

# Diabetes Self-Management Program

### Material that will be covered

### Session 1:

At this visit we will go over your current plan of care and your self- knowledge of Diabetes. I will assess your basic educational needs and what will need addressed in session 2. We will cover a majority of the topics listed to the right as well as answer any questions you may have. A meter will be provided free of charge.

### Session 2:

This visit is a follow up on how your self-management skills are working for you. We will review session 1 materials, answer any questions you may have, and finish topics not already addressed.

### Phone follow-up:

I will be calling you at 1, 3,6, and 12 months to see how you are managing on your own and answer any questions you may have.

- o What is Diabetes?
- Signs and Symptoms of Hyperglycemia (High Blood Sugar)
- Signs and Symptoms of Hypoglycemia (Low Blood Sugar)
- o How to treat High and Low Blood Sugars
- o Sick-day Management
- o Monitoring Blood sugars & Meter usage
  - How to store your meter and supplies
- o Prevention, detection and treatment of chronic complications
  - Nephropathy (Kidney Disease)
  - Retinopathy (Disease of the eye)
  - Neuropathy (Nerve Damage)
  - Atherosclerosis (Hardening of the Arteries)
- Support groups available and Psychosocial needs
- o Foot Care
- o Insulin teaching (if applicable)
- o Financial Assistance with FMH and/or Drug and Supply Companies (if needed)
  - A session with the Registered Dietitian will also be scheduled to meet all your meal planning and nutritional needs.

95	

# Participant Self-Assessment of Diabetes Management

Name:
Date:
Date of Birth:// Age: Gender: U F U M
Ethnic Background: White/Caucasian Black/African American Hispanic
Native American Middle-eastern
What is your language preference: Lenglish Other
Address:
Street City ST Zip
Phone: Home ()
1. What type of diabetes do you have? ☐ Type 1 ☐ Type 2 ☐ Pre-diabetes ☐ GDM ☐ Don't Know
2. Year/Age of Diabetes Diagnoses:/
List relatives with diabetes:
3. Do you take diabetes medications?  Y (check all that apply below)  N  Diabetes pills  Insulin injections  Other  Symlin injections  Combination of pills and injections  About how often do you miss taking your medication as prescribed?
4. Do you have other health problems?   Y   N Please list other conditions:
5. Do you take other medications?
<del>y</del>
6. What is the last grade of school you have completed?
7. Are you currently employed?
continue c

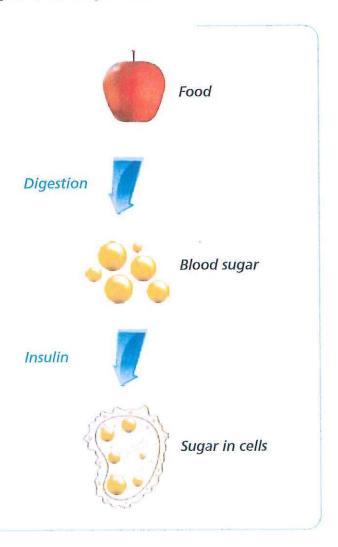
8. Marital Status: Single Married Divorced Widowed How many people live in your household?
9. How are they related to you?
10. From whom do you get support for your diabetes?  Family  Co-workers  Health care providers  Support group  No one
11. Do you have a meal plan for diabetes?  \( \begin{aligned} \Pi \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \
About how often do you use this meal plan? Never Seldom Sometimes Usually Always Do you read and use food labels? Y N Do you have any diet restrictions: Salt Fat Fluid None Other Give a sample of your meals for a typical day: Time: Breakfast: Time: Lunch: Time: Dinner: Time: Snack: Time: Snack:
12. Do you: do your own food shopping?  Y N Cook your own meals? Y N How often do you eat out?
13. Do you drink alcohol?  Y N Type:
14. Do you exercise regularly?  Y N Type:
15. Do you test check your blood sugars?  Y N  Blood sugar range: to  How often: Once a day 2 or more/day 1 or more/Week Occasionally  When: Before breakfast 2 hours after meals Before bedtime  What is your target blood sugar range?
Continued

16. In the last month, how often have you had a low blood sugar reaction:  Never Once One or more times/week
What are your symptoms?How do you treat your low blood sugar?
17. Can you tell when your blood sugar is too high?  Y N N What do you do when your sugar is high?
18. Check any of the following tests/procedures you have had in the last 12 months:  □ dilated eye exam □ urine test for protein □ dental exam □ foot exam—self □ foot exam—health care professional □ blood pressure □ weight □ cholesterol □ HgA1c □ flu shot □ pneumonia shot
19. In the last 12 months, have you: used emergency room services been admitted to a hospital Was ER visit or hospital admission diabetes related? Y N
20. Do you have any of the following:  eye problems  kidney problems  dental problems  numbness/tingling/loss of feeling in your feet  high blood pressure  high cholesterol sexual problems  depression
21. Have you had previous instruction on how to take care of your diabetes?   Y  N  How long ago:
22. In your own words, what is diabetes?
23. How do you learn best: Listening Reading Observing Doing
24. Do you have any difficulty with: hearing seeing reading speaking Explain any checked:
25. Do you have any special cultural or religious observancespractices or beliefs that influence how you care for your diabetes?    Y    N    N    Please describe
26. Do you use computers: to $\square$ email $\square$ look for health and other information
27. Please state whether you agree, are neutral, or disagree with the following statements:  I feel good about my general health: agree neutral disagree  My diabetes interferes with other aspects of my life: agree neutral disagree  My level of stress is high: agree neutral disagree  I have some control over whether I get diabetes complications or not: agree neutral disagree
continued

