

Caring for Your Diabetes: Basic Information to Help You Get Started



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2740 Prosperity Avenue, Suite 200
Fairfax, VA 22031

Inova Center for Wellness and Metabolic Health — Alexandria
4700 King Street, Suite 100
Alexandria, VA 22302

Inova Center for Wellness and Metabolic Health — Fair Oaks
3700 Joseph Siewick Drive, Suite 408A
Fairfax, VA 22033

Inova Center for Wellness and Metabolic Health — Loudoun
211 Gibson St NW, Suite 220
Leesburg, VA 20176

Central Number: 1-877-511-GOAL (4625)

Or visit us online: www.inova.org/diabetes

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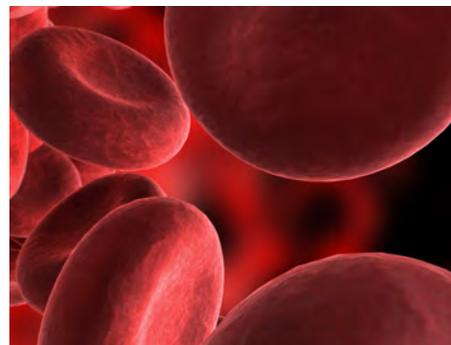
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What is diabetes?

When a person has diabetes, the body does not make enough insulin or the insulin does not work well. It cannot get into the cell to provide energy.

What does insulin do?

- Insulin unlocks doors in the body's cells and let's sugar enter the cell
- Inside the cell, sugar is made into energy
- If there is too little insulin, then the doors cannot open
- Sugar gets stuck in the blood stream and the blood sugar level rises
- Too much sugar in the blood is called diabetes
- Over time, high blood sugars can cause:
 - ◇ Blindness
 - ◇ Heart disease
 - ◇ Kidney disease
 - ◇ Nerve damage
 - ◇ Damage to any system or organ in your body

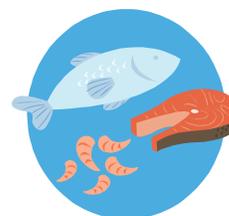


Control your diabetes and prevent problems

Stay active and eat well

- All activity helps
- Increase activity slowly and safely
- Talk to your medical provider first

- Eat more fruits, vegetables, and whole grains
- Eat less fat and sodium
- Eat fewer processed foods



Follow your treatment plan

- Your provider may prescribe pills or injections
- Your provider will tell you how often to test your blood sugar
- Call your provider when your blood sugar is often too high or too low



Reduce other health risks

- Quit smoking
- Get regular medical exams and tests
- Limit or avoid alcohol



Learn to Manage Stress

- Learn what helps you relax
- Get support from family, friends, others with diabetes



Types of Diabetes

Type 1 diabetes

Is an autoimmune disease, which means your body destroys its own cells that produce insulin . Type 1 usually occurs in young people (children, teens and young adults). Since the body cannot make insulin, insulin injections must be taken on a daily basis.

Type 2 diabetes

Has multiple causes such as family history, weight gain and living a sedentary (non– active) lifestyle. The body can produce insulin but it is less than what is needed and the insulin cannot get into the cells easily. Type 2 diabetes mainly affects adults. In the early stages of Type 2 diabetes, physical activity , weight loss and monitoring the diet, helps control blood sugar. Pills and injectable medication may still be needed for blood sugar control. As the disease progresses, insulin may be needed later on.

Questions so far?

What are carbohydrates (carbs)?

Carbohydrates are starch and sugars found in foods. Carbohydrates turn to glucose (blood sugar) when you eat them. This sugar is used a fuel to provide energy for daily activities.

- Carbohydrates come from several types of foods:
 - ◊ Foods made from grains (cereals), beans (dried), and starchy vegetables
 - ◊ Fruit, milk, and yogurt
 - ◊ Simple sugars like table sugar and honey
 - ◊ Sweets and snacks

How much carbohydrate should I eat?

