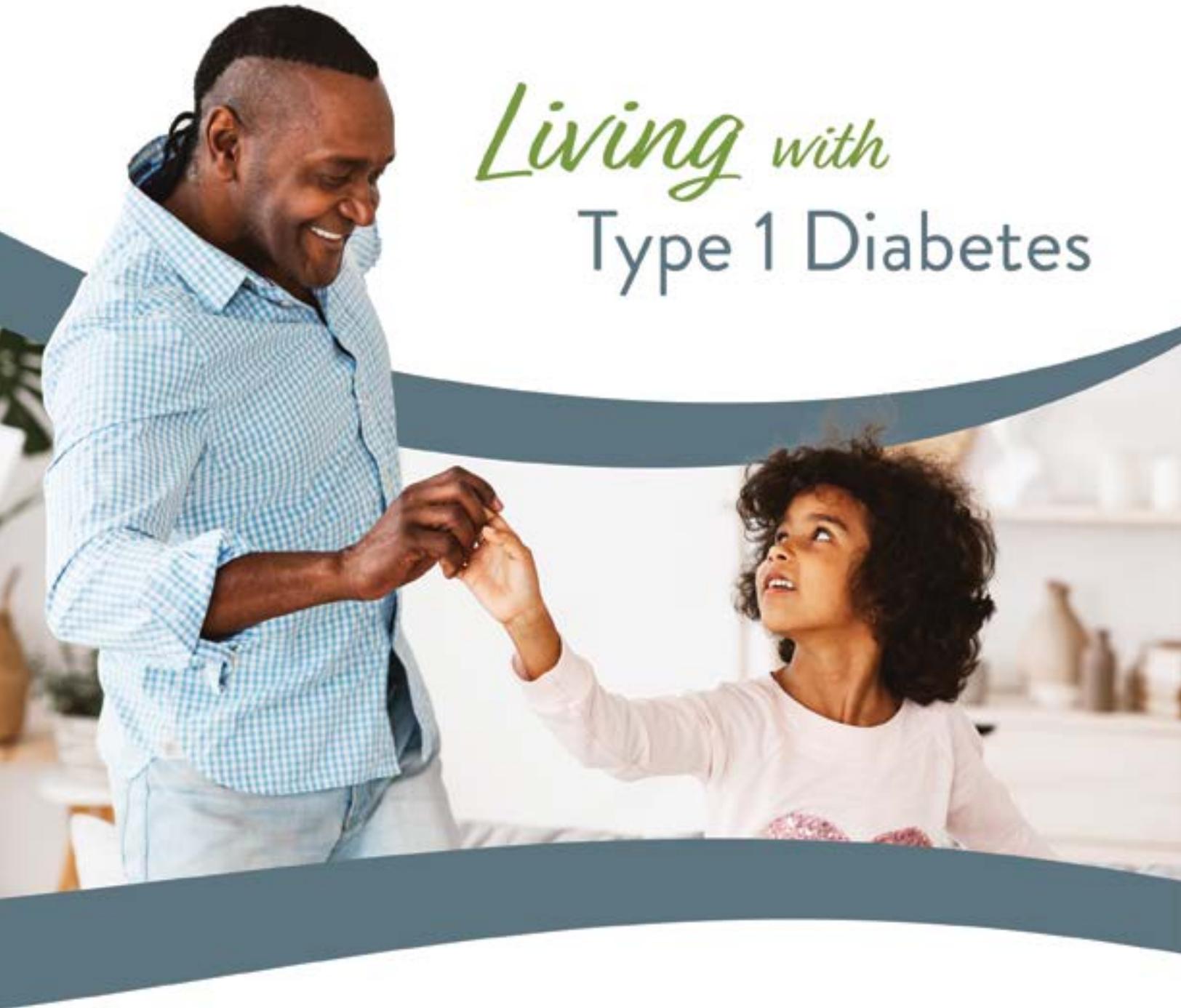


# Nascentia Health

TOMORROW'S HEALTHCARE TODAY

## *Living with* Type 1 Diabetes





# Type 1 Diabetes S.M.A.R.T Goals

Specific **M**easurable **A**ttainable **R**elevant **T**imely

Page	Task	Goal Met Date	Notes
2	Explain what diabetes is		
2	List 5 symptoms of diabetes		
3	Check your blood glucose (sugar)		
4	List the signs, symptoms, and treatment of hypoglycemia (low blood sugar) and identify how to prevent it. Know foods to avoid.		
6	List the signs, symptoms, and treatment of hyperglycemia (high blood sugar) and identify how to prevent it.		
8	Follow your prescribed meal plan		
10	Know how to count carbs		
13	Design an exercise program with your doctor, and follow it		
14	Know how meal planning, exercises, medications (if needed) and checking your blood sugar help you control your diabetes		
15	Care of teeth, gums, and skin		
16	Foot care		
18	Identify the type(s) of insulin to take, how much and when to take it		
21	Demonstrate how to draw up insulin		
22	Know how to inject insulin and what sites		
23	Demonstrate how to mix 2 insulins		
24	How to store insulin		
25	How to use an insulin pen		
34	Know what to do when you are sick, to keep your blood sugar within your healthy range		
28	Know how to use your insulin pump		
32	Know how to prepare to travel with insulin		
36	Discuss 3 complications of diabetes		
36	Take safe steps to keep from getting infections or other diseases		
36	Be free of long-term complications		
	Agree to see your doctor for follow-up visits		

# 1. What is Type 1 Diabetes?

**You have diabetes when your body can't use or make enough insulin.** Insulin is a hormone that helps get blood glucose (sugar) to your body's cells. All of your body's cells must have glucose to work well. When you don't have enough insulin or you don't use it well, sugar builds up in your blood instead of going into the cells. Because your body can't lower blood sugar on its own, you have to help your body.

You may have to take medicine to help decrease the sugar in your body if managing your diet does not work.

Diabetes runs in families, so your family members should be screened for diabetes by their doctor. Not everyone has the early signs of high blood sugar.

## **You Have Type 1 Diabetes**

Type 1 used to be called juvenile diabetes or insulin-dependent diabetes mellitus (IDDM). In this kind of diabetes, your body is making little or no insulin so you need to inject insulin as part of treatment. Diabetes may cause one or more of these symptoms:

- Extreme thirst or hunger
- Frequent urination
- Weight loss (for no unknown reason)
- Blurred vision or dizziness
- Low energy or fatigue
- Itching (vaginal or genital)

These symptoms occur when blood sugar is high.

## 2. Blood Sugar

### Self-monitoring of blood sugar

Checking your blood sugar can help you control your diabetes because it will tell you:

- Your blood sugar level at the moment of testing
- How food, exercise, medicines, and illness or stress affect blood sugar levels
- Early warning signs of very low and very high blood sugar

Your doctor or nurse will show you which sugar meter test kit to use and how to use it. Check with your insurer because they may cover the cost of many blood test materials.

### How to test your blood sugar

Always follow the instructions that come with your test kit to get a correct reading. For accurate testing, you need a large, hanging drop of blood from your finger. The whole strip pad must be covered with blood to get a correct reading.

1. Read the directions in your test kit.
2. Wash your hands with soap and warm water.
3. Make sure your fingers are warm. Hold your hand with the fingers angled down to increase blood flow to them.
4. Follow the directions on your lancet device and puncture the fingertip. Use a new lancet for each finger stick. Put the used lancet in your sharp's container.



## 2. Blood Sugar (Continued)

5. Gently squeeze the finger to get a large drop of blood.
6. Apply the drop of blood onto the strip according to your test kit instructions. Do not rub or dab.
7. Follow the directions for running the test.
8. Wait the correct amount of time, then read the test result at once and record it in your blood sugar records.

