



DIABETES

EDUCATION BOOKLET

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What is Diabetes?

Taking good care of yourself can seem overwhelming when you have diabetes—whether you’ve just learned you have the disease or you’ve had it for a long time. The right tools and support can make diabetes self-care very manageable in your everyday life.

What is diabetes?

- When you eat, some of your food is broken down into sugar. Sugar travels in your blood to all your body’s cells. Insulin is a hormone that is made by the beta cells in your pancreas. It works to move sugar from your blood into your cells.
- Diabetes means your blood sugar (glucose) is too high because your body is not able to use the sugar for energy. This happens because insulin does not work right. You can think of diabetes as an “insulin problem” and not a “sugar problem”.
- When you have type 2 diabetes, your body is not able to use the insulin correctly and your body often doesn’t make enough insulin. When you have type 1 diabetes, your pancreas makes very little or no insulin.

When you have diabetes:

- Your pancreas makes little or no insulin
- Your body prevents the insulin you do make from working right
- Sugar can’t get into your cells so it stays in your blood

Symptoms of Diabetes

The common signs of high blood sugar are:

- Feeling tired
- Going to the bathroom frequently
- Being thirsty more than usual
- Being hungry more often than usual
- Possible weight loss
- Having an infection that does not go away
- Having wounds or sores that do not heal well
- Numbness or tingling in your hands or feet

Some people experience other symptoms. And some people may have no symptoms at all.

If type 2 diabetes rarely causes symptoms, why should I care about it?

Even though type 2 diabetes may not make you feel sick, it can cause serious problems over time, if it is not treated. The disorder can lead to:

- Heart attacks
- Strokes
- Kidney disease
- Vision problems (or even blindness)
- Pain or loss of feeling in the hands and feet
- The need to have fingers, toes, or other body parts removed (amputated)

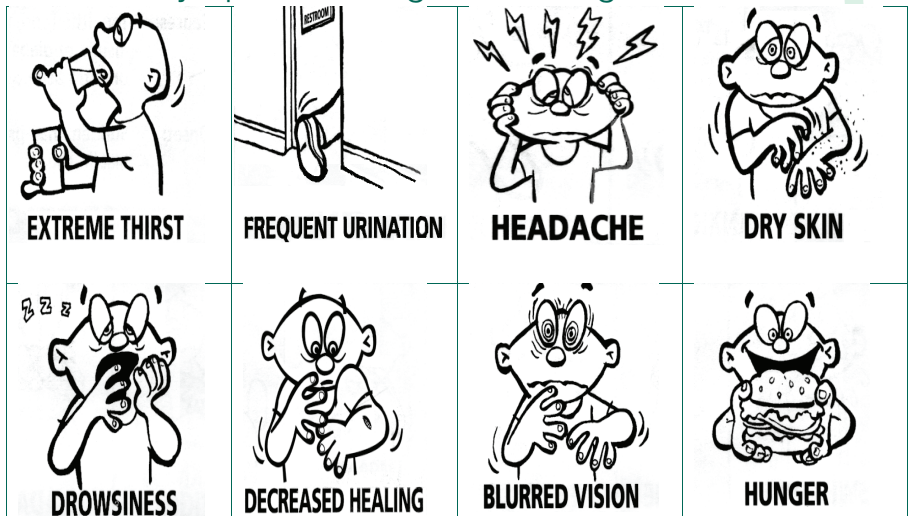
What is high blood sugar? (also called hyperglycemia)

- High blood sugar is a blood sugar level that stays over 250 mg/dl
- High blood sugar usually starts slowly
- High blood sugar may lead to diabetic coma if not treated

What causes high blood sugar?

- Eating too much food
- Not taking enough diabetes medicine
- Having the flu or being sick
- Having stress in your life

What are symptoms of high blood sugar?



How do I treat high blood sugar?

1. Check your blood sugar.
2. Drink 8-10 glasses of water per day. (If you are not on a fluid restriction)
3. If blood sugar stays over 250 mg/dl for 2 days, call your care provider.