- Enough to fuel your body each day
- Depends on your age, activity level, body size, and whether you are a man or woman
- Get a Dietitian to calculate your needs and help plan your meals and snacks
- In the meantime, follow these general daily guidelines:
 - ◊ For most men, about 4– 5 servings at each meal (60 –75 grams per meal)
 - ◊ For most women, about 3-4 servings at each meal (45-60 grams per meal)

Tips for healthy eating:

- Eat a variety of healthy carbohydrates.
- Keep your food portions small to moderate.
- Eat three meals at about the same times each day.
- Eat carbohydrate snacks if you are active.
- Limit fat, especially at meals.

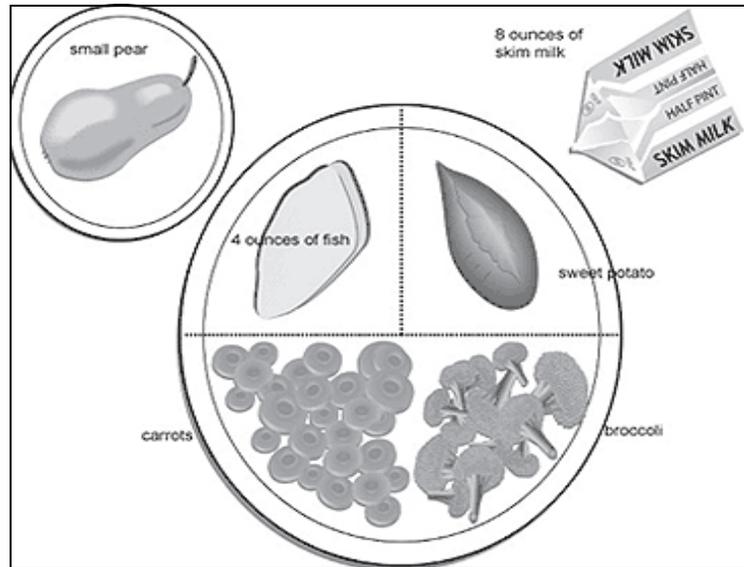
LATER you will learn how to count carbs, control portions, and protect your heart.



The Healthy Plate Method

How to balance your diet for health and diabetes control

- Non-starchy vegetables on half your plate
- Lean protein on a quarter of your plate
- Starchy carbohydrates on the other quarter of your plate
- More carbs on the side to meet your needs
- Limit added fat and salt
- Moderate use of artificial sweeteners

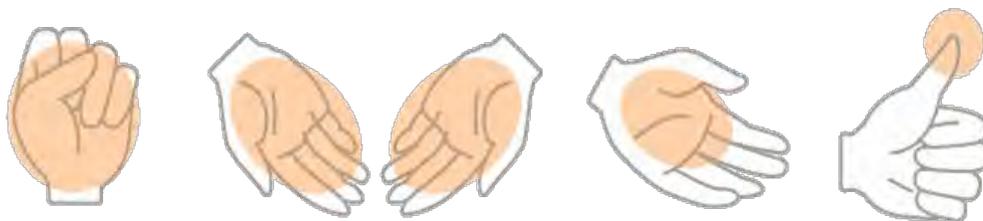


9" dinner plate

Estimating Food Portions

Use your hand to estimate healthy food portions:

- A man's fist equals about **1 cup**
- Two handfuls of vegetables fills equals **2 servings** (aim for 3-5 servings daily)
- 1 palm equals about **3 ounces** of meat, fish, or chicken
- The tip of your thumb equals about **1 teaspoon** of fat or oil (limit to 1-2 per meal)



Why do I need to test my blood sugar?

- Tells you and your provider how well your diabetes is controlled
- Helps you and your provider decide how to treat your diabetes

Where can I get testing supplies?

- ◇ Your provider will write prescriptions for your supplies
- Supplies can be obtained from your pharmacy or a mail order distributor

How much do testing supplies cost?

- If you have insurance, find out what the preferred meter type is
- Store brand meters are least expensive if you don't have insurance

When should I test my blood sugar?

