DIABETIC EYE DISEASE EDUCATION PROGRAM

Diabetes and Healthy Eyes *Toolkit*

A Module for Health Promoters

National Eye Institute

National Eye Health Education Program
NEHEP
A program of the National Institutes of Health

The National Eye Health Education Program (NEHEP) of the National Eye Institute (NEI) works to ensure that vision is a health priority by translating eye and vision research into public and professional education programs. For more information about resources and materials available to educate your community, contact—

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Dear Health Promoter:

People with diabetes are at higher risk for certain diseases and complications that can affect their health and quality of life. One complication of diabetes is diabetic eye disease, which can cause vision loss and even blindness. Diabetic eye disease refers to a group of eye problems that people with diabetes may face. Diabetic eye disease includes diabetic retinopathy, cataract, and glaucoma.

Getting a dilated eye exam at least once a year is essential to finding early signs of diabetic eye disease, even before vision is lost. Vision that is lost often cannot be restored.

To address these eye health concerns, the National Eye Health Education Program (NEHEP), along with the Midwest Latino Health Research, Training, and Policy Center at the University of Illinois at Chicago, has developed the Diabetes and Healthy Eyes module and flipchart that are part of this Toolkit. These materials were designed to help you make vision a health priority among people with diabetes in your community.

You can use this module to learn about eye health and use the flipchart to provide sight-saving information about diabetes and eye health to groups of people with diabetes, their families, and their friends. By using these materials and others available from the National Eye Institute (NEI), you can play a crucial role in educating your community about preserving their vision with early detection, timely treatment, and appropriate follow-up care of eye diseases. You can incorporate the information provided into your existing diabetes education programs or start new ones.

You can make a difference in your community. Thank you for your help and best wishes for your success.

Sincerely,

The National Eye Health Education Program
National Eye Institute, National Institutes of Health

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National Eye Health Education Program
NEHEP
A program of the National Institutes of Health

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The National Eye Health Education Program (NEHEP) of the National Eye Institute (NEI) would like to acknowledge the following organizations for contributing to the development of the module and flipchart that are part of the *Diabetes and Healthy Eyes Toolkit*:

- The staff at the Midwest Latino Health Research, Training, and Policy Center at the University of Illinois at Chicago (UIC Latino Research Center) for laying the groundwork for the module and flipchart.
- The National Alliance for Hispanic Health for conducting discussion groups with their network of community lay health workers.
- The members of the NEHEP Diabetic Eye Disease Subcommittee for reviewing materials for scientific accuracy.
- The health promoters who tested the *Diabetes and Healthy Eyes Toolkit* in the field and provided invaluable feedback.

CONTENTS

I. INTRODUCTION

What is diabetes?

Diabetes is a very serious disease in which the glucose (sugar) levels in the blood are high. Diabetes can cause problems such as blindness, heart disease, kidney failure, and amputations. Only a doctor can diagnose diabetes.

What are the types of diabetes?

There are three different types of diabetes. Below are brief descriptions of each type.

Type 1 diabetes—It is also called juvenile diabetes because it usually occurs at an early age. Since type 1 diabetes starts in childhood, complications occur at an earlier age. The pancreas does not produce insulin and, if it does, it does so in low quantities. Insulin is a hormone that works like a key opening a door so glucose can enter the cells. Without this key, the doors will not open and the glucose cannot enter the cells, resulting in too much glucose remaining in the blood.

Type 2 diabetes—It occurs when either the body does not produce enough insulin or the cells ignore the insulin produced by the body. Type 2 diabetes can be associated with older age, obesity, physical inactivity, high blood pressure, high cholesterol, and family history.

Gestational diabetes—It develops during pregnancy. The glucose levels return to normal after the baby is born. It is important to know if a woman had gestational diabetes because her risk is higher for developing type 2 diabetes in the future.

What is diabetic eye disease?

Diabetic eye disease refers to a group of eye problems that people with diabetes may face as a complication of this disease. Diabetic eye disease can cause severe vision loss or even blindness.

Diabetic eye disease includes—

- Diabetic retinopathy—damage to the blood vessels in the retina.
- Cataract—clouding of the lens of the eye.
- Glaucoma—increase in fluid pressure inside the eye that damages the optic nerve.

Why is it important to educate people about diabetic eye disease?

Diabetes damages the eyes, most often without any noticeable pain, discomfort, or changes in vision. When someone with diabetes begins to notice changes, the eye may already be damaged, and this can lead to reduced eyesight. Among the eye complications in people with diabetes, diabetic retinopathy is the leading cause of blindness in American adults. In the United States, African Americans and Hispanics/Latinos are disproportionately affected by diabetes and are at a greater risk of developing diabetic retinopathy. Vision loss due to diabetes may be prevented if glucose levels are kept under control and if diagnoses of eye complications are made early and treatment is timely.

The potential for blindness caused by diabetes may be lessened by educating people with diabetes and their family and their friends about the importance of getting a dilated eye exam at least once a year. Educational programs for people with diabetes have greatly increased the likelihood of getting their medical prescriptions filled, following their treatment directions, and monitoring their own glucose levels. For these reasons, educational programs about minimizing eye complications can make a big difference.

What can people with diabetes do to protect their vision?

Finding and treating the disease early, before it causes vision loss or blindness, is the best way to control diabetic eye disease. All people with diabetes should make sure to get a dilated eye examination at least once a year.