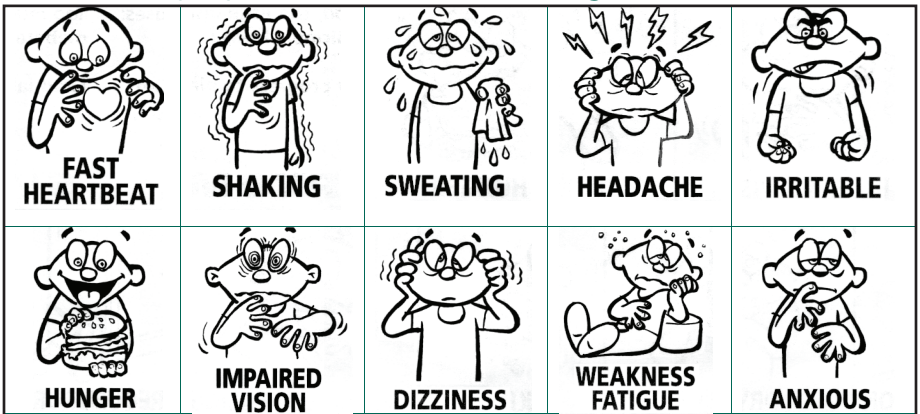
What is low blood sugar? (also called hypoglycemia)

- Low blood sugar is a blood sugar below 70 mg/dl
- Low blood sugar can come on very fast
- Low blood sugar may lead to coma if not treated

What causes low blood sugar?

- Not eating enough food
- Too much insulin or diabetes pills
- Extra exercise or activity

What are symptoms of low blood sugar?



How do I treat low blood sugar?

1. Take 15 grams of carbohydrates
Here are some examples (choose one)
 - 3-4 glucose tablets
 - 4-6 ounces regular soda
 - 4-6 ounces fruit juice
 - 1 cup skim or 1% milk
2. Wait 15 minutes.
3. Recheck blood sugar (should be above 70 mg/dL)
4. Repeat if blood sugar has not increased.
5. Once your blood sugar returns to normal, eat a meal or snack. This can help keep low blood sugar from coming back.
6. Tell your diabetes care team if you often have low blood sugar. You and your team may need to change your diabetes care plan.

How do I manage my diabetes?

Whether you have type 1 or type 2 diabetes, managing diabetes is a balancing act.

You need to balance:

- Food- Eat healthy foods. Avoid foods high in sugar and fat. Do not skip meals.
- Exercise- Start slow and work towards getting at least 30 minutes of extra activity at least 4 days each week. Examples of extra activity can be walking, climbing stairs, dancing, mowing grass, or vacuuming. Talk to your care provider before starting an exercise program. Choose activities you enjoy.
- Medicines -Take diabetes pills or insulin, if prescribed by your caregiver.
- Stress – Learn to problem solve and use healthy coping methods.
- Monitor your blood sugar - It is important to check your blood sugars to know how well you are managing your diabetes. Ask your care provider about how often you need to do this.

You can also:

- Control your weight. If you are too heavy, losing even a few pounds can make a difference.
- Stop smoking
- Learn as much as you can about diabetes. Attend diabetes classes. Read or view videos from trusted sources.

What should my blood sugar be?

The general guidelines for your target blood sugar are:

- Before meals: 80-120 mg/dl Your goal is: _____
- 2 Hours after meals: Below 160 mg/dl Your goal is: _____
- Before bed: 100-140 mg/dl Your goal is: _____

Why is controlling blood sugar important?

- In the short term, it will help you feel better and have more energy
- In the long term, it will help prevent problems with eyes, kidneys, nerves, and blood vessels

As part of your care plan, be sure to keep track of your ABC's:

A = A1c

B = Blood pressure

C = Cholesterol

My current lab values:

Individual Target:

A1c _____

_____ (Less than 7%)

Blood Pressure _____

_____ (Less than 130/80)

Cholesterol –
Total _____

_____ (Less than 200)

HDL _____

_____ (Women greater than 50
Men greater than 40)

LDL _____

_____ (Less than 100)

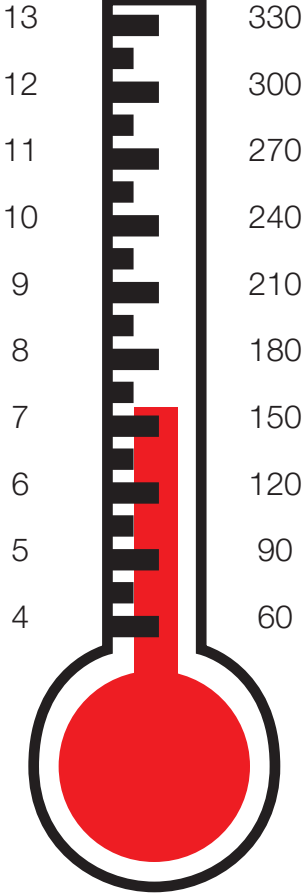
What is the A1c test?