- Your healthcare team will tell you when to test.
 - ◇ People using insulin test before meals and at bedtime.
 - ◇ People taking pills or no medication usually test three times a day (Before breakfast, before one other meal and then 2 hours after that meal)
- Other times you might need to test:
 - ◇ When you have symptoms of very low blood sugar (hypoglycemia).
 - ◇ When you are sick.
 - ◇ When your doctor changes your diabetes treatment plan.

What should my blood sugar be?

- Fasting (upon awakening) and before meals **80-130**
- 2 hours after the start of meals **less than 180**
- Your provider will tell you if your "target range" is different.

What if my blood sugar is not in target?

- Your blood sugar won't always be in target.
- Keeping blood sugar in target most of the time will prevent organ damage.



LATER you will learn how to manage your blood sugar based on keeping records.

A blood sugar less than **70 mg/dL** (*hypoglycemia*) may be dangerous. It should be treated right away.

| Possible Causes of Hypoglycemia | To Prevent Hypoglycemia |
|--|---|
| <ul style="list-style-type: none"> • Eating less food than usual • Exercising more than usual • Waiting too long to eat • Taking too much diabetes medication or insulin | <ul style="list-style-type: none"> • Eat regular meals and snacks that include carbohydrates • Eat extra carbohydrate snacks when you are more active than usual • Be sure you use the right dose of medication or insulin |

Symptoms

If your blood sugar goes too low your body will give you warning signs. **Do not ignore these signs:**



If you have any of these symptoms, follow the *RULE OF 15*:

- Test your blood sugar right away.
- Treat blood sugar below 70 with **15 grams of sugar** from:
 - ◊ 4 ounces fruit juice or regular soda
 - ◊ 4 glucose tablets
 - ◊ 8 ounces milk
 - ◊ 3 packets of sugar
- Wait **15 minutes** and test blood sugar again.
- If still below 70, repeat the last two steps above!
- When your blood sugar is over 70, eat a small snack or a meal within one hour.

IMPORTANT! If you take insulin, make sure you always have an unexpired **glucagon kit** on hand! Get a prescription from your provider.

You may need glucagon if you are unconscious or cannot safely swallow. Someone else will have to give it to you. Have a family member learn what to do.

Blood sugar that is too high (*hyperglycemia*) can also be dangerous. Ask your provider what blood sugar is too high for you, and when to call for help (write it in below!).

| Possible Causes of Hyperglycemia | To Prevent Hyperglycemia |
|--|--|
| <ul style="list-style-type: none"> • Eating more food than usual • Eating too frequently • Being less active than usual • Feeling stressed or being ill • Skipping a dose of diabetes medication or insulin, or taking too little | <ul style="list-style-type: none"> • Follow your Food Plan recommendations for carbohydrates at meals and snacks • Get enough regular activity • Be sure you use the right dose of insulin or medication • Call the doctor when you are sick |

Symptoms

Your body will also give you a warning if your blood sugar is too high. With very high blood sugar you may feel any of these symptoms:



What to do if your blood sugar is too high:

- Test blood sugar more often (every four hours if you are sick).
- Drink plenty of fluids.
- Get a little physical activity, if you are well enough.
- **Call your provider if:**
 - ◇ Your blood sugar is **too high** 2 times in 24 hours or more than 2 times in one week (see below)*
 - ◇ You are sick for 1-2 days and not getting better
 - ◇ You have a fever over 100 degrees F
 - ◇ You are vomiting and/or have diarrhea