I struggle with making changes in my life to care for diabetes: $\square$ agree $\square$ neutral $\square$ disagree
28. How do you handle stress?
29. What concerns you most about your diabetes?
30. What is hardest for you in caring for your diabetes?
31. What are your thoughts or feelings about this issue (e.g., frustrated, angry, guilty)?
32. What are you most interested in learning from these diabetes education sessions?
33. Pregnancy and Fertility:  Are you: Pre-menopausal Menopausal Post-Menopausal N/A  Are you pregnant? Y—When are you expecting?  N—Are you planning on becoming pregnant?  Have you been pregnant before? Y—N  Do you have any children? Y—Ages: N  Are you aware of the impact of diabetes on pregnancy? Y N  Are you using birth control? Y—please specify N  *Please do not write below this line*  EDUCATOR ASSESSMENT SUMMARY:
Education Needs/Education Plan: Diabetes disease process Nutritional Management  Physical Activity Medication Use Monitoring Acute Complications  Psychosocial Adjustment Chronic Complications Behavior Change Strategies  Health Promotion  Date: Educator Signature:  Educator Signature:

Diabetes is a condition in which sugar levels in your blood are high. When you eat, some of your food is broken down into sugar (also called glucose). Sugar travels in your blood to all your body's cells. Insulin helps sugar move from your blood into your cells. Insulin is a hormone that is made by the beta cells in your pancreas.

Your cells need sugar for energy. Sugar from food makes your blood sugar levels go up. Insulin lowers your blood sugar level by helping sugar move from your blood into your cells.



# What happens when you have diabetes?

When you have diabetes:

- Your pancreas makes little or no insulin, or
- Your body prevents the insulin you do make from working right



As a result, sugar can't get into your cells. So it stays in your blood. That's why your blood sugar gets too high (also called hyperglycemia).

### Types of diabetes

Three common types of diabetes are type 1, type 2, and gestational diabetes.

In type 1 diabetes, the body makes little or no insulin. So people with type 1 diabetes must take insulin every day. Type 1 diabetes usually occurs more often in children and young adults, but it can also appear in older adults.

In type 2 diabetes, your body prevents the insulin it does make from working right. Your body may make some insulin, but not enough. Most people with diabetes—about 90% to 95%—have type 2. This kind of diabetes usually happens in people who are older or in those who are overweight. In fact, about 8 out of 10 people with type 2 diabetes are overweight.

Gestational diabetes is high blood sugar that develops during pregnancy. About 3 to 8 of every 100 pregnant women develop it. Blood sugar levels usually return to normal after the baby is born. But gestational diabetes can increase the risk of getting type 2 diabetes later in life.

### What is diabetes?

### Checking your blood sugar

Checking your blood sugar is often the best way to be sure that your diabetes is under control. Checking often will tell you:

- If your insulin or other diabetes medicine is working
- How physical activity and the foods you eat affect your blood sugar

You'll usually feel better and have more energy when your blood sugar stays at or near normal. Managing your blood sugar can also reduce your risk of developing problems from diabetes.

Many different kinds of blood sugar meters are available today. Your diabetes care team can help you choose a meter and show you how to use it.

The table on this page lists blood sugar goals for people with diabetes. You and your doctor will set the goals that are right for you. Write your goals in the last column.



Time	Goals for people with type 1 or type 2 diabetes*	Your goals
Before meals	70 to 130 mg/dL	
1 to 2 hours after the start of a meal	Less than 180 mg/dL	en er succi
A1C	Less than 7%	

\*If you have gestational diabetes, your doctor will talk with you about the blood sugar goals that are right for you. Adapted from the American Diabetes Association. Standards of medical care in

# Managing your diabetes every day

Diabetes cannot yet be cured, but it *can* be managed. You can manage it by taking good care of yourself. Your diabetes care team will help you develop a diabetes care plan that is right for you. If you have questions about your plan, be sure to let your team know!

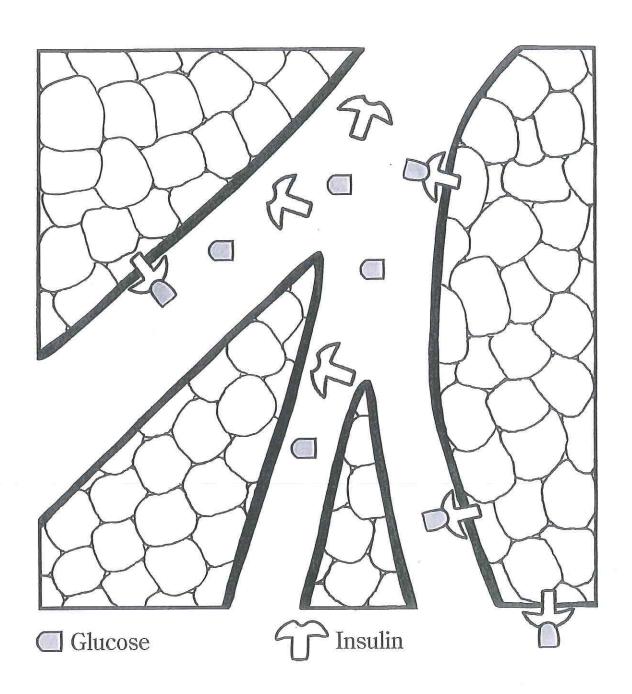
For more information, visit Cornerstones4Care.com

Novo Nordisk Inc. grants permission to reproduce this piece for nonprofit educational purposes only on condition that the piece is maintained in its original format and that the copyright notice is displayed. Novo Nordisk Inc. reserves the right to revoke this permission at any time.

