right away. This is why it's important to check your blood glucose regularly. Follow your diabetes healthcare provider's instructions for how often you should check your blood glucose.

Things to buy if you have T1DM

These things can help you manage T1DM:

- Ketone test strips. Use these to measure the ketones in your urine.
- Medical alert bracelet. This will help first responders provide the right care if you have a medical emergency. The bracelet should say either:
  - T1DM
  - Type 1DM
  - Type 1 diabetes
- Glucose tablets or glucose gel. These are easy to carry with you when you're not home.
- A food scale. This can help you measure portion sizes and learn how much food is in a serving.

You can buy these things online or at your local drugstore. You do not need a prescription.

Contact information

Write your diabetes provider's information here:

- Name: _____
- Phone number: _____
- Email: _____
- Fax: _____
- Next appointment: _____

If you have questions or concerns, contact your healthcare provider. A member of your care team will answer Monday through Friday from 9 a.m. to 5 p.m. Outside those hours, you can leave a message or talk with another MSK provider. There is always a doctor or nurse on call. If you're not sure how to reach your healthcare provider, call 212-639-2000.

For more resources, visit www.mskcc.org/pe to search our virtual library.

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