### Low blood sugar

Since you take insulin for your diabetes, there may be times when you have low blood sugar (called hypoglycemia). This can be even more dangerous condition than high blood sugar. You may have one or more of these symptoms:

Early Stage	<ul style="list-style-type: none"> <li>• Shaky</li> <li>• Sweaty</li> <li>• Headache</li> <li>• Hungry</li> <li>• Dizzy</li> <li>• Fast heartbeat</li> <li>• Irritable/moody</li> <li>• Numbness around mouth/lips</li> <li>• Tingling</li> </ul>
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Later Stage	<ul style="list-style-type: none"> <li>• Slurred speech</li> <li>• Staggering</li> <li>• Confusion</li> <li>• Convulsions</li> <li>• Unconsciousness</li> </ul>
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Some people don't notice these symptoms right away. For this reason, people close to you (family, friends, teachers, coaches, co-workers, etc.) should know the symptoms of low blood sugar and how to treat them. Often the change from the early to later stage can be so fast that someone else must give you treatment. For this reason, always wear ID (like Medic Alert) that shows you have type I diabetes.



If you think your blood sugar is low, test it or have someone test it for you. A reading of 70 or less is considered low for men and non-pregnant women who are taking insulin. If you think your blood sugar is low and you cannot test it, always treat the symptoms.

## 2. Blood Sugar (Continued)

### Causes of low blood sugar

- Too much insulin
- Too little food (skipped or delayed meals)
- Extra exercise without extra food

### Preventing low blood sugar

- Take the correct amount of insulin.
- Never skip or delay meals.
- Space meals 4–5 hours apart.
- Eat your scheduled snacks.
- Test blood sugar regularly. Look for patterns of low blood sugar and discuss with your doctor.
- Learn to relate low blood sugar to your exercise, peak action of insulin, and meals.
- Always carry a good sugar source (like 5-7 pieces of hard candy) and a nutritious snack with you.

### Treating low blood sugar (treat immediately!)

Step 1: If your blood sugar is 70 or less, eat or drink one of these:

- ½ cup fruit juice or ½ can regular soda (not diet)
- 1 tablespoon of sugar or 4 sugar cubes
- 6-7 hard candies (like Lifesavers)
- 2 tsp molasses, corn syrup, or honey
- 3-4 glucose tablets (available over the counter)

- Do NOT treat with any foods containing fat/protein because it will slow the rise of blood sugar and cause a spike later.

Step 2: Wait 15 minutes and retest. If it is still less than 70, or you still have symptoms, repeat steps 1 and 2 until you reach 70 or more.

Step 3: Once your blood sugar is above 70, you need to eat something if your next meal is not scheduled (such as cheese/cracker/milk).

### Glucagon

Glucagon may be used for severe hypoglycemia when a person passes out or cannot swallow. It is sold by prescription in a kit with a filled syringe and a bottle of powder that must be mixed. Follow the directions for mixing the glucagon, then inject it as you would insulin. A family member or friend needs to know how to do this and may also need to call for emergency assistance.

### Using a Glucagon Emergency Kit

1. Remove caps from powder bottle and syringe.
2. Insert needle into bottle and inject liquid. (Remove syringe from bottle)
3. Shake bottle until liquid and powder mix.
4. Draw up mixture and remove syringe.

## 2. Blood Sugar (Continued)

- Inject contents of syringe into any area used for insulin injections.

Be prepared—Ask your doctor for a glucagon kit, keep it on hand.

### *Tips to remember*

- Know the signs and symptoms of low blood sugar
- Remember to eat some form of sugar or carbohydrate, but NOT protein or fat, if your blood sugar is low
- If your blood sugar level is between 60-80mg/dl, drink ½ cup of fruit juice or one tablespoon of sugar and recheck your blood sugar in 15 minutes
- Know how to use your glucagon kit for treatment of extremely high blood sugar

### **High blood sugar**

Even when you inject insulin, you can still get high blood sugar sometimes (called hyperglycemia). High blood sugar can lead to you falling into a coma (ketoacidosis). For this reason, someone close to you should know these symptoms and how to treat them. Over time, high blood sugar can damage many of your organs.

Drinking an extra 8 ounces of sugar-free fluid each hour can help with high blood sugars above 250. Talk to your doctor to see if this might be right for you.

When blood sugar is high you may have one or more of these symptoms:

Early Stage	<ul style="list-style-type: none"><li>• Thirst (dry mouth)</li><li>• Frequent urination</li><li>• Blurred vision</li><li>• Feeling tired</li><li>• Itching (vaginal/genital)</li></ul>
Later Stage	<ul style="list-style-type: none"><li>• Nausea, vomiting</li><li>• Stomach cramps</li><li>• Sweet, fruity breath</li><li>• Flushed skin</li><li>• Deep, rapid breathing</li><li>• Unconsciousness</li><li>• Death (if not treated)</li></ul>

### Causes of high blood sugar

- Skipped insulin injections or not taking right amount
- Illness or infection
- Severe stress or trauma (surgery, accident, etc.)
- Overeating
- Eating concentrated sweets
- Insulin that has expired or has been damaged by heat or cold

## 2. Blood Sugar (Continued)

### How to prevent high blood sugar

- Inject the right amount and the right kind of insulin at the right times each day
- Test your blood sugar regularly
- See a doctor when ill or if you have an infection
- Follow your meal plan
- Do not exercise if your blood sugar is very high (240 plus). Exercise at this time can make blood sugar go even higher.

### *Tips to remember:*

1. Know the signs and symptoms of high blood sugar
2. Exercise more or limit your carbohydrates at your next meal if you have high blood sugar
3. If you have been doing all you can to keep your blood sugar in control, but still have high blood sugar readings, talk to your nurse or physician as you may need to adjust your medication

### 3. Food and Fluids

The most important part of treatment is to **balance what you eat with how much and when you eat.** When you eat the right foods in the right amounts, blood sugar is easier to control.

Keep these in mind when choosing foods:

- Eat the right amounts (serving sizes) of the right foods at each meal. The nurse or dietitian can help you set up your meal plan.
- Eat foods low in fat.
- Eat at about the same times each day; don't skip or put off meals or snacks.
- Eat a bedtime snack
  - if it's part of your meal plan, or
  - if your blood sugar is less than 100
- Exercise some each day.
- Eat before exercising if blood sugar is less than 100.



#### Food choices

To help with meal planning, all foods have been put into groups depending on how much carbohydrate, protein, and fat they have. These 3 groups are:

Carbohydrate	<ul style="list-style-type: none"><li>• Starches/breads</li><li>• Fruit</li><li>• Milk</li><li>• Vegetables</li><li>• Other carbohydrates</li></ul>
Protein	<ul style="list-style-type: none"><li>• Meat and meat substitutes<ul style="list-style-type: none"><li>• Very lean</li><li>• Lean</li><li>• Medium fat</li><li>• High fat</li></ul></li></ul>
Fat	<ul style="list-style-type: none"><li>• Monounsaturated</li><li>• Polyunsaturated</li><li>• Saturated</li></ul>

If a meal calls for one fruit, you can eat any one serving of fruit on the fruit list. For a meat, you can choose any meat from the meat list and so on. Because you can swap one food for another in the same group, your food list is called an exchange list.

Learn to read labels in the grocery store to tell the carbohydrate, protein, fat, and sugar content of the items you buy.

## 3. Food and Fluids (Continued)

Most likely you will be told to eat low-fat foods. Having diabetes puts you at risk for heart disease.

Check with your doctor or nurse about what meal plan (calories) is right for you.

### Free foods

These are foods and seasoning that may be eaten and not counted as exchanges. These

“free foods” have less than 20 calories or less than 5 grams of carbohydrate per serving. You can eat as much as you want of these foods when no serving size is given. If a serving size is listed, you can eat up to 3 servings a day of free foods.

Spread these out over a number of meals and snacks each day. Eating all 3 servings at one time could affect your blood sugar.