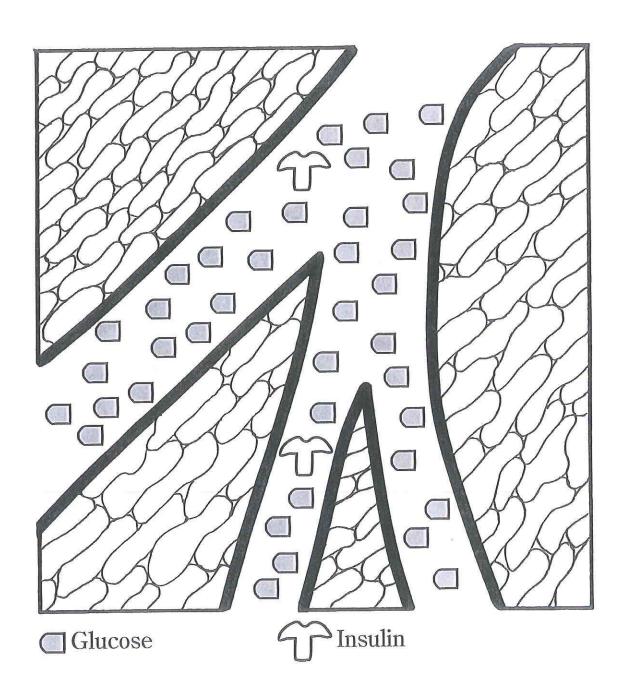
Cornerstones4Care™ is a trademark of Novo Nordisk A/S.



# Normal Glucose Metabolism



# Clucose Metabolism in Diabetes



# Low blood sugar (Hypoglycemia)

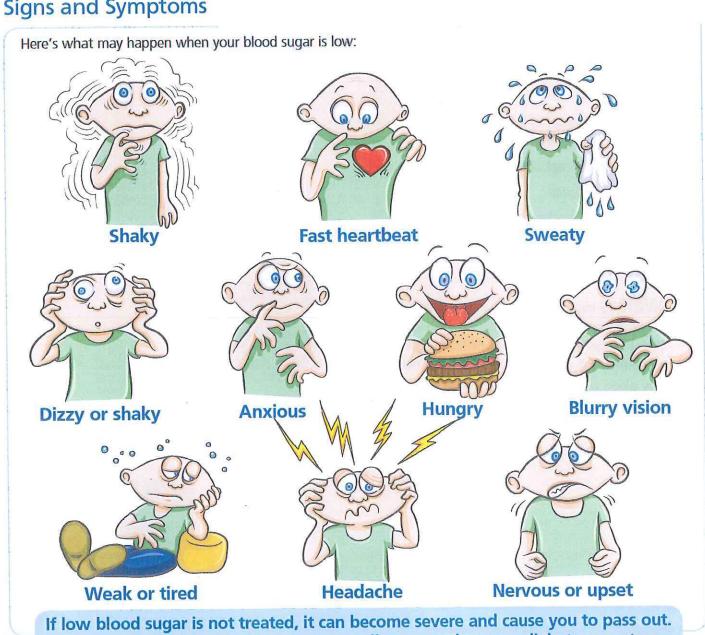
Cornerstones4Care

### Causes

You might get low blood sugar (also called hypoglycemia) if you:

- Take certain medicines and eat too few carbohydrates, or skip or delay a meal
- Take too much insulin or diabetes pills (Ask your diabetes care team if this applies to you)
- Are more active than usual

### Signs and Symptoms

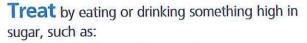


If low blood sugar is a problem for you, talk to your doctor or diabetes care team.

### Low blood sugar (Hypoglycemia)

# What to do if you think you have low blood sugar

**Check** your blood sugar right away if you have any symptoms of low blood sugar. If you think your blood sugar is low but cannot check it at that time, treat anyway.



- 4 ounces (½ cup) of regular fruit juice (like orange, apple, or grape juice)
- 4 ounces (1/2 cup) of regular soda pop (not diet)
- 3 glucose tablets
- 5 to 6 hard candies that you can chew quickly (such as mints)

**Wait** 15 minutes and then check your blood sugar again. If it is still low, eat or drink something high in sugar again. Once your blood sugar returns to normal, eat a meal or snack. This can help keep low blood sugar from coming back.





For more information, visit Cornerstones4Care.com

Novo Nordisk Inc. grants permission to reproduce this piece for nonprofit educational purposes only on condition that the piece is maintained in its original format and that the copyright notice is displayed. Novo Nordisk Inc. reserves the right to revoke this permission at any time.

Cornerstones4Care™ is a trademark of Novo Nordisk A/S.



# High blood sugar (Hyperglycemia)

Cornerstones4Care

### Causes

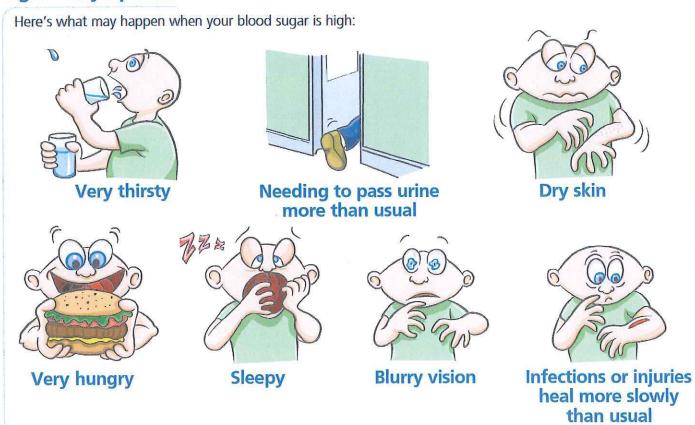
High blood sugar (also called hyperglycemia) is when there is too much sugar in your blood. Over time, it can cause serious health problems. High blood sugar can happen if you:

- Skip a dose of insulin or diabetes pills
- Eat more than usual
- Are less active than usual
- Are under stress or sick

# What to do about high blood sugar

The best way to avoid high blood sugar is to follow your diabetes care plan. Call your diabetes care team if your blood sugar has been higher than your goal for 3 days and you don't know why.