Diabetes and Healthy Eyes Toolkit

This Toolkit is composed of resources to help you educate your community about diabetic eye disease. The Toolkit includes this module, a flipchart, sample educational materials that you can order from the National Eye Institute, a Publications Order Form, an Evaluation Form, and a CD-ROM that contains the module, flipchart, and participant handouts. The educational module has been prepared for use by health promoters like yourself to assist you in using the accompanying flipchart to educate people with diabetes about eye diseases in a small group setting. The flipchart will help participants understand how and why diabetes damages the eye and the importance of getting a dilated eye exam at least once a year to ensure early detection and timely treatment.

II. GENERAL INFORMATION FOR THE HEALTH PROMOTER

The target audience for your presentation is people with diabetes. Your goal in giving the presentation is to increase awareness among people with diabetes of the importance of getting a dilated eye exam at least once a year to preserve their vision.

At the end of the presentation, participants with diabetes will be able to do the following:

1. Understand the importance of diabetes self-management.
2. Understand the importance of getting a dilated eye exam at least once a year to detect eye complications.
3. Demonstrate willingness to go to an eye care professional for a dilated eye exam at least once a year as part of the management of their disease.

This presentation will take approximately 1 to 1.5 hours.

The role of the health promoter

The health promoter is the most important link between the person with diabetes and healthcare providers.

The health promoter can—

- Strengthen the knowledge base about diabetes and the eyes.
- Guide and orient people with diabetes toward finding health services.
- Learn about local health resources in the community, especially those regarding eye health, and share the information with the participants.

Learning objectives for the health promoter

After reviewing the eye health module, you will be able to do the following:

1. Explain general eye complications related to diabetes.
2. Understand the importance of people with diabetes getting dilated eye exams.
3. Explain what people with diabetes can do to preserve their vision.
4. Give a presentation to individuals or small groups about eye health as it relates to diabetes.

Organization of the module

This module provides you with information about eye health and general instructions on using the educational flipchart to help you provide sight-saving information about diabetes and eye health to groups of people with diabetes, their family, and their friends. These tools also promote the importance of getting a dilated eye exam at least once a year.

There are eight topic sections in this module that reflect the eight topics in the flipchart. The purpose and materials needed are listed at the beginning of each section. There is also a text box that indicates the estimated time it should take to complete the section. There are also talking points listed under each of the topic sections that complement the information presented in the flipchart. The whole presentation should take approximately 1 to 1.5 hours to complete. In the appendices located at the end of this module, you will find all the materials you will need to give the presentation. Participant handouts are also provided in the accompanying CD-ROM.

Read the module carefully before using the flipchart to guide your presentation.

Use of the flipchart

The flipchart will be your educational guide during the presentation. It has images on the participants' side and text or talking points on the opposite (your) side. The text and the talking points should help you during your presentation.

The flipchart has many advantages: It is cost-effective; does not require complex technology such as LCD projectors, screens, and computers; and follows the sections written in the module. Other educational activities can also be integrated during the presentation to reinforce the concepts.

Below is an overview of the flipchart:

- The flipchart contains the important elements (photos and language) to help you while giving the presentation. It should be used from the start of the session.
- It is important to proceed in an orderly fashion, from the first page to the last. However, you can return to a previous page any time someone has a question or does not understand a concept.
- The flipchart should be used with small groups of 8 to 12 people in community-based, educational settings. Support groups, waiting rooms of health centers, health fairs, churches, and community centers are all appropriate settings for this educational program.

III. PREPARING TO PRESENT

Before presenting the flipchart, review the "What is diabetes?" section at the beginning of this module. The participants may ask some questions about diabetes and it is okay if you cannot answer all of them. Specific questions about the disease or medications should be directed to their healthcare providers. If you feel at any point during the session that the participants are confused about diabetes, review the appropriate section.

Similarly, before starting the session, review Appendix B: The ABCs of diabetes control (particularly the information on A1C, blood pressure, and cholesterol). Make copies of Appendix B to hand out to the participants at the beginning of the presentation.

Handouts

The handouts in the appendices will help you convey the messages to the participants. If you have the resources, you can make copies to give the participants at the end of the presentation. Participant handouts are also included in the accompanying CD-ROM. The recommended sheets to hand out to the participants to take home are—

- **Appendix A:** Diabetes risk factors—information about the common risk factors for diabetes.
- **Appendix B:** The ABCs of diabetes control—guidelines for diabetes management and control.
- **Appendix C:** Local eye health team resources—a template to prepare a list of community resources and eye care professionals. Prior to your presentation, we recommend that you investigate local health services that focus on prevention and treatment of eye diseases and vision rehabilitation, and that have experience with patients with diabetic retinopathy, cataract, and glaucoma. Use the template to make your own list of ophthalmologists, optometrists, and other eye health services that are accessible to the community.
- **Appendix D:** Talking to your doctor—questions that patients can ask their doctors.
- **Appendix E:** Action plan—a pledge that will help participants assume responsibility and establish positive behaviors in relation to their eye and overall health.

Other resources that you will find helpful in the appendices are—

- **Appendix K:** Glossary
- **Appendix L:** Eye health resource directory

Materials needed

Be sure to have the following materials ready before you present the flipchart:

- Diabetes and Healthy Eyes flipchart
- Easel or table to place the flipchart
- Pens

- Appendix A: Diabetes risk factors—a copy for each participant
- Appendix B: The ABCs of diabetes control—a copy for each participant
- Appendix C: Local eye health team resources—a copy for each participant
- Appendix D: Talking to your doctor—a copy for each participant
- Appendix E: Action plan—a copy for each participant
- Appendix F: Numbered papers—one number for each participant
- Appendix G: Attendance sheet
- Appendix H: Pretest for participants—a copy for each participant
- Appendix I: Posttest for participants—a copy for each participant
- Appendix J: Educational activity questions
- Folder or envelope—to store the pretests and posttests

Please refer to the Toolkit order form for additional handouts to give participants.