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### Free Food Exchange List

#### Drinks

- Fat-free bouillon or broth (*high in sodium*)
- Coffee or tea
- Diet soda

#### Sweet Substitutes

- Jell-O (sugar-free)
- Jam or jelly (sugar-free)—1 tsp
- Whipped topping (sugar free)—2 Tbsp

#### Condiments

- Ketchup (*high in sodium*)—1 Tbsp
- Hot Sauce (*high in sodium*)
- Mustard
- Salad Dressing (low-calorie) (*high in sodium*)—2 Tbsp
- Salsa (*high in sodium*)
- Taco Sauce (*high in sodium*)—2 Tbsp
- Vinegar

#### Fruits

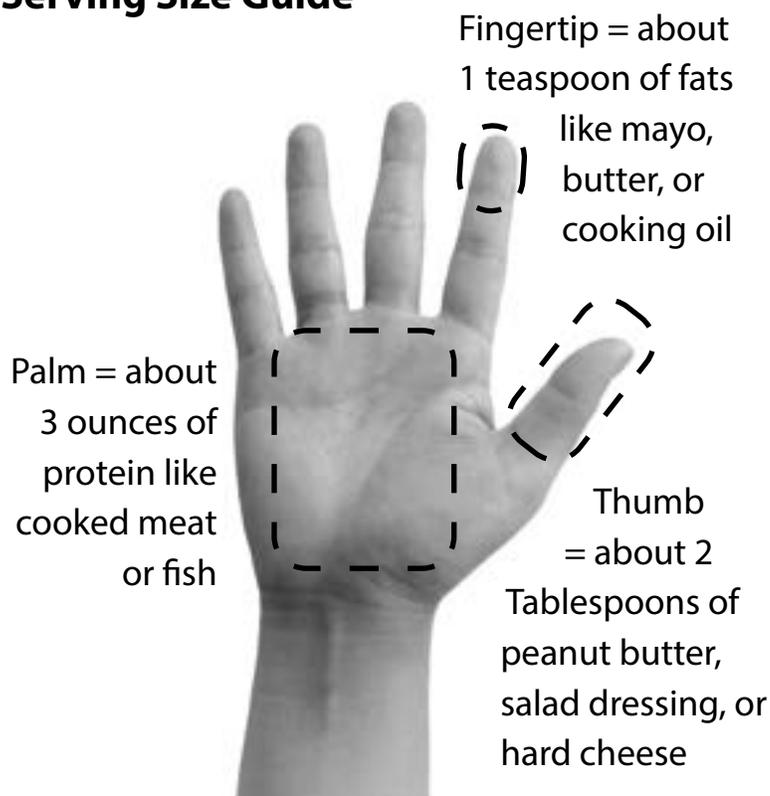
- Cranberries (no sugar added)
- Rhubarb (no sugar added)

#### Vegetables

- Celery
- Cilantro
- Cucumber
- Dill pickles (unsweetened) (*high in sodium*)
- Horseradish
- Onions
- Peppers—hot or chile, not canned
- Radishes
- Salad greens

### 3. Food and Fluids (Continued)

#### Serving Size Guide



Cupped hand - about 1/2 cup of snacks like dried fruit and nuts



Closed fist = about 1 cup of fruit, cooked vegetables, beans, or starch like rice



#### Carbohydrate Counting

Carbohydrates are your body's main source of energy. Your body turns carbs into sugar (sugar), which it uses as fuel. Without carbs, your blood sugar will get too low and you won't have any energy. But, having too many carbs at once can make your blood sugar too high.

Most carbs come from:

- Breads
- Starchy foods
- Grains

- Fruits
- Milk
- Sugar

No matter what foods they come from, all carbs are turned into sugar. This means that all carbs (not just sugars) raise your blood sugar level.

You want to keep your blood sugar from getting too high or too low. Carb counting helps by spreading your carbohydrates out over the course of the day.



### 3. Food and Fluids (Continued)

*Tips to remember:*

1. Avoid the sugar, sweets, and sodas with sugar.
2. Increase high-fiber foods, such as dried beans, whole grains, and raw vegetables to consume 25–35 gm/day.
3. Avoid foods high in fat or oil (for example, fried foods, bacon, sausage, bologna, mayonnaise, and regular cheeses).
4. Limit your milk to 2 cups of skim or fat free per day.
5. Limit fruits to 1 small piece for lunch and dinner. No fruits for breakfast; avoid fruit juices.
6. Limit drinking alcohol as it can interact with your medications.



## 4. Exercise

**Exercise is a major part of treatment for diabetes.** What exercise does for you depends on what kind you do, how often you do it and for how long. Here is what exercise can do for people with diabetes:

- Help the body use insulin better
- Lower blood sugar
- Burn calories (weight control)
- Improve sense of well-being
- May decrease the amount of insulin needed

You should not exercise when your blood sugar is very high (240 plus). Contact your doctor if your blood sugar stays high. Many people with diabetes will be told to exercise in a group with medical supervision. Your doctor or exercise specialist can tell you what type of exercise to do and how hard to work out.

Counting calories is one way of deciding how much exercise to do. Here is a sample of some exercises and the calories they burn:

- Walking burns 250–450 calories per hour
- Swimming, jogging, or cycling burns 400–500 calories per hour
- Climbing stairs or skipping rope burns more than 400 calories per hour

Here are some other points to keep in mind about exercise:

- Warm up before exercise, and cool down afterward.
  - Walk slowly for 5–10 minutes to warm up.
  - Stretch your muscles before going on to harder exercise. This helps loosen the muscles to prevent injuries.
  - Slow walking and stretching after hard exercise help the heart adjust to a slower beat and keep muscles from cramping.
- Exercise each day in some way. Use the stairs. Walk to visit nearby friend or take a short walk around the neighborhood.
- Start slowly and set a pace that is right for you. For one person, exercise with an easy home-walk program might look like this:

Week 1-2	Walk ¼ mile Once a day	5 minutes
Week 3	Walk ¼ mile Twice a day	5 minutes each time

- Increase distance with your doctor's OK!
- In bad weather, you can keep up your walking exercise at an enclosed mall. Walking is a cheap and safe way to exercise.
- Your doctor will tell you what pace to follow for any type of exercise. (Those with foot or leg problems may need to find other ways to exercise safely.)
- Wear shoes that support your feet and wear comfortable clothes.

## 4. Exercise (Continued)

- When you exercise, have someone nearby who knows that you are on insulin and knows the symptoms of low blood sugar and how to treat them.
  - Do not inject insulin into areas which will be used in exercise. When exercising, inject insulin in the abdomen rather than arms or legs. Exercise can speed up the use of insulin from an arm or leg site.
  - Take a cell phone so you can call for help if you need it.
  - Always wear identification like an ID bracelet or necklace.
- sugar reactions with exercise, tell your doctor or nurse. It may be wise to exercise with a friend.
- When blood sugar is close to your normal range, eat before exercising. If you don't, blood sugar may drop too low during exercise.
  - You may want to talk with your doctor about how to adjust your insulin for exercising.
  - If blood sugar is very high (240+), do not exercise. Wait until blood sugar comes down because exercise at this time can raise blood sugar even higher.

### Exercise precautions

During exercise, your body uses insulin and blood sugar faster. So, you must know your blood sugar level and how to adjust foods and insulin to suit your workout. Here are some guides:

- Always check your blood sugar before and after exercise. If it is not at least 100 before exercise, have a snack with carbohydrates.
- To avoid low blood sugar reactions, do not exercise when insulin is at its peak.
- Carry a sugar source with you when you exercise.
- If you often have low blood



## 5. Teeth, Gums, and Skin

**Diabetes may make you more prone to gum disease.** As people age, it is most often gum disease, not tooth decay, that causes loss of teeth. Infections of your teeth and gums can also make your blood sugar level go up. Be sure to do these:

- Have regular checkups with your dentist every six months.
- Always tell your dentist you have diabetes.
- Clean and floss your teeth daily.