### **Signs & Symptoms**



For more information, visit Cornerstones4Care.com

Novo Nordisk Inc. grants permission to reproduce this piece for nonprofit educational purposes only on condition that the piece is maintained in its original format and that the copyright notice is displayed. Novo Nordisk Inc. reserves the right to revoke this permission at any time.

Cornerstones4Care™ is a trademark of Novo Nordisk A/S.

140172R1



# SICK DAYS FOR PEOPLE WITH TYPE 2 DIABETES



When you are sick, your blood sugar level can change a lot. A sick day plan can help you keep your blood sugar (glucose) under control when you have fever, vomiting, nausea, diarrhea, coughing or head congestion.

### A plan for MEDICINE

Always check with your health care team before you change your medicines in any way. It is usually recommended NOT to stop taking your diabetes pills or insulin when ill, but if you are taking Precose® (acarbose) and are too sick to eat, do not take Precose®.

### A plan for MONITORING

It is recommended that you test your blood sugar every 2 to 4 hours. If your blood sugar is over 250 mg/dL, check your urine for ketones.

### A plan for FOOD

If you can't eat your usual meal plan, have one serving of food containing 15 grams of carbohydrate every hour while awake. This will help keep your blood sugar from going too low.

### A plan for **LIQUIDS**

Drinking liquids is very important, especially if you are losing fluids due to fever, vomiting or diarrhea. Let your blood sugar be your guide to choosing liquids. If your blood sugar is over 240 mg/dL, drink calorie-free liquids like water, broth or bouillon, sugar-free/caffeine-free soda or decaffeinated tea that won't raise your blood sugar. If your blood sugar is low, drink calorie liquids like regular soda, milk or fruit juices.



### Call your health care team if:

- You've been sick for two days and aren't getting better
- You've been throwing up or have had diarrhea for more than 6 hours
- Your blood sugar stays over 250 mg/dL
- You have ketones in your urine
- You have chest pain, trouble breathing, breath that smells fruity or dry, cracked lips
- You aren't sure what to do

### **FOODS AND LIQUIDS**

Each of these foods and liquids contains 15 grams of carbohydrate

- 1 cup chicken soup
- 1/2 cup apple juice
- 1 cup cream soup, made with water
- 1/2 cup ginger ale (not diet)
- 1/3 cup grape juice
- 1/2 cup vanilla ice cream

- 1/2 cup orange juice
- 1/2 Coke® (not diet)
- 1 cup regular Jell-O®
- 1/2 cup cranberry juice
- 1/2 cup cooked cereal
- 1 cup Gatorade®

# PREVENTING COMPLICATIONS



Imagine buying a new car. If you warm up the engine every day, change the oil filter every 3,000 miles, and fix any mechanical problems, chances are you'll be driving that car for many years. But if you never bring it in for service or repairs, it's going to break down.

Managing diabetes is a little like taking care of a car. The best way to help prevent your body from "breaking down" is to control your blood sugar (glucose) throughout the day.

# When you have too much sugar in your blood...

- Your kidneys can become so damaged, they are unable to filter your blood. This can lead to a kidney disease called nephropathy.
- The blood vessels in the retina of your eye can weaken. This is called retinopathy, and can lead to blindness.
- Nerves can be damaged, causing numbness and tingling in your hands and feet. This nerve damage is called **neuropathy**, and can lead to amputations.
- Normal hardening of the arteries can speed up.
   This is called atherosclerosis, and can lead to heart disease and stroke.



### TAKE THESE STEPS TO CONTROL YOUR DIABETES!

Help yourself

Discuss diabetes goals with your health care team

Know your numbers

Check your blood sugar, blood cholesterol, blood pressure, and  $A_{1c}$ 

Eat well

Follow a well balanced meal plan

Stay fit

 Achieve a healthy weight for your height and age, exercise regularly as recommended by your health care team