Additional information—if you are serving refreshments during or after your presentation, choose healthy snacks that are low in sodium, low in fat or fat free, and sugar free. Fruits, vegetables, low-fat cheese, low-sodium crackers, sugar-free juices, and water make great snacks.

IV. DIABETES AND HEALTHY EYES PRESENTATION

Welcome

- Have handouts ready (Appendices A, B, C, D, and E).
- Give each person a numbered paper (Appendix F) as participants arrive.
- Welcome the participants and introduce yourself. Express your willingness to share your knowledge and experiences about diabetes and its effect on the eyes.
- Ask the participants to introduce themselves by saying their name and answering an icebreaker question, such as “What is your favorite food?” or “What is your favorite movie?”
- Pass out the attendance sheet (Appendix G) and collect it once everybody has signed in.

Allow 20 minutes for this section.

Purpose of the section

- To learn more about the eye complications related to diabetes.

Materials needed

- Appendices A, B, C, D, and E.
- Numbered pieces of paper (Appendix F).
- Attendance sheet (Appendix G).
- Pretest for participants (Appendix H).
- Folder or envelope.

Objectives

Review the presentation objectives:

1. Understand the importance of diabetes self-management.
2. Understand the importance of getting a dilated eye exam at least once a year to detect eye complications.
3. Demonstrate willingness to go to an eye care professional for a dilated eye exam at least once a year as part of the management of their disease.

Overview of the presentation

Provide an overview of the presentation, which will cover the following items:

- Pretest for participants
- Discussion of educational topics
- Educational activity
- Action plan
- Posttest for participants

Pretest for participants

Pass out the pretest for participants (Appendix H).

Explain that the purpose of the pretest is to assess how much they know about diabetes and its eye-related complications.

Assure the participants that their answers are confidential and will not be shared. That is why they will write a number instead of their names.

Ask the participants to write the number you gave them when they arrived in the upper right-hand corner of the pretest sheet.

Give participants 10 minutes to fill out the pretest.

Collect the pretest sheets before beginning the presentation and place them in a folder or an envelope.

Tell the participants that they will fill out a posttest at the end of the session.

V. EDUCATIONAL TOPICS

Tell the participants that for the next 30 minutes you will be sharing with them information about diabetes and diabetic eye disease, such as—

- Risk factors
- Importance of a comprehensive dilated eye exam
- Types of diabetic eye disease and treatments
- Local resources

Allow 30 minutes for this section.

Purpose of the section

- To talk about the eye diseases related to diabetes and their treatment.

Materials needed

- Diabetes and Healthy Eyes flipchart.
- Easel or table to place the flipchart.
- Appendices A and B.

Topic 1: Risk factors for developing diabetes

Start the session by asking the participants to name the risk factors for developing diabetes. Acknowledge each response.

Once the participants have given their responses, open the flipchart to page 1 and show the images of the risk factors.

The talking points listed below contain the information on the flipchart. Refer to this information during your presentation.

Talking points: Risk factors for developing diabetes

- A risk factor is a condition (e.g., obesity) or any activity (e.g., eating in excess) that can adversely affect one's health or that can increase the possibility of developing a disease.
- Some risk factors can be changed. These are called modifiable risk factors.
- There are several major risk factors for developing diabetes. These risk factors include—

  Family history

  You are at greater risk for developing diabetes if any member of your immediate family has diabetes. This includes your father, mother, grandparents, brothers, sisters, and first cousins.

  High blood pressure

  Blood pressure higher than 140/90 mm/Hg is a risk factor for diabetes. For people with diabetes, blood pressure should be lower than 130/80 mm/Hg.

Talking points: Risk factors for developing diabetes (continued)

Obesity

Obesity is a strong risk factor for diabetes. Most often, obesity is due to overeating and lack of exercise. Regular exercise, such as walking at least 30 minutes five times per week, is strongly recommended. Following a healthy diet is also important for avoiding obesity.

High cholesterol and high triglycerides

High cholesterol and high triglyceride levels are risk factors for diabetes. Blood tests are available to test for high cholesterol and high triglycerides.

Gestational diabetes

If a woman develops gestational diabetes during pregnancy, she is at a higher risk for developing type 2 diabetes later in life.

Ask the participants to identify the risk factors they can affect or influence. Once they have given their responses, mention the modifiable diabetes risk factors. They are—

- High blood pressure
- Obesity
- High cholesterol and high triglycerides

Hand out Appendices A and B, which contain additional information about risk factors and the ABCs of diabetes control.

Restate key lessons from this section

- The risk factors for diabetes are family background (family history of diabetes), high blood pressure, obesity, high cholesterol and high triglyceride levels, and gestational diabetes.

Hint

The flipchart will be your educational guide during the presentation. It has images on the participants' side and text or talking points on the opposite (your) side. The text and the talking points on these pages will also help you during your presentation.

Topic 2: Diabetes and eye complications

Ask the participants to identify the eye complications of diabetes. Acknowledge each response. Once participants have given their responses, turn the flipchart (page 2) and tell the participants that the major eye complications of diabetes are diabetic eye disease (diabetic retinopathy, cataract, and glaucoma), low vision, and blindness.

Define low vision: Low vision means that even with regular glasses, contact lenses, medicine, or surgery, people find everyday tasks difficult to do. Reading the mail, shopping, cooking, watching TV, and writing can all seem challenging.