Your dentist or nurse can tell you how to care for your teeth and gums.

### Taking care of your skin

Since people with diabetes may have poor blood flow, care of the skin is important.

- Wear a wide brimmed hat and use sunscreen to prevent sunburn.
- Use a moisturizer to keep your skin from getting too dry.
- Tell your doctor or nurse if you have redness, swelling, or pain for more than one day.
- Keep your skin clean.



## 6. Foot Care

**People with diabetes need to take very good care of their feet and legs.**

### **Why it is important**

Diabetes affects your whole body and high blood sugar leads to poor circulation (vascular disease) and nerve damage (diabetic neuropathy).

Poor circulation means your legs and feet don't have good blood flow and you can't fight off infection in your feet and legs as well. Simple cuts or sores can become very serious, even leading to gangrene or amputation.

If you have nerve damage, you may feel burning, aching, or pins and needles in your feet and legs. You can also have numbness or loss of feeling. Because of this loss of feeling, you may not notice a small cut or sore at first. Unless you check your feet and legs daily, the small problem can become a major one.

### **How to check your feet and legs**

Keep your feet **CLEAN & DRY**

1. Wash feet gently each day. This can be part of your daily bath or shower (Do not soak feet.). Use a white washcloth to help you see any drainage.
2. Use warm (not hot) water and a mild soap (avoid deodorant soaps). Test the water with your elbow before bathing. Your feet may be too numb to feel the heat.
3. Pat feet dry, and gently dry between each toe. Look between all toes and at the tops, bottoms, sides, and heels of your feet. A hand mirror or magnifying mirror will help you to see.
4. Have a "socks off" exam at each doctor visit. Have your doctor or nurse check the feeling and pulse in your feet at least once every 3 months.
5. See a podiatrist (a foot doctor) or your doctor when you have corns, callouses, blisters, cuts, scrapes, bruises, or other foot problems. Don't treat foot problems yourself.
6. Have your doctor, nurse, or a podiatrist show you how to trim or file your toenails. Then trim or file them only after bathing when the nails are soft. (File with an emery board only.) If your toenails have a fungus or are ingrown, always have a podiatrist or your doctor trim them for you.
7. If your feet sweat, add a tiny bit of powder to your socks or stockings before putting them on. Always adjust for wrinkles, avoid seams, and don't wear socks that have holes or that have been mended.
8. If your feet are dry and scaly, rub lotion on them after your bath and before bed. This helps keep the skin soft. Never put lotion between your toes.

## 6. Foot Care (Continued)

Anything wrong with a toes or foot can become a major problem for someone with diabetes. People with diabetes are 15 times more likely to have a foot or lower leg amputation than someone without diabetes. Early treatment can reduce the risk of serious infection or amputation.

Report foot injuries or infections EARLY. Call your doctor or nurse if you have any of these:

- Red or dark places, pus, swelling, slow healing sores.
- Blisters, bruises, cuts, corns, callouses.
- Burns, punctures, rubbed places (abrasions).
- Fungus under the toenails or ingrown toenails.

### Improve blood flow to feet and legs.

1. If you smoke, quit.
2. Control blood sugar and blood pressure.
3. Exercise regularly as prescribed by your doctor and try to keep a normal body weight.
4. Eat less saturated fat. This can help prevent the buildup of fatty deposits in the arteries (atherosclerosis) and improve blood flow.
5. Wear socks and supportive, comfortable shoes. Shoes should feel good the day you buy them, not weeks later after they have been worn. Shop for them in the

afternoon when your feet are biggest.

Check to be sure the linings and stitching in the shoes are smooth.

6. Sit with legs uncrossed.
7. Wear socks to bed if your feet are cold. Never use heating pads, hot water bottles, or “electric” socks.
8. Don’t wear garters or socks or stockings with tight tops; don’t twist hose around legs to keep them up. Avoid tight clothes.
9. Avoid sandals, sling back heels, or open toes. They leave the foot open to injury and dryness.
10. Never go barefoot.

### *Tips to remember:*

1. Inspect your feet daily
2. Report any problems with your feet to your physician
3. Wash your feet daily with warm soap and water and pat dry, especially between your toes
4. Wear shoes and socks that fit properly
5. Avoid going barefoot
6. Avoid exposing your feet to extreme temperatures

## 7. Insulin

Insulin cannot be taken by mouth, so it must be injected. There are several methods that be used to inject insulin—like a syringe, insulin pen, or pump.

There are a number of types of insulin. The main things that make them different are:

- When they begin to act
- When they peak
- How long they last

How one person responds to a type of insulin differs from another. Your doctor will tell you the type(s) and amount of insulin you need.

### When insulin acts and how long

Like any medicine, insulin takes a certain time to begin working. This is called the onset of action. After onset, insulin reaches its full effect or peak action. From its peak, insulin lasts a fairly short time before it is used up by the body and more is needed. This is called length of action.

So, to control diabetes 24 hours a day, you may need to take 2 types of insulin with different length and peak actions. These insulins can often be combines in one syringe. Check with your doctor or nurse before mixing insulins. For many people with



## 7. Insulin (Continued)

diabetes, the best way to reach their goals for blood sugar control is to divide the insulin into 2 or more injections a day. Insulin needs to be taken about the same times each day.

The onset, peak and length of action depend on many things; the type of insulin, your activity level and where on your body you inject the insulin.

Your doctor will prescribe:

- The type and brand of insulin you will take
- How often and at what times to take it
- The dose
- If it will be more than one type (such as a short-acting and intermediate-acting) or a premixed type

*Tips to remember:*

1. Follow your physicians' orders for giving yourself subcutaneous (injected) insulin
2. Make sure you prevent contamination from germs while preparing and giving yourself insulin

Time I take it: \_\_\_\_\_

Type of insulin: \_\_\_\_\_

Begins to work \_\_\_\_\_ hour(s) after injecting

Peak action \_\_\_\_\_ hours after injecting

Lasts \_\_\_\_\_ hours

Time I take it: \_\_\_\_\_

Type of insulin: \_\_\_\_\_

Begins to work \_\_\_\_\_ hour(s) after injecting

Peak action \_\_\_\_\_ hours after injecting

Lasts \_\_\_\_\_ hours

Time I take it: \_\_\_\_\_

Type of insulin: \_\_\_\_\_

Begins to work \_\_\_\_\_ hour(s) after injecting

Peak action \_\_\_\_\_ hours after injecting

Lasts \_\_\_\_\_ hours

## 8. Syringes

### Syringes

Syringes can be bought at any drugstore or on many online sources, but you may need a prescription. They can be bought in several sizes. Some can hold 100 units of insulin. Others can hold only 30 or 50 units of insulin. They are marked in units by little lines, like a ruler.

Check with your doctor to see which size insulin syringe and needle length works best for you.

### Used syringes and lancets

Used syringes and lancets (sharps) should be treated as medical waste. You may need to buy a sharps container from a drugstore, medical supply store, or online, or you may be able to use heavy plastic containers such as a bleach or laundry detergent container. Make sure you mark these containers as “sharps”. Learn the state or county laws you must follow by calling your sanitation or county health department.

You can check on local disposal options at [safeneedledisposal.org/states/new-york](http://safeneedledisposal.org/states/new-york).