Remember to

Take medications exactly as your health care team has recommended

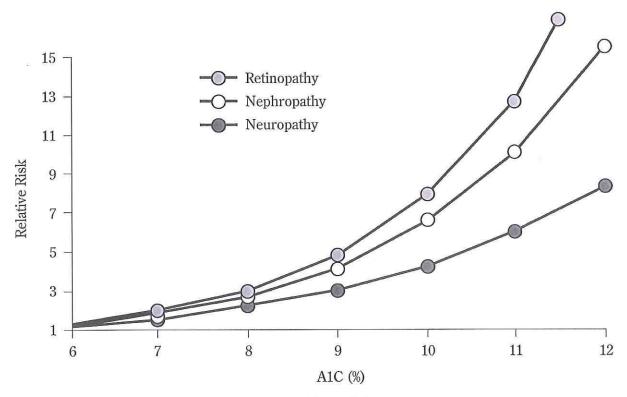
Try to relax

Stress can raise your blood sugar

Prevent complications

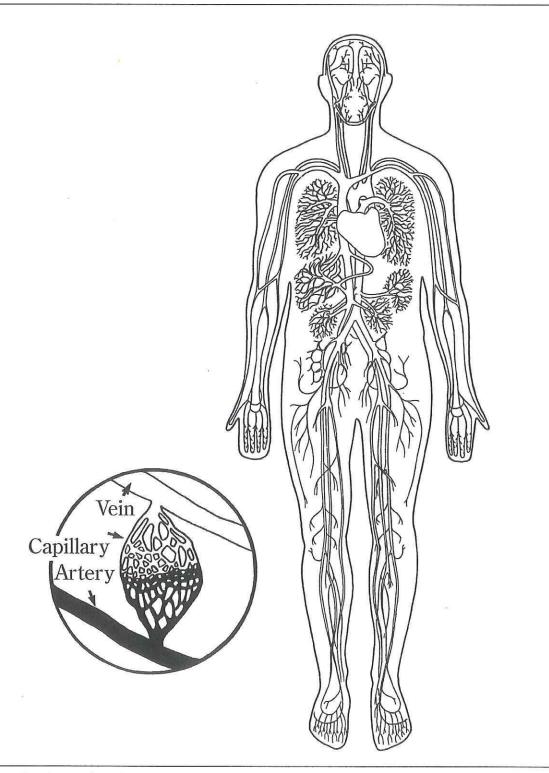
 Practice daily foot care and schedule regular eye exams, kidney function tests, and other tests recommended by your health care team

# **➡** Relationship of A1C to Risk of Complications

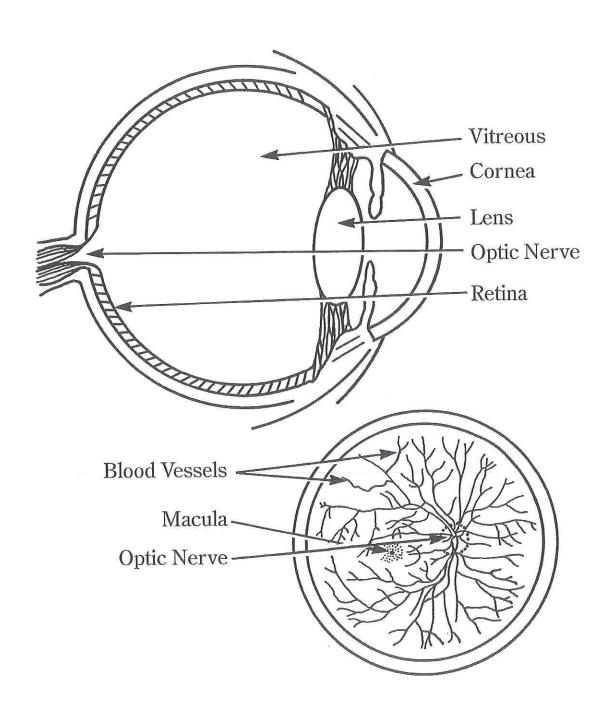


Source: Skyler. Endocrinol Metab Clin. 1996;25:243-254, with permission.