Talking points: Diabetes and eye complications

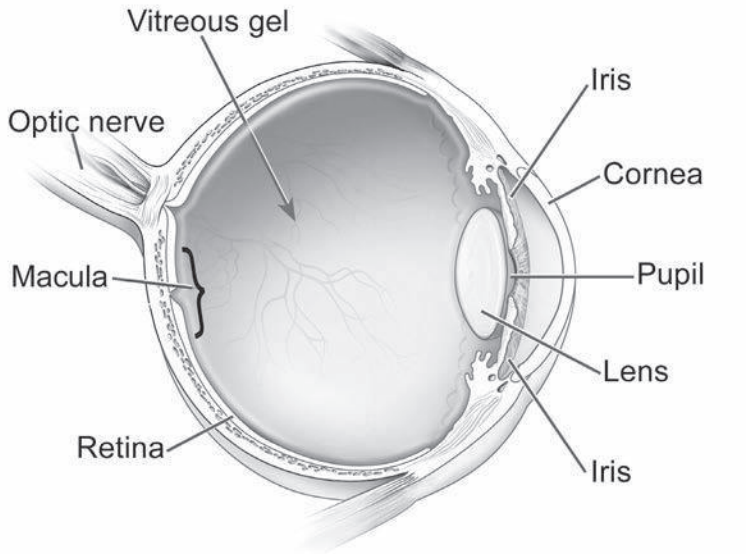
- Diabetes occurs when the body cannot or does not control high levels of glucose.
- Diabetes can cause problems such as heart disease, kidney failure, and amputations.
- Diabetes can cause diabetic eye disease, which can lead to vision loss or blindness.
- Diabetic eye disease includes—
  - Diabetic retinopathy
  - Cataract
  - Glaucoma
- Diabetic eye disease can cause permanent vision loss or low vision. Low vision means that even with regular glasses, contact lenses, medicine, or surgery, people find everyday tasks difficult to do. Reading the mail, shopping, cooking, watching TV, and writing can all seem challenging.
- A person with diabetes is much more likely to become blind than a person without diabetes.
- The risk of blindness may be lessened. Later on, we will learn how to reduce the risk of blindness.

Restate key lessons from this section

- A person with diabetes may develop many eye complications, but the most common are diabetic retinopathy, cataract, and glaucoma.
- A person with diabetes is more likely to become blind than a person without diabetes. However, the risk of blindness may be lessened.

Topic 3: Anatomy of the eye and its function

Turn the flipchart (page 3) to show participants the illustration of the anatomy of the eye. Tell participants that, to understand eye problems, it helps to know the different parts that make up the eye and the functions of these parts.



Hint

Point to the illustration in the flipchart to identify the main parts of the eye.

Talking points: Anatomy of the eye and its function

Here is a description of some of the main parts of the eye:

Cornea
The cornea is the clear outer part of the eye's focusing system located at the front of the eye.

Iris
The iris is the colored part of the eye that regulates the amount of light entering the eye.

Lens
The lens is a clear part of the eye behind the iris that helps to focus light, or an image, on the retina.

Macula
The macula is the small sensitive area of the retina that gives central vision. It is located in the center of the retina.

Optic nerve
The optic nerve is the largest sensory nerve of the eye. It carries impulses for sight from the retina to the brain.

Pupil
The pupil is the opening at the center of the iris. The iris adjusts the size of the pupil and controls the amount of light that can enter the eye.

Retina
The retina is the light-sensitive tissue at the back of the eye. The retina converts light into electrical impulses that are sent to the brain through the optic nerve.

Vitreous gel
The vitreous gel is a transparent, colorless mass that fills the rear two-thirds of the eyeball, between the lens and the retina.

Restate the key lesson from this section

- The different parts of the eye are the cornea, iris, lens, macula, optic nerve, pupil, retina, and vitreous gel.

Topic 4: The dilated eye exam—How can you look inside the eye?

Ask the participants to raise their hands if they have had a dilated eye exam.

Use the flipchart (page 4) to explain what a comprehensive dilated eye exam is.

Show the photos in the flipchart for a better idea of the two steps involved during the dilated eye exam.

Before moving to the next topic, stress the importance of the dilated eye exam for people with diabetes.

Talking points: Dilated eye exam

- A comprehensive eye exam measures vision, checks for refractive errors (such as nearsightedness, farsightedness, or astigmatism), and includes dilating the pupils to detect eye disease.
- A dilated eye exam allows an eye care professional (ophthalmologist or optometrist) to see more of the inside of your eyes to check for signs of disease. Early detection and timely treatment can reduce the risk of blindness.

A person with diabetes should remember the following:

- Some eye diseases do not have symptoms. Do not wait to visit an eye care professional.
- At least once a year you should see an eye care professional.
- The dilated eye exam is short, simple, and painless.
- An eye care professional who has experience examining the eye and the retina should perform this exam.
    - The eye care professional will put two eye drops in each eye to open, or dilate, the pupil.
    - Then the eye care professional will examine the different parts of the eye, especially the retina.
- Only an eye care professional can tell what is happening inside the eye.
- During the dilated eye exam, the eye care professional can find damage to the lens, cornea, retina, and/or other parts of the eye.

Restate key lessons from this section

- A person with diabetes should have a dilated eye exam at least once a year.
- Early detection and timely treatment can help reduce the risk of blindness.
- During the dilated eye exam, the eye care professional can see the inside of the eye and check for signs of eye disease.

Topic 5: Diabetic retinopathy

Turn the flipchart (page 5) to show the participants the illustrations of the inside of the eye and the diabetic retinopathy simulation.

Explain to the participants that diabetic retinopathy is a very serious complication of diabetes that can take several forms. One form is retinal swelling, or macular edema. Macular edema occurs when the small blood vessels in the eye are damaged, which allows fluids to enter the retina, resulting in swelling.