## 9. How to Draw Insulin

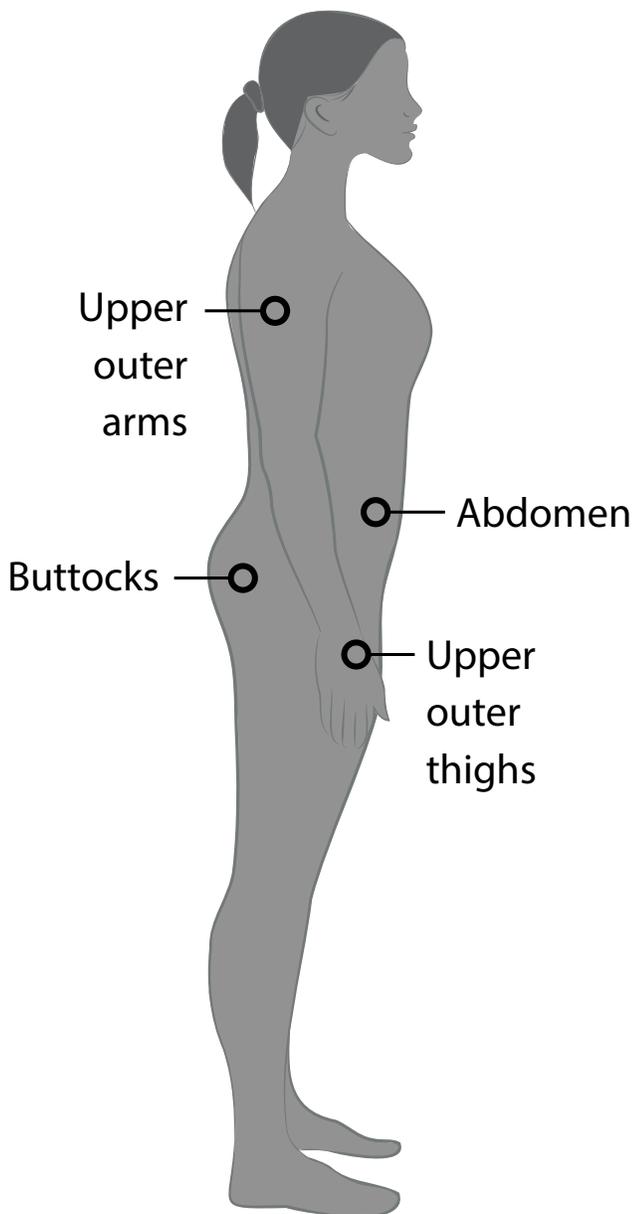
1. Wash your hands with soap and water
2. Check the bottle of insulin to make sure it's OK and not out of date
3. Wipe off top of insulin bottles with an alcohol wipe. Wipe off your injection site too.
4. Mix the insulin by rolling the bottle between your hands at least 10 times. (This can warm the insulin to help reduce pain from the injection). As a rule, non NPH insulin is not rolled.
5. Remove syringe from packaging and take any end caps off.
6. Pull out plunger until it reaches the number on the syringe that matches how many units you need to take.
7. Insert the needle into the insulin bottle. Push the plunger all the way in.
8. Turn the bottle upside down and pull out the plunger until it fills with the number of units you take.
9. Check to make sure there are no air bubbles in the syringe. If there are, tap the syringe until the bubbles float to the top and then push the plunger in to get the air bubbles out. Then recheck to make sure you still have the correct number of units and draw more into the vial if necessary.
10. Pinch the skin together and push the needle straight into your skin at a 90° angle. Un-pinch your skin. Then push the syringe plunger all the way down. Remove needle and apply pressure to the site. Do not rub site.



## 10. Injection Sites

**There are a number of places (sites) on the body where you may inject insulin.** These places have enough fatty tissue to absorb it well. The abdomen is the best place to inject.

When you inject insulin affects how fast it is absorbed. Exercise can speed up the use of insulin from an arm or leg site. So always use your abdomen if you plan to exercise soon after taking your shot.



Decide with your doctor which areas of the body are best for you. You can rotate sites within one area for one week at a time. Keep injection sites within the area at least one inch apart. Some people use abdomen sites most of the time by moving at least an inch from the last injection. It may be helpful to keep track of the injection sites you use on a daily or weekly basis.

### *Tips to remember:*

1. Prepare the injection site by swabbing center of area with alcohol and rotate outward in a circular manner about two inches.
2. Inject the needle into skin using a quick, firm motion at a 90 degree angle.
3. Inject the insulin slowly into your skin.
4. Cover the tip of the needle with alcohol pad and withdraw the needle, holding the swab over the site briefly.
5. Dispose of the needle in a container.

## 11. Mixing Two Kinds of Insulin

**If you need to inject 2 types of insulin (like short-acting and intermediate-acting), you may be able to mix them in one syringe and inject them at one time.** To remember which is which, the intermediate insulin is cloudy and the short acting is clear. Check to make sure both insulins can be mixed.

### Steps for mixing 2 types of insulin

1. Wash your hands with soap and water.
2. Check both bottles of insulin to be sure they are OK and not out of date.
3. Wipe off tops of insulin bottles with an alcohol wipe. Wipe off your injection site.
4. Mix both bottles of insulin by rolling each bottle between your hands at least 10 times. Non NPH insulin is not rolled.
5. Remove syringe from packaging and take any caps off.
6. Pull out plunger until it reaches the number of units you need to take of the cloudy (intermediate) insulin.
7. Insert the needle into the first insulin bottle. Push the plunger all the way in and remove syringe from bottle. Do not draw out any of the cloudy insulin at this time. Insulin #1 Name: \_\_\_\_\_
8. Pull out plunger until it reaches the number of units you need to take of the clear (short-acting) insulin.
9. Insert the needle into the 2nd insulin bottle. Push the plunger all the way in.

Insulin #2 Name: \_\_\_\_\_

10. Turn the bottle upside down and pull out the plunger until it fills with the number of units you take of the clear insulin.
11. Remove the syringe and check to make sure there are no air bubbles. If there are, tap the syringe until the bubbles float to the top and then push the plunger in to get the air bubbles out. Recheck to make sure you still have the correct number of units and draw more if necessary.
12. Insert the needle into the first bottle of insulin (cloudy) and turn the bottle upside down. Pull the plunger out to fill with the number of units you take. Make sure you have the right amount of total units (e.g., 10 units of bottle 1 and 30 units of bottle 2 = 40 total units). Do not push any insulin back into the bottle now.
13. Remove the syringe and check to make sure there are no air bubbles. If there are, tap the syringe until the bubbles float to the top and then gently push the plunger in to get the air bubbles out. Recheck to make sure you still have the correct number of units. If you do not, throw the syringe away and start again.
14. Pinch the skin together and push the needle straight into your skin at a 90° angle. Un-pinch your skin. Then push the syringe plunger all the way down. Remove needle and apply pressure to the site. Do not rub site.

## 12. Storing Insulin

**Always keep one or more extra bottles of insulin on hand, at home or on trips.**

When traveling, keep insulin and syringes with you at all times. Any form of insulin will fit in a pocket or purse, but never leave insulin where it is very hot (more than 86°F/30°C) or below freezing. (For example, don't store in the glove compartment of your car or directly on ice in an ice chest.) You can use a Thermos type jar, or you may want to buy a special storage container.

These facts about storage apply to most insulins. Check with your doctor or pharmacist about the best way to store yours.

- Keep unopened insulin in the refrigerator, but do not freeze.
- Once opened, insulin may be stored in the refrigerator (for longer life) or at room temperature. (Keep out of direct sunlight. When you open a bottle of insulin, write the date on it. Whether you store opened insulin in the refrigerator or not, do not use after the expiration date on the bottle.)
- If you plan to prefill your insulin syringes, they should still be stored in the refrigerator. They can be taped to a heavy piece of paper with the day to be used and dose of insulin written at the top or stored in a tall glass. If using two types of insulin, be sure to mix the insulins by rolling the syringe.

## 13. Insulin Pens

**An insulin pen is a helpful tool for injecting insulin.** It looks like a pen with a cartridge. There are two types of insulin pens:

- Prefilled pens, which are thrown out after the insulin cartridge is used
- Reusable pens, which have replaceable cartridges.