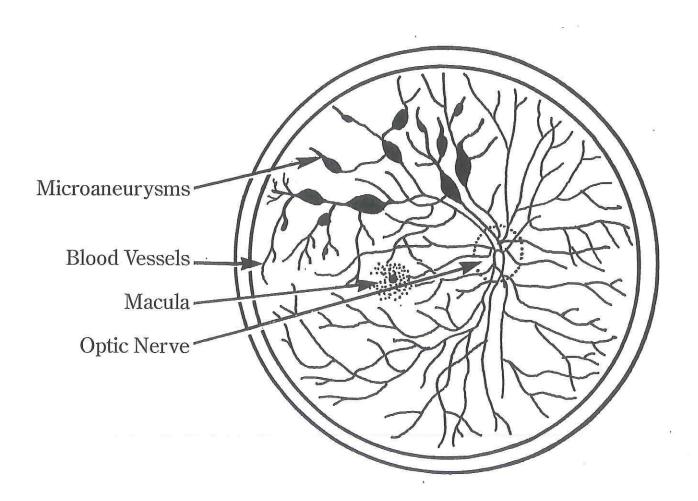
# **Circulatory System**



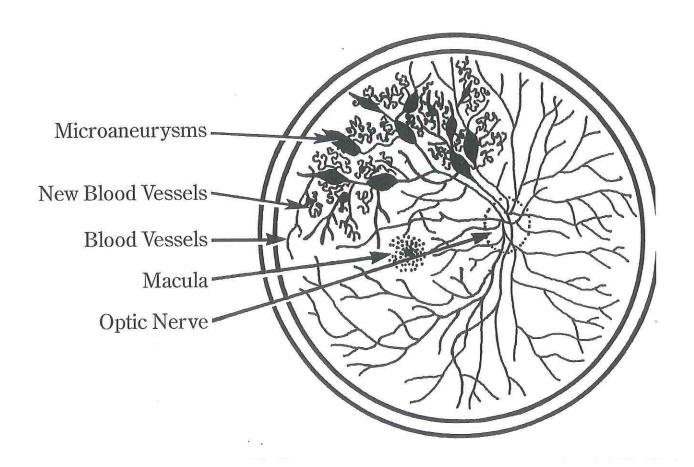
# Normal Eye



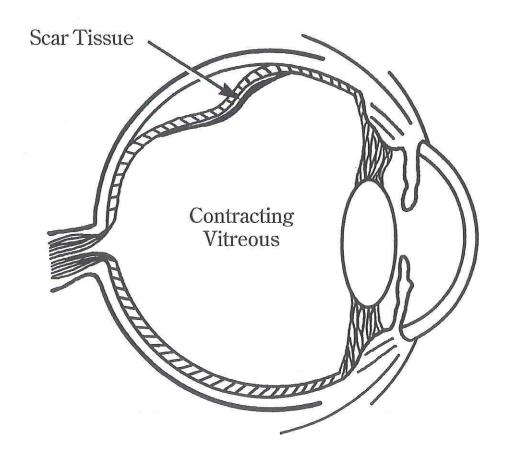
# Microaneurysms



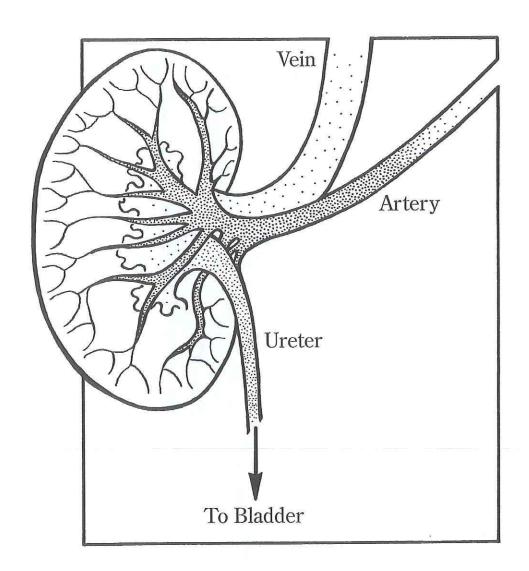
# Proliferative Retinopathy



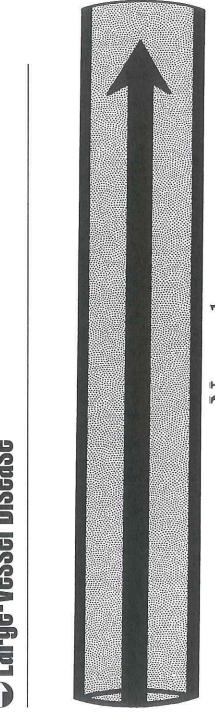
# **Retinal Detachment**

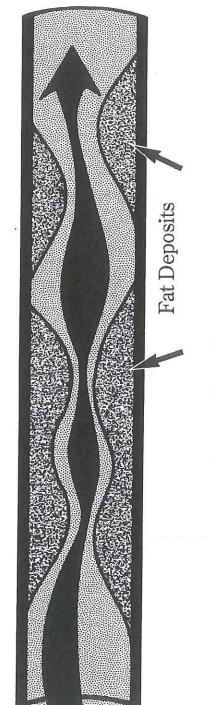


# Normal Kidney



# € Large-Vessel Disease

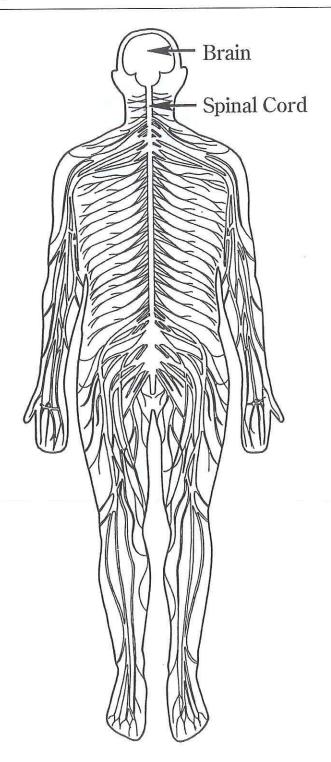




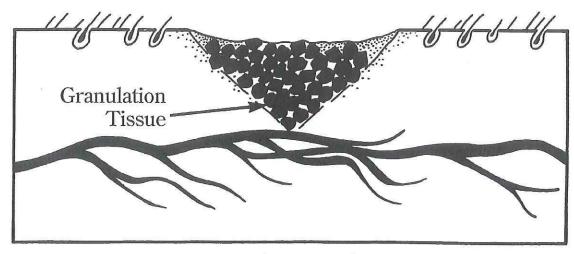
Arteriosclerosis

© 2009 American Diabetes Association

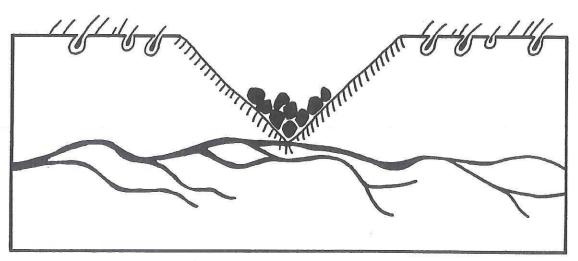
# **◆ Nervous System**



# **◆ Wound Healing**



**Normal Circulation** 



Arteriosclerosis

# Resources for Diabetes Complications

When people begin to experience the complications that can occur with diabetes, they often find that they need support and resources. There is help available. The following is a list of national organizations. Ask your health care team for more information about resources in your area.

### VISION PROBLEMS

**Services for the Blind** is an agency that offers vocational or job training to legally blind persons. They can be contacted through the county Social Services Office (listed under "county government" in the white pages). They offer medical and surgical services and vocational training, including college, on-the-job, tutorial, and adjustment teaching.