The first photo shows the inside of an eye with swollen blood vessels caused by diabetic retinopathy.

Show the participants the photos that illustrate how a person with normal vision would see and what a person with advanced diabetic retinopathy may see.

Talking points: Diabetic retinopathy

- It is an eye complication of diabetes.
- It damages the small blood vessels in the retina.
- The longer someone has diabetes, the more likely he or she will get diabetic retinopathy.
- The eyesight of a person with diabetic retinopathy can be damaged due to various causes:
  - Bleeding
  - Detachment of the retina
  - Presence of abnormal blood vessels in the retina (proliferative retinopathy)
- There are often no symptoms in the early stages of diabetic retinopathy. There is no pain, and vision may not change until the disease becomes severe.
- Vision loss may be prevented by finding and treating the disease in its early stages.
- Treatment options include injections into the eye; laser surgery, in which a strong light beam is aimed onto the retina; or removal of the vitreous gel.
- Early detection, timely treatment, and appropriate follow-up care can reduce the risk of blindness by 95 percent.

What does a person with advanced diabetic retinopathy see?

Normal vision.

COMPARE

Same scene viewed by a person with advanced diabetic retinopathy.

Restate key lessons from this section

- The longer someone has diabetes, the more likely it is that he or she will get diabetic retinopathy.
- There are often no symptoms in the early stages of diabetic retinopathy.
- There is no pain, and vision may not change until the disease becomes severe.
- Early detection, timely treatment, and appropriate follow-up care can reduce the risk of blindness by 95 percent.

Topic 6: Diabetes and cataract

Turn the flipchart (page 6) to show the photos of the eye with cataract and the cataract simulation.

Ask the participants to raise their hands if they know someone who has had cataract surgery.

Explain to the participants that cataract is a clouding of the lens in the eye that affects vision.

Show the participants the photos that illustrate how a person with normal vision would see and what a person with cataract may see.

Talking points: Diabetes and cataract

- Cataract is a clouding of the lens in the eye that affects vision.
- Symptoms that can appear to indicate cataract include the following:
  - Cloudy and blurry vision
  - Faded colors
  - Poor night vision
  - Double vision
  - Problems with bright lights, especially at night
- Diabetes increases the risk of cataract.
- Cataract can occur in one or both eyes. It cannot spread from one eye to the other.
- In earlier stages, the cataract is not yet visible; an eye exam is necessary for detection.
- Symptoms of early cataract may be improved with new eyeglasses, brighter lighting, anti-glare sunglasses, or magnifying lenses. If these measures do not help, surgery is the only effective treatment.
- Cataract surgery is usually safe and successful; the cloudy lens is replaced with a plastic lens.

What does a person with advanced cataract see?

Normal vision.

COMPARE

Same scene as viewed by a person with advanced cataract.

Restate key lessons from this section

- Symptoms that can appear to indicate cataract include the following:
  - Cloudy and blurry vision
  - Faded colors
  - Poor night vision
  - Double vision
  - Problems with bright lights, especially at night
- In earlier stages, the cataract is not yet visible; an eye exam is necessary for detection.
- Symptoms of early cataract may be improved with new eyeglasses, brighter lighting, anti-glare sunglasses, or magnifying lenses. If these measures do not help, surgery is the only effective treatment.

Topic 7: Diabetes and glaucoma

Turn the flipchart (page 7) to show the photos of the person getting an eye exam and the glaucoma simulation.

Show the participants the photos that illustrate how a person with normal vision would see and what a person with glaucoma may see.

Talking points: Diabetes and glaucoma

- Glaucoma is a group of diseases that can damage the optic nerve and result in vision loss and blindness.
- Glaucoma may be caused by an increase in eye pressure. However, in some forms of glaucoma, eye pressure is normal.
- A form of the disease called open-angle glaucoma is diagnosed most often in the following groups of people:
  - African Americans aged 40 and older
  - Everyone over age 60, especially Hispanics/Latinos
  - People with a family history of glaucoma
- People with diabetes are at an increased risk for an aggressive type of glaucoma called neovascular glaucoma. In this form, abnormal blood vessels grow in the front part of the eye.
- People may not realize they have glaucoma until the disease is advanced. In the early stages, it often has no symptoms because one eye compensates for the other.
- Vision lost to glaucoma cannot be restored. However, with early detection and treatment, vision loss may be prevented or slowed down.
- Treatment options for glaucoma include medications such as prescription eye drops or pills, or surgery.

What does a person with advanced glaucoma see?

Normal vision.

COMPARE

Same scene as viewed by a person with advanced glaucoma.

Restate key lessons from this section

- Glaucoma is a group of diseases that can damage the optic nerve and result in vision loss and blindness. It may be caused by an increase in eye pressure, but in some forms of glaucoma, eye pressure is normal.
- People may not realize they have glaucoma until the disease is advanced. In the early stages, there are no signs or symptoms because one eye compensates for the other.
- The most common type of the disease is open-angle glaucoma. This type of glaucoma is present most often in the following groups of people:
  - African Americans aged 40 and older
  - Everyone over age 60, especially Hispanics/Latinos
  - People with a family history of glaucoma
- Early detection and treatment may prevent or slow down vision loss.

Topic 8: The eye health team

Turn the flipchart to show the list of health professionals (page 8) who are part of the eye health team. Read the list of health professionals out loud. Ask the participants if anyone has had a problem finding an eye care professional. Pass out the local eye health team resources you developed using the template in Appendix C.

You will find a series of questions that patients can ask their doctors in Appendix D. Explain to the participants that these are questions they should ask eye care professionals.

Read the questions out loud. Discuss with the participants.