- It is a blood test done in the lab that measures your average blood sugar level for the past 3 months.
- It should be checked every 3 to 6 months.
- The higher your A1c, the higher your risk for getting complications.
- A1c goal should be less than 7%.

Knowing both your A1c and your daily blood sugars gives a better total picture of your diabetes control!

A1c
%

Average Blood Sugar
mg/dl



High risk for complications

Low risk for complications

Normal is 5.7% or below. Aim for an A1c below 7%!

Date:

My A1c:

Managing Diabetes

AADE7™ Self-Care Behaviors

These 7 things can help make sure you stay healthy. You can work with your diabetes care team to decide how to fit them into your daily life.

1. Healthy Eating

- Do not skip meals.
 - Eat when you are hungry. Stop when you feel satisfied.
- Eat meals and snacks at regular times every day.
 - Eat 3 balanced meals a day, plus snacks if you are hungry.
 - Spread meals out over the day.
- Eat a variety of foods.
 - Add lots of color to meals with fresh fruits and lots of vegetables.
 - Enjoy plenty of whole grains.
 - Make sure you get enough fiber every day.
- Watch portion sizes.
- Slow down and enjoy the flavor of each bite of food.
- Limit sweets and regular soda.

2. Being Active

- Aim for 30 minutes of non-stop activity each day.
- Start slowly if you haven't exercised for awhile and talk to your doctor about activity guidelines.
- Choose activities that you enjoy.

3. Monitor and record your blood sugar levels

- Check your blood sugars with your meter every day.
- You may check when you wake up in the morning, before you eat, or 2 hours after eating.
- Record your blood sugars in a logbook and bring it to all your medical appointments.

Instructions for checking your blood sugar:

1. After washing your hands, insert a test strip into your meter.
2. Use your lancing device on the side of your fingertip to get a drop of blood.
3. Gently squeeze or massage your finger until a drop of blood forms. (Required sample sizes vary by meter.)
4. Touch and hold the edge of the test strip to the drop of blood, and wait for the result.
5. Your blood glucose level will appear on the meter's display.

Note: All meters are slightly different, so always refer to your user's manual for specific instructions.

Other tips for checking:

- With some meters, you can also use your forearm, thigh, or fleshy part of your hand.
- There are spring-loaded lancing devices that make sticking yourself less painful.
- If you use your fingertip, stick the side of your fingertip by your fingernail to avoid having sore spots on the frequently used part of your finger.

*Call the 800# on the back of your meter for questions / customer service.

4. Take your medications as directed

- Know how your medicines work and when you should take them.
- Know which medicines can cause blood sugar to drop too low.
- Keep a list of all your medications and carry it with you.

5. Reducing Risks

- Schedule doctor appointments at least every 3 months.
- Follow 'sick day' rules when you are feeling sick.
- Keep your blood pressure and cholesterol at a healthy level.
- Check your feet daily for redness, sores or cuts.
 - o Wash your feet every day and make sure you dry feet & toes well.
 - o Cut toenails straight across regularly (See a foot doctor if you have toenail problems).

Reducing Risks continued

- o Wear comfortable shoes.
- o Do not go barefoot- always wear shoes that protect your feet and slippers with a hard sole.
- o Use lotion to keep skin soft but not between your toes.
- Visit your eye doctor every year for a dilated eye exam.
- Take good care of your skin.
 - o Avoid very hot baths or showers.
 - o Moisturize skin with non-alcohol based lotion.
 - o Treat cuts right away- see your doctor right away if you get a major cut, burn or infection.
- Take good care of your teeth.
 - o Brush & floss your teeth and gums every day.
 - o Change your toothbrush every three months.
 - o Have your teeth examined and cleaned every 6 months.
 - o See your dentist if you have unusual pain, swelling or bleeding.
- Get a flu shot every year and ask your doctor about a pneumonia vaccine.
- Stop smoking.

6. Problem Solving

- Know the signs of low (hypoglycemia) and high (hyperglycemia) blood sugar and take action.

7. Healthy Coping

- Having diabetes can make you feel discouraged, stressed, or even depressed. Learn healthy coping methods to deal with your feelings.
- Get support from your friends, family, or a support group with others who also have diabetes.
- Go to education sessions where you can learn more about managing your diabetes.
- Set small goals that will help you take steps to being the healthiest you can be.

What is a Sick Day?

A sick day is when you have a cold, the flu or a fever. Blood sugar tends to go up when you are sick.

What should I do if I am sick?