### Other service agencies

### American Council of the Blind

1155 15th Street, NW Suite 1004 Washington, DC 20005 800-424-8666 www.acb.org

### Lions Club International

300 West 22nd Street Oakbrook, IL 60523-8842 630-571-5466 www.lionsclubs.org

### National Eye Institute

Information Specialist Building 31, Room 6A32 Bethesda, MD 20892 301-496-5248 www.nei.nih.gov

### National Federation of the Blind

1800 Johnson Street Baltimore, MD 21230 410-659-9314 www.nfb.org

# Sources for tapes or reading material

### National Library Service for the Blind and Physically Handicapped

Library of Congress 1291 Taylor Street, NW Washington, DC 20011 888-NLS-READ (657-7323) www.loc.gov/nls/

### **Braille Exchange Lists**

Braille Institute 741 N. Vermont Avenue Los Angeles, CA 90029 323-663-1111 www.braillelibrary.org

### American Printing House for the Blind

1839 Frankfort Avenue Louisville, KY 40206 502-895-2405 www.aph.org

### RESOURCES FOR DIABETES COMPLICATIONS continued

### Correspondence course

Hadley School for the Blind 700 Elm Street Winnetka, IL 60093 847-446-8111 www.hadley-school.org

### Kidney disease

National Kidney Foundation 30 East 33rd Street New York, NY 10016 800-622-9010 www.kidney.org

American Association of Kidney Patients 3505 E. Frontage Road Suite 315 Tampa, FL 33607 800-749-2257 www.aakp.org

### **Kidney Directions**

http://www.kidneydirections.com Baxter health-care corporation online resource for education materials.

### Heart disease

American Heart Association 7272 Greenville Avenue Dallas, TX 75231 800-242-8721 www.americanheart.org

### **Amputations**

National Amputation Foundation 40 Church Street Malverne, NY 11565 516-887-3600 www.nationalamputation.org

### Neuropathy

The Neuropathy Association 60 East 42nd Street Suite 942 New York, NY 10165 800-247-6968 www.neuropathy.org

# Foot care for people with diabetes

Cornerstones4Care

People with diabetes have to take special care of their feet. You should have a comprehensive foot exam every year. This page shows some more things you can do to keep your feet healthy.

Wash your feet in warm water every day.



**Dry your feet well,** especially between the toes.



**Keep the skin soft** with a moisturizing lotion, but do not apply it between the toes.



**Inspect your feet every day** for cuts, sores, blisters, redness, calluses, or other problems. If you cannot see well, ask someone else to check your feet for you.



Ask your diabetes care team how you should care for your toenails.



### Foot care for people with diabetes

To avoid blisters, always wear clean, soft socks that fit you. Do not wear socks or knee-high stockings that are too tight below your knee.



**Always wear shoes that fit well.** Break them in slowly.



Never walk barefoot indoors or outdoors.



Before putting your shoes on, feel the insides for sharp edges, cracks, pebbles, nails, or anything that could hurt your feet.



For more information, visit Cornerstones4Care.com

Novo Nordisk Inc. grants permission to reproduce this piece for nonprofit educational purposes only on condition that the piece is maintained in its original format and that the copyright notice is displayed. Novo Nordisk Inc. reserves the right to revoke this permission at any time.

Cornerstones4Care™ is a trademark of Novo Nordisk A/S.



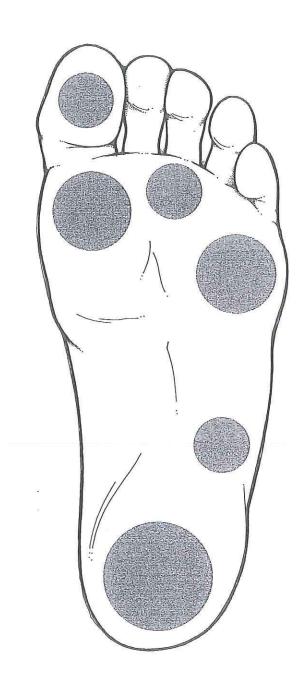
126758R3

January 2011

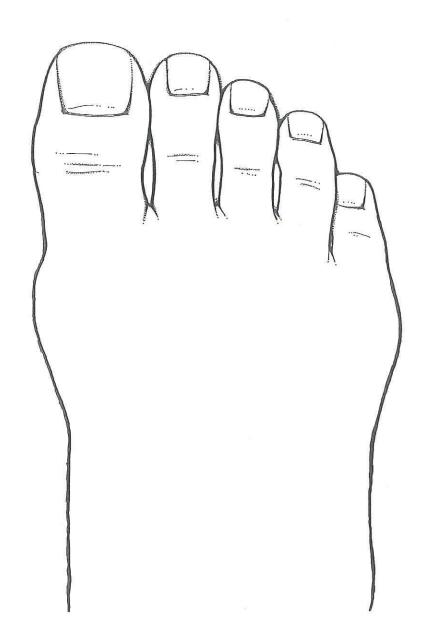
Cornerstones4Care.com



# **◆** Foot Inspection



# **Cutting Your Toenails**



## Foot Care Guidelines

### INSPECTION

- Look at your feet each day in a place with good light. Use a mirror if you can't bend over to see the bottoms of your feet. If looking at your feet is hard for you, ask a family member to help.
- Look for dry places and cracks in the skin, especially between the toes and around the heel.
- Check for ingrown toenails, corns, calluses, swelling, sores, or places that are red or pale. If corns, calluses, or other problems persist, see a foot doctor (podiatrist).

### BATHING

- Wash your feet daily in warm—not hot—water. Before you put your feet into the water, test the temperature with your wrist or elbow to prevent burning your feet.
- Do not soak your feet, because soaking will dry your skin.
- Use a mild soap and rinse well. Gently dry your feet with a soft towel, making sure to dry between the toes.
- Cracks in the skin are places where infection can enter. To soften dry feet and keep the skin from cracking, use a mild cream or lotion, except between your toes where athlete's foot often occurs.
- If your feet sweat a lot, lightly dust with foot powder. Wear socks that are mostly cotton, and change them if they become damp.

### TOENAILS

- Cut your toenails after bathing, when they are soft and easy to trim.
- Cut or file nails to follow the natural curve of your toe. Avoid cutting nails shorter than the ends of your toes. File sharp corners and rough edges of toenails with an emery board so they don't cut the toes next to them.
- ■Don't use sharp objects to poke or dig under the toenail or around the cuticle.
- Ingrown toenails or nails that are thick or tend to split when cut need to be cared for by a foot care specialist.