Materials needed

- Local eye health team resources (Appendix C).
- Talking to your doctor (Appendix D).

Talking points: The eye health team

- Health professionals who are part of an eye health team may include—
  - Certified diabetes educator
  - Health promoter
  - Nurse
  - Ophthalmologist
  - Optometrist
  - Pharmacist
  - Primary care provider
  - Social worker
- This team can be smaller or larger, depending on a person's need.
- All of these people can help a person with diabetes obtain optimal health, but the person with diabetes has the main responsibility by controlling his/her glucose levels and getting a dilated eye exam at least once a year.
- People with diabetes should know the following:
  - They can take action to protect their vision.
  - Everyone with diabetes should visit an eye care professional at least once a year.
  - An annual visit to an eye care professional can help to prevent blindness.
  - When they talk with their primary care provider, they can ask for ways to control their glucose levels, blood pressure, and cholesterol.

Restate key lessons from this section

- The eye health team can be small or large, depending on a patient's needs.
- All eye health team members can help a person with diabetes obtain optimal health, but the person with diabetes has the main responsibility by controlling his/her glucose levels and getting a dilated eye exam at least once a year.
- When people with diabetes contact their local healthcare providers they should be sure to ask all the questions needed to obtain optimal health.

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VI. EDUCATIONAL ACTIVITY

Overview

The following educational activity can be used to help reinforce the topics discussed in the flipchart. This activity also provides an opportunity to clarify any questions that the participants may have.

At the end of the educational activity, participants will be able to do the following:

1. Name the eye diseases related to diabetes.
2. Describe the eye exam recommended for people with diabetes and know how often to get the exam.
3. Demonstrate willingness to go to an eye care professional for a dilated eye exam at least once a year as part of their self-management activities.

Allow 15 minutes for this section.

Purpose of the section

- To reinforce the messages presented.

Materials needed

- Eight pieces of paper with the questions about eye diseases (Appendix J).

Materials needed

Be sure to have the following materials ready before starting the activity:

- Eight pieces of paper, each with one of the following questions (Appendix J)—
  - □ What is diabetic eye disease?
  - □ I have diabetes. Can I develop glaucoma?
  - □ I have diabetes. Can I develop cataract?
  - □ I have just been diagnosed with diabetes, but I do not have any vision problems. What should I do?
  - □ I have diabetes, but I do not have any vision problems. Why should I get an eye exam?
  - □ What kind of eye exam should I get and how often should I get it?
  - □ The doctor says I have diabetic retinopathy. What can I do?
  - □ Who is on an eye health team?

Recommendation

Practice the activity at least once, with a group of colleagues or by yourself, before conducting it.

Educational activity

- Select eight participants. Hand each participant one of the preprinted sheets with questions (Appendix J).
- Call on one of the eight participants to hold up his/her question. Read the question out loud.
- Ask the remaining participants to comment on what was said during the presentation about that topic.
- Clarify any doubts or questions that arise.
- Repeat this procedure until all the participants have displayed their questions and the comments for each have been discussed.
- Make sure all questions are answered.

Hint

If your group is smaller than eight people, you can hand one preprinted sheet to each of the participants and discuss the remaining questions once you have answered all the questions that were handed out.

Talking points: Educational activity

Answers to the questions—

- **What is diabetic eye disease?**
  - Diabetic eye disease refers to a group of eye problems that people with diabetes may face as a complication of diabetes. It includes diabetic retinopathy, cataract, and glaucoma.
- **I have diabetes. Can I develop glaucoma?**
  - Yes, glaucoma is almost twice as likely to occur in people with diabetes than in those without the disease.
- **I have diabetes. Can I develop cataract?**
  - Yes, people with diabetes are twice as likely to develop cataract and to develop them at an earlier age than are those without diabetes.
- **I have just been diagnosed with diabetes, but I do not have any vision problems. What should I do?**
  - Go to an eye care professional and get a dilated eye exam. The eye care professional will determine when treatment is needed.
- **I have diabetes, but I do not have any vision problems. Why should I get an eye exam?**
  - You should get an eye exam because there are often no symptoms in the early stages of the disease, nor is there any pain. Early detection and timely treatment can help reduce the risk of blindness.

Talking points: Educational activity (continued)

- **What kind of eye exam should I get and how often should I get it?**
  - □ You should get a dilated eye exam at least once a year. Your eye care professional will determine how often you will need a dilated eye exam.
- **The doctor says I have diabetic retinopathy. What can I do?**
  - □ Follow the treatment plan prepared by your eye care professional.

  To prevent or slow the progression of diabetic retinopathy, people with diabetes should—
  - □ Control glucose levels.
  - □ Control blood pressure.
  - □ Control cholesterol levels.
- **Who is on an eye health team?**
  - □ An eye health team can be made up of a certified diabetes educator, health promoter, nurse, eye care professional (ophthalmologist or optometrist), pharmacist, primary care provider, and social worker.

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VII. CLOSING THE SESSION

The action plan—a pledge to carry out

Finish the presentation by motivating and inviting the participants to make an action plan that they design using the knowledge they gained during the session.

Pass out copies of the action plan (Appendix E).

Guide participants while they prepare their action plans.

Mention that the action plan developed by each participant will serve as a promise or pledge to accomplish certain goals.

Have participants share their pledges with the group, if they are comfortable, after they sign the action plan.

Tell participants that this pledge will help them assume responsibility and establish positive behaviors in relation to their overall health and their eye health.

Motivate the participants to follow through with what they pledged.

Encourage participants to share their commitment to have healthy eyes with their family and their friends.

Allow 15 minutes for this section.

Purpose of the section

- To finish the presentation and have participants create an action plan.