Advantages of using an insulin pen

- Handier than using a syringe.
- Less time consuming than using a syringe.
- Easier to use in public.
- Simpler to use than a syringe.
- Easier to get the right number of insulin units.
- Less pain (because the needles are smaller)
- Option of using reusable or disposable pens.

Points to keep in mind

- Not all insulin types come in a cartridge for use in an insulin pen.
- You can't mix insulin types when using insulin pens. If the insulin mixture you need isn't available as a pre-mix, you have to take two injections—one for each type of insulin.
- Insulin for pens and cartridges often costs more than insulin for syringes.
- When removing the needle from your

pen, be careful not to stick yourself.

- Don't carry a pen with the needle attached. Air can get in the cartridge and slow the time it will take for you to get your insulin dose.

How to use an insulin pen

There are many different types of insulin pens available. Each one may be a little different in how it is used. However, the following steps give you the steps involved, even if your pen may require a step be done a little differently.

1. Clean area with alcohol. Insert the insulin cartridge if you are using a reusable pen. If using a prefilled pen, go to step 2.
2. Screw the needle on. Make sure insulin is flowing out of your pen needle. To do this, hold your pen up, tap the clear plastic barrel lightly, dial in 2 units and push the injection button all the way in. You should see a drop of medicine at the top.
3. Dial the amount of injection. This is shown in the pen's window, and in most pens, can be heard by a click as you dial. If you dial too much, turn back knob to correct.
4. Hold pen at injection site at a 90° angle. Insert the needle and press on the plunger injection button to deliver insulin. Hold the pen needle in for 5 seconds after you release the plunger.
5. If using a pre-filled pen, throw it away

## 13. Insulin Pens (continued)



when it is empty in a sharp's container or hard plastic container. If using a reusable pen, store it away. Use the needle only once.

The cartridge should be stored in a refrigerator until used. Once it is in your pen, it can be kept at room temperature for no more than 10 days to 1 month, depending on the type of insulin used.

### Injection sites

The injection site you use will depend on the type of insulin you are using, and your

personal lifestyle. If you are using rapid-acting insulin (insulin that lowers your blood sugar quickly), you may inject insulin in your stomach before or after you eat.

If you plan on exercising, like taking a walk, you should inject in a site that you are not using during the activity.

### *Helpful Tips*

- Don't use the same site each time. If you inject into your arm, do it in a slightly different part of your arm each time – 2 inches away from the other site.

## 13. Insulin Pens (continued)

- Change the part of your body you use every week or two. To keep your blood sugar steady, use the same main area on your bod, like your stomach or arm, for 1 week before you switch.

### Insulin pen safety

Using insulin pens can be useful and convenient. Even so, there are 4 major safety measures to taken when using one:

- Don't carry your pen from one extreme temperature to another without being in a protective case (ex: taking your pen from the cold outdoors into a heated house). Your cartridge will expand, causing the readout to be wrong when you dial the insulin units. You can buy a protective case at your pharmacy.
- Don't reuse a pen needle. The needle can:
  - Break and get stuck in your skin
  - Cause a bruise and make you bleed
  - Become non-sterile
- Don't flush your needle(s) in a toilet or throw them into the trash at home or away from home. You can injure people. Ask your doctor what the rules are for throwing away needles in your town or county. If the area you live in doesn't have specific rules, throw them away in a sharp's container.

### Traveling with an insulin pen

Prepare for your trip. Before you leave:

- Get prescriptions for all your medicines and supplies that you will carry with you. If you are going out of the country, you may need to know generic drug names.
- Get a letter from your healthcare provider stating that you use an insulin pen and have to carry your supplies with you.
- You may want to get names of healthcare providers in the city you will be visiting. The American Diabetes Association can help with this. Call 1-800-DIABETES.
- Contact your insurance carrier and ask what you need to do if you need medical attention on your trip. You may want to ask about coverage in the U.S. and out of the country. Ask about needing supplemental coverage for the length of time you will be gone.
- Take extra insulin with you because pharmacies don't always carry every type of insulin.
- When traveling, put your insulin pen in your carry-on luggage—do not check it. This way, you can control your pen's temperature. You don't want it to freeze or get too hot.
- Keep your insulin pen in a case that is designed for insulin storage, a lunch box, or other container with an ice pack.

## 14. Insulin Pump

**Your insulin pump may become your “new best friend” when you learn how to use it.** It can make living with diabetes less restrictive. A pump gives you a small amount of insulin throughout the day. When you eat, you simply press a button, and you’ve given yourself a dose of insulin to handle the food. Your pump can help you better control your blood sugar and lower your risk for complications. And you will feel better. But there are things that you must learn:

- How your pump works
- How to change the infusion set
- How to program your pump
- What to do if your infusion set gets

clogged or if it comes out

- The best insertion sites for you
- How to count carbohydrates in your food
- How to balance your food and insulin needs
- When you should not wear your pump

Your pump may take some getting used to, so it may take a few months before you are totally comfortable using it. At first, it may be a “best estimate” of your basal rate (insulin being delivered all of the time) and bolus doses (additional doses given when needed). You will find what’s best for you through trial and error.



## 14. Insulin Pump (continued)

### What is an insulin pump?

An insulin pump is a small device you wear that connects to a catheter under your skin. It has a cartridge filled with insulin and a small battery-operated pump. You program the device to give you the amount of insulin you need.

### How it works

- You insert the needle under your skin, most often in your abdomen. This is like giving yourself an injection of insulin with a syringe. But you don't remove the needle. You should change the infusion set every 2–3 days.
- An infusion set delivers the insulin to your body through a thin plastic tube with a needle at the end where the insulin is injected.
- The pump is not automatic and must be programmed for the amount of insulin you need. You must monitor your blood sugar levels regularly, so you can use your pump to get good control of blood sugar.
- The pump allows you more freedom than the strict scheduling demands that other methods of delivering insulin require. The more active your lifestyle, the more benefit you may find using a pump. Don't use the pump during activities that might damage the pump or pull the needle out.

### About insulin pumps

Your pump is made to be used all the time. It delivers a rapid-acting insulin 24 hours a day based on the program set up for you. The amount of insulin being delivered all the time is called the basal rate. Most often, this is a small amount. This basal rate keeps your blood sugar in the best range between meals, as well as overnight.

When you eat, you pump a programmed bolus dose of insulin matched to the amount of food you eat. This is the way your body would release insulin, if you did not have diabetes. Your pump makes it possible to do the same thing. You don't have to worry about eating at set times each day.

Using an insulin pump means you need to understand carb counting and are able to calculate your carb intake. You will be trained on how to program your pump. At first, your healthcare provider will give you the settings to use. But you will learn how to change and/or correct the settings based on your needs.

### Insertion sites for the infusion set

Choose an insertion site where you have some padding. You need to be able to pinch the skin together. Avoid areas over a bone or where you have a scar, tattoo, bruise or body piercing.

Rotate the site each time you insert the set. You can use small steps and move at least 2

## 14. Insulin Pump (continued)

inches away from a previous site or you can divide the area into 4 parts (upper left, upper right, lower right, and lower left). You can then rotate your site by area.

You can put the infusion set:

- In the abdomen area (insulin is absorbed best in the abdomen. For this reason, it is the area most often used with a pump.) Place it from just below the rib cage to just above the pubic area. It should be at least 2 inches away from your belly button. Avoid the belt/waistband area where clothes might bind or rub.
- In the buttocks, near the pocket line (where the top of a pocket would be in your pants).
- In the upper arm. But this area may be hard to get to if you need two hands to insert the set. Insert into the fatty area, not into your muscle.
- In the hip, from just below your belt line to just above the undergarment line.
- In the upper thigh, in a fatty area, not into muscle.