MY BLOOD SUGAR IS TOO HIGH IF IT IS MORE THAN _____

What to do When You're Sick

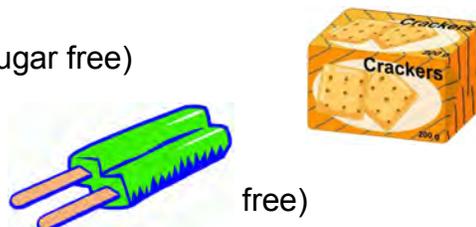
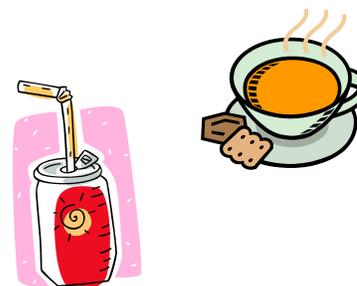
- Follow your Food Plan. See suggested foods below.
- Eat smaller, more frequent "meals".
- Take your usual dose of diabetes medicine (pills) or insulin.
- Drink plenty of fluids, like water, low-sodium broth, and tea.
- **Check your blood sugar every four hours.** Your blood sugar may be higher when you are sick.
- You may be advised to check your urine for ketones
- Call your provider if needed (see Box below).



What to Eat When You're Sick

Eat or drink whatever carbohydrates you can when you are sick. Each of the sample food servings below has about 15 grams of carbohydrate:

- 1/2 cup regular soda (NOT diet!)
- 6 saltine crackers
- 1 slice toast
- 1 cup soup with noodles or rice
- 1/2 cup regular sweetened gelatin (NOT sugar free)
- 1/2 cup regular sweetened pudding (NOT sugar free)
- 1 regular sweetened popsicle (NOT sugar free)
- 1/2 cup ice cream or frozen yogurt
- 1 tablespoon honey or sugar
- 1/4 cup sherbet



When to Call Your Provider

- Your blood sugar tests are over **250 mg/dl** (too high) for two days
- More than one of your blood sugar tests is less than 70 while you are sick
- You are vomiting or have diarrhea

Ketones

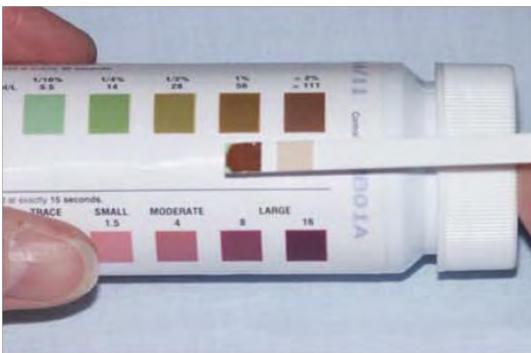
Please ask your healthcare team if ketone testing is needed for your care.

The body makes ketones when the blood sugar levels are too high or during illness. Ketones will show up in blood and urine tests.

Checking Urine Ketones

Ketones are made when there is not enough insulin. Your body then uses fat instead of sugar for energy. Fat is not the best food for your energy and when it breaks down this causes ketones. Ketones can cause you to feel sick. You can check your urine for ketones with a ketone test strip.

Your goal is to keep your blood sugars in target with a balance of insulin, food and activity so that most of your ketone results are negative.



If the **result is Moderate or Large**, like it is in the picture here, you will need to **call your doctor**.

When should you check your urine for ketones?

- ◇ If your blood sugar is greater than 300 two times in 24 hours
- ◇ When you are vomiting or sick no matter what your blood sugar level is.

Steps for checking ketones:

- ◇ Follow instructions on bottle of test strips
- ◇ Remember to put the date on the bottle when you open it. The strips are good for 6 months from that date.
- ◇ Collect urine in a clean cup/container or urinate directly onto the test strip
- ◇ If collecting urine in a cup, dip test strip into fresh urine
- ◇ After a set time (check instructions) compare the strip with color chart on the package
- ◇ Record results (negative, trace, small, moderate, large) on your logsheet

What should I do if I have ketones in my urine?

- ◇ **Call your doctor if the ketones are moderate or large**
- ◇ Do not exercise if ketones are moderate or large
- ◇ Drink plenty of water

What's the best treatment plan for me?

- Everyone is different. Your provider will design the best one for you
- Your treatment plan will change over time

What are my treatment options?

- Controlling food portions and meal times
- Getting regular physical activity
- Taking pills, insulin, or other injectable medicine

How do diabetes pills work?

- Help insulin work harder and better to lower blood sugar
- Keeping your body from making too much sugar
- Slow down blood sugar build up after eating

How does insulin work?