- Keep taking your diabetes medicines. (Pills and/or Insulin)
- Check your blood sugar every 4 hours.
- Check your urine for ketones every 4 hours. (If you have Type1 diabetes)
- Drink 1 cup of **sugar-free** liquid every hour (like water, broth, caffeine free diet soda or tea).
- Eat your usual diet if you can.
- If you can't eat your usual diet, choose 1 of these foods or liquids every hour.

Sick day foods and liquids*:

- 1/2 cup regular Jell-O® (not sugar-free)
- 1/4 cup applesauce (not sugar-free)
- 6 saltine crackers
- 1 cup soup
- 1/2 cup non-fat fruit yogurt (not sugar-free)
- 3 graham crackers
- 1 cup sports drink
- 1/2 cup sugar-free pudding
- 1 slice toast or bread
- 1/2 cup regular soda (not sugar-free)
- 1/4 cup sherbet
- 1/3 cup cooked rice
- 1 fruit juice bar (not sugar-free)
- 1/2 cup ice cream
- 1/2 cup mashed potatoes
- 1/2 cup fruit juice
- 5 vanilla wafers
- 1/2 cup hot cereal

***Each has about 15 grams of carbohydrate**

When should I call my doctor?

- You have been sick for 1-2 days, and you are not getting better.
- You have been throwing up or having severe diarrhea for more than 6 hours.
- You cannot think clearly, your breathing becomes fast, or you have a fever over 101°F.
- Your blood sugar stays over 250 mg/dl on 2 checks 4 hours apart.
- You have moderate or large amounts of ketones in your urine. (If you have been told to check this)
- You are not sure what to do to take care of yourself.

Medications for Diabetes

If you cannot manage your diabetes with diet and exercise you may need medicine. Diabetes medicine can be taken by mouth or injected through the skin. You may be on more than one medicine. You may also be on a medication to keep your cholesterol at a healthy level.

Oral Medications

Brand Name	Generic Name	How It Works	Side Effects
Amaryl Glucotrol, Glucotrol XL	glimepiride glipizide	Stimulates release of insulin from pancreas	Low blood sugar; weight gain
Diabeta, Glynase, Micronase	glyburide		
Starlix	nateglinide		
Prandin	repaglinide		
Fortamet, Glucophage, Glucophage XR, Glumetza, Riomet	metformin	Reduces amount of sugar made by the liver	Stomach or intestinal problems; may cause lactic acidosis
Precose	acarbose	Slows digestion of carbohydrates	Stomach or intestinal problems
Glyset	miglitol		
Actos	pioglitazone	Helps cells use insulin better	Weight gain; liver problems; may cause heart attack
Januvia Onglyza Tradjenta	sitagliptin saxagliptin linagliptin	Increases release of insulin in response to a meal	Headach; upper respiratory infection; sore throat; runny or stuffy nose

Some medications for diabetes are combinations of medicines.

Brand Name	Generic Name
ACTOplus met	pioglitazone and metformin
Glucovance	glyburide and metformin
Metaglip	glipizide and metformin
Jentadueto	linagliptin and metformin
Janumet	sitagliptin and metformin
Kombiglyze	saxagliptin and metformin

- Because the drugs listed above act in different ways to lower blood glucose levels, they may be used together.
- Though taking more than one drug can be more costly and can increase the risk of side effects, combining oral medications can improve blood glucose control when taking only a single pill does not have the desired effects.
- You should know that alcohol and some diabetes pills can interact and cause vomiting, flushing, or sickness. Ask your doctor if you are concerned about any of these side effects.

The medication I am taking is: _____

Insulin

What is Insulin?

- Insulin is a hormone that is made in the pancreas - an organ in your body.

How does it work?

- Insulin lowers blood sugar by moving sugar from the blood into the cells of your body. Once inside the cell, sugar provides energy.
- Insulin lowers your blood sugar whether you eat or not. You should eat at regular times if you take insulin.

Can insulin be taken as a pill?

- No. Insulin can only be taken as a shot because insulin would be destroyed in the stomach.

What are the types of insulin?

Insulin	Brand Name = Generic Name	When to Use/ How It Works	Side Effects
Rapid acting insulin	Humalog = insulin lispro; Apidra = insulin glulisine; Novolog = insulin aspart	Given before you eat; Starts working within 5-15 minutes	Low blood sugar; weight gain
Short acting insulin	Regular	Given before you eat; Starts working within 1/2 to 1 hour	Low blood sugar; weight gain
Intermediate acting insulin	NPH	Given in the morning or evening; Lasts for 10-20 hours	Low blood sugar; weight gain
Long acting insulin	Lantus = insulin glargine*; Levemir = insulin detemir	Once or twice a day dosing; Provides coverage over 24 hours	Low blood sugar; weight gain
Pre-mixed insulins	70/30, 50/50, 75/25	Usually given before breakfast & dinner	Low blood sugar; weight gain
Other injectable	Victoza - Liraglutide	Given once a day.	Nausea; Vomiting
Other injectable	Byetta = exenatide	Given before morning and evening meals; Helps increase insulin production	Nausea; Vomiting
Other injectable	Symlin = pramlintide acetate	Given at mealtime; Used with insulin; Helps lower after-meal blood sugars	Low blood sugar; Nausea; Vomiting

* Lantus must not be mixed in a syringe with any other insulin.