FOOT CARE GUIDELINES continued

### CORNS AND CALLUSES

- After washing your feet, gently rub any corns and callused areas with an emery board or pumice stone to control buildup.
- Avoid using do-it-yourself corn or callus removers. These can cause burns and may harm healthy skin around the problem area.
- Never cut your corns and calluses with a razor blade. This can lead to infections.
- Use pads on corns to reduce pressure.

### SOCKS

- Socks should fit well and be free of seams and darns that might reduce the blood supply.
- Wear socks that are a blend of natural fibers to allow skin to breathe.

### SHOES

- Wear shoes or hard-soled slippers to cover and protect your feet. Avoid going barefoot, and use common sense about wearing sandals. Thong sandals can cause blisters between your toes, and you can step out of them and injure your feet.
- At the beach, avoid walking barefoot on hot sand or shells, wear water shoes, and put sunscreen on the tops of your feet.
- Choose the shoes that are most comfortable for your activities each day.
- Before you put on your shoes, shake them out and then carefully feel inside for stones or rough spots that might hurt your feet.
- The top part of the shoe should be soft and pliable. The lining should not have ridges, wrinkles, or seams. The toe area should be round and high to fit your toes. You may need to see an orthotic specialist for inserts, for special shoes, or to have your shoes adapted to your feet.
- Shop for shoes in midafternoon when feet are larger. Buy shoes that feel good and have room for all the toes to wiggle and be in their natural place. Avoid shoes that are too tight or pinch. Try on both shoes, and if one of your feet is slightly larger than the other, buy for the bigger foot. Shoes that don't fit well can lead to sores, blisters, and calluses.

### FOOT CARE GUIDELINES continued

- If your feet are numb, you can't rely on how shoes feel to know if you have a good fit. Shop at a store where they fit your shoes or make an outline of each foot from stiff paper to insert in shoes when you are shopping.
- Break in new shoes slowly by wearing them for 1–2 hours a day at first. Change your shoes at least once during the day.

### CIRCULATION (BLOOD FLOW)

- Exercise each day.
- If you smoke, plan to quit or cut down.
- Wear wool socks and warm, waterproof shoes or boots for outside winter activities.
- Avoid heating pads, hot water bottles, or microwavable warmers. These can burn the skin. Instead, use wool socks to keep your feet warm.

### TREATMENT OF INJURIES

- Look at your feet if you stumble or bump a hard object to be sure that there is no damage.
- If your foot is hurt, don't keep walking on it—that can cause more damage.
- Treat blisters, cuts, and scratches right away. Wash with soap and water and apply a mild antiseptic. Never use strong chemicals such as boric acid, epsom salts, or any antiseptic that contains a dye. Remember, opening blisters yourself can lead to infections.
- Cover all injuries with an adhesive bandage or dry sterile dressing.
- If sores do not begin to heal within 2 days, or look worse after the first day, call your doctor.

FOOT CARE GUIDELINES continued

# Foot Care Plan

Name	Date
It is especially important for me to:	
Referral	
Podiatrist:	
Other:	
Reason for referral:	
Signature	
	urs

# Type 2 diabetes changes: How and why

Cornerstones4Care

### What happens in type 2 diabetes?

When you have type 2 diabetes:

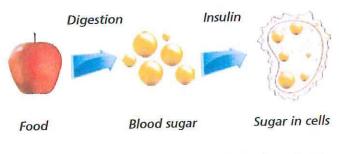
- Your pancreas makes little or no insulin, or
- Your body prevents the insulin you do make from working right

As a result, sugar can't get into your cells. So it stays in your blood. That's why your blood sugar gets too high (also called hyperglycemia).

### **Understanding type 2 diabetes**

### Insulin, sugar, and your cells

When you eat, some of your food is broken down into sugar (also called glucose). Sugar travels in your blood to all your body's cells. Insulin helps sugar move from your blood into your cells. Insulin is a hormone that is made by the beta cells in your pancreas. Another hormone, GLP-1, helps the beta cells release the right amount of insulin.



Your cells need sugar for energy. Sugar from food makes your blood sugar level go up. Insulin lowers your blood sugar level by helping sugar move from your blood into your cells.

### Why does it change over time?

Diabetes changes over time because of changes that take place in the body. In people with type 2 diabetes:

- The beta cells, which make insulin, stop working and start to die off (In fact, most people with type 2 diabetes have already lost half of their beta cell function by the time they are diagnosed)
- As the number of beta cells goes down, the pancreas makes less and less insulin

Several other things may also happen over time:

- The insulin that is made by the pancreas is not used efficiently by the cells in the body
- The beta cells need to make much more insulin than is made normally
- GLP-1 stops working normally and not enough insulin is made by the pancreas

Because of these changes, your blood sugar can stay too high. This can increase your risk for other health problems. But by following your diabetes care plan, you can do a lot to prevent these problems or slow them down.

### What can you do?

As type 2 diabetes changes over time, following your meal plan and staying active often are not enough to keep your blood sugar in check. Medicine is almost always necessary. The good news is that there are effective medicines to treat all stages of type 2 diabetes. Talk with your diabetes care team about the best treatment for you.

For more information, visit Cornerstones4Care.com

Novo Nordisk Inc. grants permission to reproduce this piece for nonprofit educational purposes only on condition that the piece is maintained in its original format and that the copyright notice is displayed. Novo Nordisk Inc. reserves the right to revoke this permission at any time.

Cornerstones4Care™ is a trademark of Novo Nordisk A/S.



143034

January 2011

Cornerstones4Care.com