Different kinds of insulin work in different ways:

- Long-acting insulin (also called “background” insulin) helps control blood sugar all day.
- Rapid-acting insulin (also called “meal time” insulin) helps your body use the food you eat at meals.

Why would I need to use insulin (instead of just pills)?

- ***Type 2 diabetes is a progressive disease***
 - ◇ Aging
 - ◇ New health problems
- Better treatment options available
- Lifestyle changes



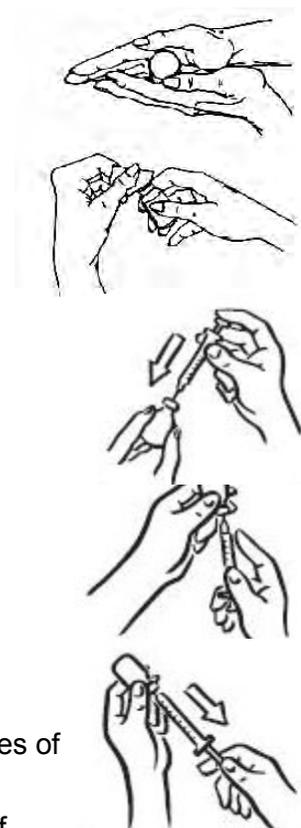
LATER you may need to learn how to:

- Manage blood sugar during exercise
- Plan for safe travel
- Adjust medication or insulin as needed

Look in the Appendix of this booklet to find out more about diabetes medicines and types of insulin.

Drawing Up And Injecting One Type of Insulin:

1. Gather your supplies (insulin vial, new syringe, alcohol wipe).
2. Wash and dry your hands.
3. If your insulin is cloudy, roll the bottle between your hands.
4. Wipe the top of the insulin vial with alcohol.
5. Remove plastic covers from both ends of syringe (needle and plunger).
6. Draw air into syringe equal to your insulin dose.
7. Inject air into bottle.
8. Turn bottle and syringe upside down.
9. Pull down on plunger to draw out dose of insulin.
10. Remove air bubbles and refill syringe, if needed.
11. Take needle out of bottle and inject insulin (see below).

**Drawing Up Two Types of Insulin:**

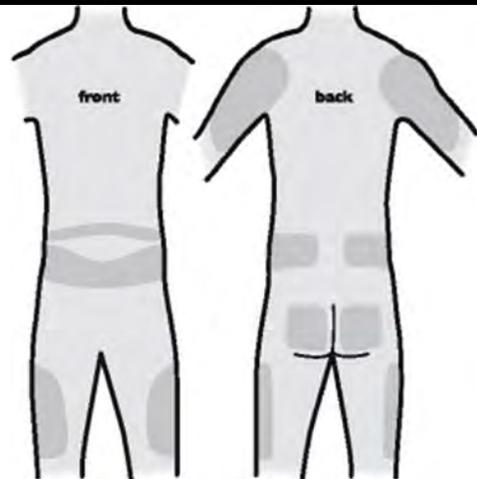
1. Gather supplies (insulin vials, new syringe, alcohol wipe)
2. Wash and dry your hands.
3. Roll your cloudy insulin bottle. You do not need to roll clear bottles of insulin.
4. Remove plastic covers from needle and plunger. Clean off top of bottles with alcohol.
5. Draw air into syringe equal to cloudy insulin dose.
6. Inject air into cloudy insulin bottle.
7. Pull needle out of the bottle - without drawing up an cloudy insulin
8. Draw air into syringe equal to clear insulin dose.
9. Inject air into clear Insulin bottle.
10. Turn clear insulin bottle and syringe upside down.
11. Pull down on plunger to draw out the correct dose of clear insulin
12. Remove any air bubbles
13. Take needle out of clear insulin bottle.
14. Place needle in cloudy insulin bottle.
15. Draw out cloudy insulin to total insulin dose (to get this total, add the clear dose plus the cloudy dose).
16. Take needle out of cloudy insulin bottle and inject insulin.