Materials needed

- Action plan (Appendix E).
- A filled-out model of a plan that will serve as an example.

Posttest for participants

Pass out the posttest for participants (Appendix I).

Ask the participants to write their number on the form.

Give the participants 10 minutes to fill out the posttest.

Collect the posttests before closing the session.

Allow 10 minutes for this section.

Materials needed

- Posttest for participants (Appendix I).
- Diabetes risk factors (Appendix A).
- The ABCs of diabetes control (Appendix B).

Closing

Ask participants for comments about the presentation.

Make this a discussion and encourage everyone to participate. Here are some sample questions:

- What is the most important thing you learned during this session?
- How can we improve future sessions?
- Did the flipchart help you learn?
- What is the most important thing you can do to keep your eyes healthy?

Don't forget to hand out any other materials, such as—

- Appendix A: Diabetes risk factors
- Appendix B: The ABCs of diabetes control

Encourage participants with access to the Internet to visit the NEI website for more information (www.nei.nih.gov/diabetes).

Thank the participants for coming.

APPENDIX A
Diabetes risk factors

Diabetes risk factors

Below you will find additional information about the common risk factors for diabetes.

Obesity

Being obese or overweight is generally due to eating too much and not getting sufficient physical exercise.

- A healthy diet and moderate exercise have been shown to be effective in preventing diabetes, even in persons with pre-diabetes or with other diabetes risk factors.
- The loss of 7 to 10 percent of a person's body weight can reduce his or her risk for developing diabetes.
- Stay active—30 minutes of physical activity on most days of the week is highly recommended.

Family history of diabetes

- Family refers to father, mother, grandparents, brothers, sisters, and first cousins with diabetes.
- A family history of diabetes is not preventable, but it does indicate which people might have a tendency toward diabetes. People with a family history of diabetes should be encouraged to follow healthy lifestyles and medical recommendations to prevent diabetes.

High blood pressure

- A blood pressure measurement exceeding 140/90 mm/Hg is often considered hypertension. Blood pressure is measured in millimeters of mercury (mm/Hg). An increase in blood pressure can increase the risk of heart complications and stroke. If the person has diabetes, this rise in blood pressure can worsen diabetes complications in the eyes and kidneys.
- It is recommended that persons with diabetes maintain blood pressure less than 130/80 mm/Hg.
- A blood pressure reading in the normal range will improve health outcomes, which is especially important for preventing complications in people with diabetes or pre-diabetes.

High cholesterol and high triglycerides

- Cholesterol and triglycerides are fats normally found in the blood. When high levels of these fats are found, there is a greater risk of heart attack or problems with blood vessels. Cholesterol is measured in milligrams per deciliter of blood (mg/dL). There are two types of cholesterol. LDL cholesterol is known as “bad cholesterol” because when it increases, it indicates a greater risk for heart and blood vessel problems. Think of the L as “lousy.”
- HDL cholesterol is known as “good cholesterol” because when it increases, it decreases the risk of these problems. Think of the H as “happy.”
- The LDL reading should be less than 100 mg/dL. The HDL reading should be greater than 40mg/dL for men and should be greater than 50mg/dL for women.
- Triglycerides, another type of fat, should not be greater than 150mg/dL.
- A diet low in animal fat, along with moderate exercise, can help to reduce cholesterol.

Gestational diabetes

- Some women develop a type of diabetes that only lasts during their pregnancy. Sometimes, this type of diabetes is not detected. Gestational diabetes can be suspected if a woman has had a baby weighing more than nine pounds (four kilograms).
- Women who have had gestational diabetes during pregnancy have a greater risk for developing type 2 diabetes at any point later in life. Because of this, it is important to know if a woman had gestational diabetes during her pregnancy.

For more information about diabetes, visit the National Diabetes Education Program website at www.ndep.nih.gov.

APPENDIX B

The ABCs of diabetes control

The ABCs of diabetes control

Use these ABCs of diabetes control as a reminder of all the important factors for good diabetes control.

A1C test—An A1C test should be given at least twice a year. A1C refers to the lab blood test for hemoglobin A1C. Hemoglobin A1C should be under 7, to indicate good control. The A1C test shows if glucose control efforts are being adequately carried out.

Blood pressure—Blood pressure must be taken during each medical visit. Indications and medical recommendations are very important, including having a blood pressure measurement and a urine test to observe the presence of glucose or the protein albumin in the urine.

Cholesterol and lipids—These lab tests should be done once a year. If cholesterol is higher than 200 mg/dL, a person has a major risk of developing cardiovascular complications. This risk may be reduced by a diet low in fat and/or with medications.

Diabetes education—Everyone needs ongoing education in nutrition, self-management, self-monitoring, and prevention of complications. People with diabetes need to know the number of calories they should consume and how to use food to prepare adequate and nutritious meals. Basic courses in nutrition and cooking are important.

Eye examinations—All people with diabetes need to have a dilated eye exam at least once a year, or more frequently if their eye care professional has diagnosed an eye complication.

Foot examinations—Feet can also be affected by diabetes. People with diabetes should take a minute to look at their feet daily and check for sores, cuts, or bruises.

Glucometer—Use a glucometer frequently. Learning how to use the glucometer is very important. Every person with diabetes should learn to use the glucometer and incorporate it into their self-management of diabetes.

Health maintenance—Moderate exercise, including walking for 30 minutes at least five times a week, is important for health maintenance. Alternative exercise programs are specially designed for people with diabetes. Also, people with diabetes are more susceptible to contracting viral or bacterial infections during an outbreak. To decrease this risk, immunizations are important. Influenza and pneumonia vaccines should be part of the regular care of a person with diabetes.