Whatever method of rotation you use, you need to be able to remember it. You may find it helpful to rotate on the same days of the week. Pick 2 days, like Monday and Thursday. And rotate on these 2 days each week.

### Insertion sites and infections

Infections can quickly become serious for you. Take extra care with your insertion site. To prevent an infection at an insertion site:

- Keep the skin around the area free of bacteria. Don't breathe on your skin once it is scrubbed for insertion. Don't let non-sterile items come in contact with the area.
- Scrub the site each time you use a new infusion kit. Use a good antibiotic solution to kill the germs. Use solutions like betadine and Hibiclens. Alcohol will not kill germs as well and should not be used for this.
- Consider using a bio-occlusive dressing over the insertion area. It allows your skin to sweat but keeps germs from getting through to your skin.

If you have any redness or inflammation at a site, change to a new site using a new infusion set. Tell your doctor or nurse about this, as you may need to use a topical antibiotic cream. If an antibiotic cream is used early, it may slow down the infection growth.

If an infection occurs, do not use that site until the infection has totally cleared up. You may not want to use your pump until the infection is gone. Go to your backup method of injecting insulin during this period.

## 14. Insulin Pump (continued)

### Attaching the infusion set

The infusion set penetrates the skin.

Therefore, it is always important to use a sterile technique before inserting the needle or cannula into your skin. Every 2–3 days, change your infusion set to help prevent infections and a change in insulin absorption.

Get all your supplies ready. You will need:

- Infusion set
  - Dressing
  - Adhesive remover
  - Cotton pad or swab
  - Clean paper towels
  - Tape
  - Plastic zip lock bag
  - Sharp's container
  - Skin prep
1. Be sure the counter top is clean and dry. Leave the infusion set in the sterile wrapping until you are ready to insert it. When ready, open the wrapping and lay the infusion set down on a clean paper towel.
  2. Wash your hands with warm, soapy water. Dry them on a clean towel or paper towel. Do not touch your face or other parts of your body with your clean hands.
  3. Choose your injection site. Use the skin prep to sterilize it. Germs can move around on the skin, so sterilize a 2- to 3-inch area around the site. Scrub the skin with an antiseptic solution. Let it dry. Don't blow or breathe on your skin after it has been sterilized or on any supplies you are using. Your nose and mouth have a lot of germs that can get on your skin, pump, infusion set or the reservoir and lead to infections.
  4. Pick up the infusion set and uncoil the tubing. Put it back down on the paper towel.
  5. If you use a protective dressing, apply it to your skin around the site.
  6. Remove your old infusion set. You may need the adhesive remover. If so, apply it to the area to help remove the old set. Remove the needle and discard into a sharp's container. Put the remainder of the set in a plastic zip lock bag and throw it away.
  7. Attach the new tubing to your filled insulin cartridge tip. Lock it in place.
  8. Fill the tubing with insulin and make sure you see 4 or 5 drops come out the end (or out the needle if you are using a non-disconnect set). This priming helps prevent air bubbles in the tubing.
  9. Insert the set into the new site following the manufacturer's instructions. If you are using a disconnect Teflon cannula set, remove the inserter needle and discard it in a sharp's container. If you are using a

## 14. Insulin Pump (continued)

needle disconnect set, attach the tubing to the needle as instructed.

10. Apply the self-adhesive dressing. If it does not hold well, use tape to secure it to your body.
11. Use the pump clip to attach the pump to your clothing or put it in a pocket or other pouch.

Check your site each day for redness or tenderness and to be sure it is still secure.

Check the tubing for air bubbles. If bubbles appear, disconnect the tubing and refill with insulin until all the bubbles are gone.

### How to insert the needle

1. Stand up straight to keep your skin from bunching up or wrinkling when you apply the tape or dressing.
2. If you use a set with an adhesive surface that sticks to your skin, remove the backing.
3. Pinch the skin to get a hill of fat between your fingers.
4. Insert the needle at a 30°–45° angle into the pinched skin or as the manufacturer instructs.
5. Release the pinched skin. Attach the self-adhesive dressing or tape.

Inserting too close to a muscle can cause pain. If this happens, try inserting the needle

at a slightly deeper angle. Or, choose another site that has more “pinchable” fat. If you have trouble inserting the needle, you can try numbing the site with a small bag of ice or cold can of soda.

### Traveling with an insulin pump

Prepare for your trip. Before you leave:

- Call your doctor or nurse and ask any questions you have about your diabetes and insulin pump.
- Get written instructions for changes or adjustments you need to make while you are gone.
- Get prescriptions for all your medicines and supplies you carry with you. If you are going out of the country, you may need to know the generic drug names.
- Get a letter from your healthcare provider stating that you use an insulin pump and have to carry your supplies with you.
- You may want to get names of healthcare providers in the city you will be visiting. The American Diabetes Association can help with this. Call 1-800-DIABETES.
- Contact your insurance carrier and ask what you need to do if you need medical attention on your trip. You may want to ask about coverage in the U.S. and out of the country. Ask about needing supplemental coverage for the length of time you will be gone.

## 14. Insulin Pump (continued)



### Supplies you will need

- Your usual short-acting insulin in the original box with prescription label.
  - A new vial of intermediate or long-acting insulin in the original box with prescription label (for emergency use).
  - An insulin syringe or pen, in case you need to inject your insulin.
  - Insulin pump supplies. Take more than you might need based on the length of your trip.
- Extra batteries for your insulin pump and blood sugar meter.
  - Supplies for blood sugar monitoring (meter, strips/sensors, lancets, and logbook).
  - Glucagon emergency kit. Be sure a person traveling with you knows how to give you the glucagon.
  - Quick-acting snacks in case of low blood sugar (glucose tablets, fruit, fruit snacks, hard candy, etc.)
  - Prescriptions for your insulin pump supplies and other medicines you take.

### *Tips to remember:*

1. To change your insulin infusion set every 2–3 days as ordered
2. Make sure you are checking your basal/bolus history to verify you have appropriate insulin dosing
3. Monitor your urine ketones when your insulin infusion is interrupted as there is an increased risk of diabetic ketoacidosis (DKA)
4. If you have low blood sugar, suspend your pump
5. Rotate your infusion sites to prevent scar tissue or lumps of fat forming

## 15. Sick Days

**You know it is important for you to keep your blood sugar levels within your target range.** However, when you are sick, your blood glucose (sugar) levels may go up. Being sick may also make it hard to:

- Stick with your meal plan
- Exercise
- Take your medicine as you should

Your goal while you are sick is to continue your diabetes management plan as best you can. You want to avoid further complications from your diabetes. Ask your doctor or nurse about a sick day plan.

Call your doctor or nurse if you have:

- Been sick or had a fever (more than 101.5°F/38.3°C) for a few days and are not getting better
- Diarrhea or vomiting that lasts longer than 6 hours
- Blood sugar levels higher than 300mg/dl or less than 70mg/dl
- Symptoms of ketoacidosis—chest pain, trouble breathing, fruity smelling breath, or dry mouth
- Symptoms you can't explain

### Sick Day Plan

Use this sick day plan to help keep your blood sugar levels as close to normal as you can.

- Rest
- Drink a lot of fluids (8oz. every hour), unless you are told not to
  - If your blood sugar is over 240mg/dl, use sugar-free drinks, like broth, tea, or water
  - If your blood sugar is less than 240mg/dl, drink fluids that have 10–15 grams of carbohydrates in them
- Try your best to stick with your normal meal plan (but, if you can't, try to eat 45–50 grams of carbohydrates every 3–4 hours)
- If you can't eat at all, try a carbohydrate liquid or near liquid, like:
  - ½ cup non-diet soda
  - ¼ cup sherbet
  - ½ cup fruit juice
  - 1 popsicle
  - ½ cup sugar-free pudding
  - ½ cup gelatin
- Test your blood sugar every 3–4 hours
- Take your medicine, even if you can't eat (ask your doctor or nurse if you need to take less if you are not eating.)