**PUSH AIR INTO CLOUDY
INSULIN FIRST**

Injecting the Insulin:

1. Select spot for insulin injection (choose from shaded areas in illustration).
2. Clean skin with alcohol wipe– let it dry.
3. Remove needle cover from syringe.
4. Pinch up your skin.
5. Push the needle straight into your skin.
6. Push the plunger down, count to five.
7. Take the needle out of your skin.
8. Discard used syringe in a “Sharps” container.
(You can use a liquid detergent bottle)
9. Ask about site rotation.



How to Store Insulin

- ◇ Store open insulin vials at room temperature (45° to 86° F)
- ◇ Clear insulins are usable for 28 days, cloudy insulin for 30 days.
- ◇ Store unopened vials in the refrigerator until opened or expired.
- ◇ Do not store insulin vials in your car or vehicle in hot or cold weather.
- ◇ Throw away any insulin that has expired or has been exposed to extreme heat or cold.

What to Learn Later: How to travel with insulin and other diabetes supplies.

| | Time | Medication and Insulin (Name and Dose) |
|-------------------------------------|-------|---|
| MORNING | | |
| Test blood sugar | _____ | |
| Take diabetes medication or insulin | _____ | |
| Eat breakfast | _____ | |
| Morning Snack | _____ | |
| AFTERNOON | | |
| Test blood sugar | _____ | |
| Take diabetes medication or insulin | _____ | |
| Eat lunch | _____ | |
| Afternoon Snack | _____ | |
| EVENING | | |
| Test blood sugar | _____ | |
| Take diabetes medication or insulin | _____ | |
| Eat dinner | _____ | |
| BEDTIME | | |
| Test blood sugar | _____ | |
| Take diabetes medication or insulin | _____ | |
| Bedtime snack | _____ | |

Keep meal times about the same each day, if you can. This can help you control your blood sugar. Meals should be no more than 4 to 6 hours apart, most of the time. You may need snacks for extra activity. Ask your dietitian or diabetes educator for help.

Before you leave the hospital...

- **Fill your prescriptions** for testing supplies (see below).
- Make sure you understand your medical treatment plan.
 - ◊ When to take your pills or insulin
 - ◊ What dose to take

After you leave the hospital...

- **Call your healthcare provider within 48 hours of discharge** to make an appointment.
 - ◊ To review your medication or insulin dose
 - ◊ To see if you need other education or medical referrals
- **Call your insurance company**
 - ◊ To learn what your diabetes supplies will cost
 - ◊ To see if diabetes education is covered
- **Call the Inova Diabetes Center** to schedule diabetes self-management training: **1-877-511-4625**

Supplies you may need:

- Blood Glucose Meter
- Blood Glucose Strips
- Alcohol wipes
- Lancets
- Diabetes Medications
- Syringes
- Sharps Container
- Glucose Tablets/Sugar Source
- Ketone Testing Strips
- Glucagon Kit
- Medic-Alert Identification



Inova Diabetes Center – Who We Are and What We Do

- We are a team of nurses and dietitians who are Certified Diabetes Educators (CDE)
- We provide diabetes consultation and self-management education for people with all types of diabetes.

For more information and to learn more about our services, please call our centralized toll-free number **1-877-511-GOAL (4625)**

Or visit us online: www.inova.org/diabetes

Diabetes Self Management Training is available at these locations:

Inova Diabetes Center—Fairfax
274 Prosperity Avenue
Suite 200
Fairfax, VA 22031

Inova Diabetes Center—Alexandria
4320 Seminary Road
Alexandria, VA 22304

Inova Diabetes Center—Fair Oaks
3700 Joseph Siewick Drive
Suite 408A
Fairfax, VA 22033

Inova Diabetes Center—Loudoun
211 Gibson St NW
Suite 200
Leesburg, VA 20176

Inova Diabetes Center—Mt Vernon
4700 King Street
Suite 100
Alexandria, VA 22302

1-877-511-GOAL (4625)