What about insulin safety?

- Check the expiration date, and do not use it if it has expired.
- An open vial is only good for 30 days.
- Look at the bottle and be sure regular insulin is clear.
- NPH insulin should be cloudy, but should not be clumped or have floating pieces in it. If it does, do not use it.

When should I take insulin?

- Try to take insulin at about the same time every day.

How should I store insulin?

- Most people store their insulin in the refrigerator. The door of the refrigerator is best.
- Insulin can be kept at room temperature. If insulin gets too hot or cold, it breaks down and does not work.
- Do not keep it in very cold places such as the freezer, or in hot places, such as by a window or in the car's glove box.

Your Action Plan

Use this guide to help you report changes to your doctor or other healthcare provider. For most medical problems, you should first call your primary care doctor. Your doctor can answer your questions and guide you to make an appointment if needed.



You are doing WELL when:

- You have no symptoms of high or low blood sugar.
- You are checking your blood sugar levels and they are staying within your target range most of the time.
- You are eating right, staying active, and maintaining a healthy weight.
- Your blood pressure and cholesterol are staying within your target range.
- You are seeing your doctor every 3 months for ongoing checkups.



Call your doctor in the NEXT 24 HOURS if:

- You notice you have a blister, sore, or another abnormality in your feet, and it is getting larger or seems infected.
- You are not sick and you are taking your medicines but your blood sugar levels seem to have suddenly changed.
- You have questions or want to know more about diabetes.



Call your doctor RIGHT AWAY when:

- You are sick and your blood sugar stays over 300 mg/dL for more than 24 hours. Do not take over-the-counter medications without first consulting your doctor.
- You have been throwing up or have severe diarrhea for more than 6 hours.
- You have moderate or large amounts of ketones in your urine (if you have been told to check this) and they won't come down after several hours of treatment.
- If you develop abdominal pain.
- If you often have problems with high or low blood sugar levels.
- If you have trouble knowing when your blood sugar is dropping low.

Call 911 or other emergency services right away if you are:

- Unconscious or you suddenly become very sleepy or confused and difficult to awaken.
- You cannot think clearly, your breathing becomes fast, and you have a high fever that won't come down.
- You have a low blood sugar that will not come up after multiple treatments with carbohydrate.

The best way to prevent diabetic emergencies is to regularly check your blood sugar levels, take your medications as prescribed, eat well, exercise, learn to cope with your stress, and keep all appointments with health care providers.

My Personal Plan

I would like to work on the following areas to manage my diabetes:

- Healthy Eating
- Being Active
- Monitoring my blood sugar
- Taking medications
- Reducing health risks
- Problem Solving
- Healthy Coping

What about this area do you find to be the most challenging?

What are 3 things that keep you from making this behavior part of your day-to-day activities?

How can you partner with your doctor to reach this goal?

How can you partner with your friends, family and loved ones to reach this goal?

My confidence in being able to meet my GOAL:

0 1 2 3 4 5 6 7 8 9 10
Not confident Very confident

How can I have the best care for my diabetes?

Ask to have these tests done and work to get your results in target range:

Test:	How often:	Target:	My Result:
Blood Pressure	Every visit	Below 130/80	
Weight	Every visit		
Dilated Eye Exam	Yearly		
Complete Foot Exam	Yearly		
Foot Check	Every visit		
A1c Blood Test	Every 3 to 6 months	Below 7	
Cholesterol Blood Test	Yearly		
Total Cholesterol		Below 200	
Triglycerides		Below 150	
HDL (Good cholesterol)		Over 45	
LDL (Bad cholesterol)		Below 100	
Urine Protein	Yearly	No protein	
Flu shot	Yearly		

Blood Sugar Log

Date	Before first meal of the day (Breakfast)	Before mid-day meal (Lunch)	Before evening meal (Dinner)	Before bedtime	Comments
Sun					
Mon					
Tues					
Wed					
Thurs					
Fri					
Sat					