## 15. Sick Days (continued)

### Sick Day Foods and Drinks

Here is a list of some foods and fluids that have 10–15 grams of carbohydrates in them.

#### Foods:

- 6 vanilla wafers
- 1 cup fresh sliced carrots
- ½ cup of cooked cereal
- 6 saltine crackers
- 1 slice of toast or bread
- 3 graham crackers
- ½ cup creamed cottage cheese with fruit
- 1 jar strained applesauce & apricots (baby food)
- ½ cup mashed potatoes
- ½ cup ice cream
- ½ cup fruit cocktail (juice packed)
- 5 whole-wheat crackers
- ½ cup custard

#### Fluids:

- 1 cup Gatorade
- 1 cup milk
- ½ cup fruit juice
- 1 cup canned tomato juice
- ½ cup root beer
- ½ cup sweetened instant tea
- ½ cup ginger ale
- 1 cup soup
- 1 cup low-calorie cranberry juice cocktail



## 16. Diabetes Complications

**Diabetes can have serious long-term effects (complications) on your whole body.** Taking good care of yourself and keeping tight control of your blood sugar can help prevent or reduce these effects.

### Heart disease

Having diabetes can increase your chances for heart disease or stroke. These are the leading causes of death in people with diabetes. But many of the things you do to control diabetes also help your heart and blood vessels.

These are ways to help:

- If you smoke, quit. Smoking is the worst thing you can do for your heart. It raises blood pressure, tightens blood vessels, and leads to fatty buildup in your arteries.
- Maintain a healthy weight.
- Eat a low-fat diet.
- Control blood pressure.
- Control blood cholesterol and fats.
- Ask your doctor or nurse about daily aspirin.
- Exercise regularly.

### Poor blood flow and infections

Poor circulation (reduced blood flow) occurs when blood vessels leading to the legs and feet become narrow or harden. This is part of aging, but it often happens sooner in people with diabetes. When this happens, the legs

and feet do not get enough white blood cells to fight infection. If not treated with care, simple cuts and sores can become serious ulcers and infections. These can lead to gangrene or amputation.

To improve blood flow to feet and legs:

- Don't smoke. Ask your doctor or nurse for help quitting if you need it.
- Control blood sugar and blood pressure.
- Exercise regularly.
- Sit with uncrossed legs and walk around during the day if you sit a lot.
- Wear shoes that fit well with plenty of room for your toes.
- Do not wear hose or socks with tight, elastic tops, do not twist hose around legs to keep them up.
- Gently massage cold feet. Wear socks to bed if your feet stay cold.

### Neuropathy

Nerve damage (neuropathy) is another complication of diabetes. It is most often related to how long a person has had diabetes and how well blood sugar has been controlled. It can affect many areas of the body such as the bladder, bowel, and other organs. More often, it affects the feet and legs. The symptoms can be burning, aching, feel like "pins and needles," or loss of feeling. All of these range from mild to severe. The

## 16. Diabetes Complications (continued)

discomfort is often worse at night. With time and good blood sugar control, some of the damage can be reversed. But some nerve damage can't be reversed. Keeping tight control of your blood sugar is the best defense.

### Eye problems

High blood sugar can cause changes in your eyes (diabetic retinopathy) that can lead to blindness. More than half the people who have had diabetes for more than 10 years have diabetic retinopathy. Having diabetes can also lead to cataracts and glaucoma.

All of these problems can be treated if caught early. For this reason, it is important to have your eyes dilated and examined once a year. Also, if you notice any changes in your vision, report them at once.

As with other complications of diabetes, tight control helps limit eye problems. Also, if you have high blood pressure, keeping it under control can help prevent some eye complications.

See your ophthalmologist (eye doctor) at least once a year.

### Kidney problems

Kidney disease (nephropathy) or renal failure is a risk for people with diabetes. Your risk for it goes up with the number of years you have had diabetes. It also increased if you have

high blood pressure and frequent urinary tract infections.

Kidney disease is very sneaky. A person can lose 70% of kidney function and not know it. Then when it is finally found, the kidneys are already damaged. Control and prevention are your best protection.

- Have a microalbumin urine test at least once a year to check for protein in the urine.
- Call your doctor or nurse at the first sign of a urinary tract infection (UTI). Symptoms include blood or pus in the urine, burning with urination, and/or frequent urination. This must be treated right away.
- Keep blood sugar and blood pressure as normal as possible.
- Talk with your doctor before having any tests where dyes are used.
- Cut back on salt intake. Beware of foods high in salt such as canned soups. Read labels for sodium content.

### High blood pressure (hypertension)

People with diabetes are twice as likely to have high blood pressure as those who don't have diabetes. Because of your diabetes, it is very important that you control high blood pressure (if you have it).

High blood pressure is sneaky. You can have

## 16. Diabetes Complications (continued)

it and not know it. While it damages the artery walls, letting fat and cholesterol build up more easily, you may not feel a thing. Yet, over time, much damage can be done, causing strokes, heart attacks, or kidney failure. This doesn't have to happen. Blood pressure can be fairly easy to control. You can bring it down with weight loss, exercise, medicines, relaxation, and not smoking. Some people are also asked to eat less salt. Salt can cause the body to hold fluid, which makes the heart pump harder and blood pressure go up.

### **Overweight (obesity)**

Weight control is important for anyone with diabetes. Your body uses insulin best when you are at or closer to a weight that's right for you. And with better use of insulin, blood sugar comes down.

Meal planning plus exercise helps you control weight. As you start to balance what you eat with how active you are, you will have a weight change. If you eat less than your body needs for activities, you will lose weight. If you eat more than your body needs, you will gain weight.

Ask your doctor to help you set a good weight goal. If you lose weight slowly (no more than 1–2 pounds a week) you are more likely to keep it off. If you have trouble losing weight, there are resources (such as counselors, dietitians and support groups) that can help.

### *Tips to remember:*

1. Know and be aware of complications of diabetes
2. Ask your nurse and/or doctor for the signs and symptoms of impending complications for kidney or bladder disorders, strokes, amputation of extremities, eye complications, heart disorders, diabetic neuropathy

# 11. Word Search

U	V	X	K	S	E	H	N	T	H	E	M	I	S	S	K	R	I
N	K	A	C	R	U	O	L	W	Y	I	P	N	J	H	I	D	N
A	C	A	R	B	S	T	S	D	P	I	E	S	E	O	N	I	T
S	S	I	C	K	D	A	Y	S	E	R	N	U	X	R	S	A	E
C	A	B	F	O	O	T	C	A	R	E	W	L	E	T	Y	B	R
E	O	N	E	U	R	O	P	A	T	H	Y	I	R	A	R	E	M
N	T	H	I	R	S	T	W	B	E	C	P	N	C	C	I	T	E
T	L	G	L	U	C	O	S	E	N	V	E	P	I	T	N	E	D
I	A	I	N	S	U	L	I	N	S	D	W	U	S	I	G	S	I
A	P	D	K	M	I	I	A	K	I	Y	W	M	E	N	E	O	A
B	K	I	N	J	E	C	T	I	O	N	S	P	Y	G	S	T	T
X	G	Z	S	F	E	X	T	Q	N	V	I	S	I	O	N	Y	E

NASCENTIA  
 INSULIN  
 SYRINGES  
 SICK DAYS  
 INSULIN PUMP  
 INJECTIONS  
 FOOT CARE

EXERCISE  
 GLUCOSE  
 NEUROPATHY  
 CARBS  
 PEN  
 HYPERTENSION  
 DIABETES

SHORT ACTING  
 INTERMEDIATE  
 THIRST  
 VISION  
 PUMP

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