Diabetes Associations

American Diabetes Association National Center (Membership is \$25)
1701 North Beauregard St.
Alexandria VA 22311
www.diabetes.org

Publications

Diabetes Forecast
www.diabetes.org
1-800-806-7801

Diabetes Self-Management
www.diabetes-self-management.com
1-800-234-0923

Other Websites

<http://diabetes.niddk.nih.gov>
<http://www.nlm.nih.gov/medlineplus/ency>

Apps

Glucose Buddy (For use on Androids, ipad, iphone, ipod touch)

This diabetes app lets you record, annotate, and graph your blood glucose level, medication doses, food, and exercise. Notifications can remind you when it's time to check your blood glucose.

Fooducate (For use with Androids, iPad, iphone, ipod touch)

This app helps to improve nutrition choices. Search for foods or scan bar codes to get a comprehensive profile, including nutrition facts, tips and notes, a health grade, and even the percentage of other Fooducate users who like a food. With one tap, get a list of healthier options or add a product to your shopping list.

| Brand Name | Generic Name | How to Works | How to Take | Side Effects |
|---------------------------------------|---------------------|--|---|---|
| Glucophage, Glumetza, Glucophage XR | metformin** | ↓ Liver production of sugar ↑ Insulin sensitivity | Take by mouth with food to prevent upset stomach. | Low blood sugar Belly pain Upset stomach Diarrhea Nausea and vomiting |
| Glucotrol, Glucotrol XL, Glipizide XL | glipizide** | ↑ Insulin release from pancreas | Take by mouth with first meal of the day. | Low blood sugar Weight gain Upset stomach Headache Nausea and vomiting |
| Amaryl | glimepiride** | ↑ Insulin sensitivity | | |
| Diabeta, Glynase | glyburide** | | | |
| Avandia | rosiglitazone | ↑ Insulin sensitivity | Take by mouth with or without food. Take with food if stomach upset occurs. | Low blood sugar Weight gain High cholesterol Headache Heart failure Weak bones |
| Actos | pioglitazone | | | |
| Precose | acarbose | ↓ Sugar absorption | Take by mouth with first bite of each meal. | Belly pain Diarrhea Gas Bloating |
| Glyset | miglitol | | | |
| Januvia | sitagliptin | ↑ Insulin production | Take by mouth with or without food. Take with food if stomach upset occurs. | Sore throat Stuffy/runny nose Low blood sugar Diarrhea |
| Onglyza | saxagliptin | | | |
| Trajenta | linagliptin | | | |
| Starlix | nateglinide | ↑ Insulin release | Take by mouth 15-30 minutes before meals. Skip dose if meal skipped. Add dose if meal is added. | Low blood sugar Flu-like symptoms Weight gain Headache Upset stomach Nausea and vomiting |
| Prandin | repaglinide | | | |
| Invokana | canagliflozin | ↓ Sugar absorption | Take by mouth 30 minutes before first meal of the day. | Increased urination Vaginal yeast infection Yeast infection of penis |
| Byetta/Bydureon | exenatide | ↑ Insulin release from pancreas | Inject into the fatty part of the skin 2 times a day about 1 hour before morning and evening meals. **For extended release, inject once a week without regard to meal or time of day. | Low blood sugar Nausea, Vomiting Diarrhea, Constipation |
| Victoza | liraglutide | ↑ Insulin release from pancreas | Inject into the fatty part of the skin as directed without regard to meal or time of day | Nausea, vomiting Diarrhea, Constipation Headache |
| Trulicity | Dulaglutide | ↑ Insulin release from pancreas | Inject into the fatty part of the skin as directed without regard to meal or time of day | Low blood sugar Nausea, Vomiting Diarrhea, Constipation |

| Insulin Brand Name | Generic Name | Insulin Appearance | How to Take | Side Effects |
|---|--|--|--|---|
| Novolog, Novolog FlexPen, Novolog PenFill | insulin aspart | This is a clear insulin; do not use if cloudy or has white solids | Make sure you have the correct insulin. Inject insulin about 5 to 10 minutes before meals into the fatty part of the skin. Rotate injection sites. | Low blood sugar Upset stomach Weight gain Irritation at injection site |
| Humalog, Humalog KwikPen | insulin lispro | This is a clear insulin; do not use if cloudy or has white solids. Available without prescription | Make sure you have the correct insulin. Inject insulin into the fatty part of the skin as directed by your doctor. Rotate injection sites. | Low blood sugar Upset stomach Weight gain Irritation at injection site |
| Apidra, Apidra SoloStar | insulin glulisine | This is a clear insulin; do not use if cloudy or has white solids. Available without prescription | Make sure you have the correct insulin. Inject insulin into the fatty part of the skin as directed by your doctor. Rotate injection sites. | Low blood sugar Upset stomach Weight gain Irritation at injection site |
| Novolin R**, Humulin R | insulin regular | This is a uniformly cloudy, milky solution Available without prescription | Make sure you have the correct insulin. Inject insulin into the fatty part of the skin as directed by your doctor. Rotate injection sites. | Low blood sugar Upset stomach Weight gain Irritation at injection site |
| Novolin N**, Humulin N, | insulin NPH | This is a clear insulin; do not use if cloudy or has white solids | Make sure you have the correct insulin. Inject insulin into the fatty part of the skin as directed by your doctor. Rotate injection sites. | Low blood sugar Upset stomach Weight gain Irritation at injection site |
| Levemir | insulin detemir | This is a clear insulin; do not use if cloudy or has white solids | Make sure you have the correct insulin. Inject insulin into the fatty part of the skin as directed by your doctor. Rotate injection sites. | Low blood sugar Upset stomach Weight gain Irritation at injection site |
| Lantus or Basaglar | insulin glargine | This is a clear insulin; do not use if cloudy or has white solids | Make sure you have the correct insulin. Inject insulin into the fatty part of the skin as directed by your doctor. Rotate injection sites. | Low blood sugar Upset stomach Weight gain Irritation at injection site |
| Combination Insulin | | | | |
| Novolog Mix 70/30, Novolog Mix 70/30 FlexPen | insulin aspart protamine suspension & insulin aspart | This should look uniformly cloudy or milky after mixing. Do not use if this insulin is clear. | Make sure you have the correct insulin. Inject insulin about 15 minutes before or right after a meal into the fatty part of the skin. Rotate injection sites. | Low blood sugar Upset stomach Weight gain Irritation at injection site |
| Humalog Mix 50/50, Humalog Mix 50/50 Kwik Pen | insulin lispro protamine & insulin lispro | This should look uniformly cloudy or milky after mixing. Do not use if this insulin is clear. | Make sure you have the correct insulin. Inject insulin about 15 minutes before or right after a meal into the fatty part of the skin. Rotate injection sites. | Low blood sugar Upset stomach Weight gain Irritation at injection site |
| Humalog Mix 75/25, Humalog Mix 75/25 Kwik Pen | insulin lispro protamine & insulin lispro | This should look uniformly cloudy or milky after mixing. Do not use if this insulin is clear. | Make sure you have the correct insulin. Inject insulin about 15 minutes before or right after a meal into the fatty part of the skin. Rotate injection sites. | Low blood sugar Upset stomach Weight gain Irritation at injection site |
| Novolin 70/30** | insulin NPH suspension & insulin regular | This should look uniformly cloudy or milky after mixing. Do not use if this insulin is clear. | Make sure you have the correct insulin. Inject insulin about 15 minutes before or right after a meal into the fatty part of the skin. Rotate injection sites. | Low blood sugar Upset stomach Weight gain Irritation at injection site |
| Signs of Low Blood Sugar: | | Signs of High Blood Sugar: | | |
| Dizziness, headache, sweating, feeling sleepy, feeling weak, confusion, shaking, fast heartbeat, hunger | | Dizziness or passing out, urinating more often, blurry eyesight, sleepiness, increased thirst, upset stomach and throwing up | | |