APPENDIX C

Local eye health team resources

Local eye health team resources

Local eye health team resource instructions

Complete the table on the following page before conducting the presentation. This will be a handout. Here is what you will need to do:

1. Investigate local health services that are easily accessible; focus on prevention, treatment, and vision rehabilitation; and have experience with patients with diabetic retinopathy, cataract, and glaucoma.
2. Write down the contact information for the resources you find, using the template provided on the following page.

Local eye health team resources

RESOURCE CONTACT NAME (For example, certified diabetes educators, health promoters, nurses, hospitals, clinics, ophthalmologists, optometrists, pharmacists, primary care providers, social workers)	**CONTACT INFORMATION** (Address, telephone, email, and website)

APPENDIX D

Talking to your doctor

Talking to your doctor

Here are some questions you can ask your doctor to get the discussion started:

About my disease or disorder—

- What is my diagnosis?
- What caused my condition?
- Can my condition be treated?
- How will this condition affect my vision now and in the future?
- Should I watch for any particular symptoms and notify you if they occur?
- Should I make any lifestyle changes?

About my treatment—

- What is the treatment for my condition?
- When will the treatment start, and how long will it last?
- What are the benefits of this treatment, and how successful is it?
- What are the risks and side effects associated with this treatment?
- Are there foods, drugs, or activities I should avoid while I'm on this treatment?
- If my treatment includes taking a medication, what should I do if I miss a dose?
- Are other treatments available?

About my tests—

- What kinds of tests will I have?
- What do you expect to find out from these tests?
- When will I know the results?
- Do I have to do anything special to prepare for any of the tests?
- Do these tests have any side effects or risks?
- Will I need more tests later?

Understanding your doctor’s responses is essential to good communication. Here are a few more tips:

- If you don’t understand your doctor’s responses, ask questions until you do understand.
- Your recollection of the discussion might be enhanced if you take notes while talking with your doctor—or ask a friend or family member to take notes. A tape recorder may also help.
- Your doctor can write down his or her instructions for you.
- Your doctor may have printed material he or she can provide to you.
- If you still have trouble understanding your doctor’s answers, ask where you can go for more information.
- Other members of your healthcare team, such as nurses and pharmacists, can be good sources of information. Talk to them, too.

APPENDIX E

Action plan

Action plan

I want to make healthy vision a health priority. I, _____, pledge to do the following to be healthier and maintain good eye health:

- Get a dilated eye exam at least once a year.
- Keep my glucose levels under control.
- Maintain my blood pressure at 130/80 mm/Hg or less.
- Maintain my cholesterol levels within a healthy range.
- Walk at least 30 minutes a day five times a week.
- Eat more fruits and vegetables and fewer carbohydrates.
- Eat fewer foods with fat.
- Check my feet daily.
- Take all of the medication prescribed by my doctor.
- _____
- _____

I want to make healthy lifestyle choices for my family and me.

Signature_____ Date _____

As your health promoter, I am here to support you and help you maintain good eye health.

Signature_____ Date _____

Health promoter's telephone number: _____

APPENDIX F

Numbered papers

Numbered papers

The following are numbers to be handed out to each of the participants. Simply cut out the numbered squares using scissors and hand each participant a number. Participants will record this number on their pre- and posttest.

1	2	3
4	5	6
7	8	9
10	11	12
13	14	15

APPENDIX G

Attendance sheet

Attendance sheet

Date of educational session: Place:

NAME

APPENDIX H

Pretest for participants

Pretest for participants

Do not write your name. Write the number you were given in the box.

Please answer the following questions. Do not worry if you do not know all of the answers. Your responses are confidential and will not be shared with the group.

1. Glaucoma is a diabetes-related eye disease.

   A) True
   B) False
   C) I am not sure

2. The lens is found inside of the eye and when it becomes unclear, it causes cataract.

   A) True
   B) False
   C) I am not sure

3. The diabetes-related complication that can cause blindness is—

   A) Nearsightedness
   B) Astigmatism
   C) Diabetic retinopathy
   D) I am not sure

4. The most frequent eye diseases in people with diabetes are—

   A) Diabetic retinopathy, cataract, astigmatism
   B) Diabetic retinopathy, cataract, glaucoma
   C) Glaucoma, nearsightedness, astigmatism
   D) I am not sure

5. In the United States, the main cause of blindness in adults is—

   A) Nearsightedness appearing in childhood
   B) Diabetic retinopathy
   C) Presbyopia appearing after age 40
   D) I am not sure

6. A dilated eye exam allows an eye care professsional to see more of the inside of your eyes to check for signs of disease.

   A) True
   B) False
   C) I am not sure

7. Early detection and timely treatment can help reduce the risk of blindness.

   A) True
   B) False
   C) I am not sure

8. Diabetic eye disease usually has early warning signs.

   A) True
   B) False
   C) I am not sure

9. A person with diabetes who has no eye problems should schedule a dilated eye exam at least once a year.

   A) True
   B) False
   C) I am not sure

10. Often, diabetic retinopathy, cataract, and glaucoma are eye diseases or conditions without symptoms. Therefore, a dilated eye exam at least once a year is required to detect them.

    A) True
    B) False
    C) I am not sure

APPENDIX I

Posttest for participants

Posttest for participants

Do not write your name. Write the number you were given in the box.

Please answer the following questions. Do not worry if you do not know all of the answers. Your responses are confidential and will not be shared with the group.

1. Glaucoma is a diabetes-related eye disease.

   A) True
   B) False
   C) I am not sure

2. The lens is found inside of the eye and when it becomes unclear, it causes cataract.

   A) True
   B) False
   C) I am not sure

3. The diabetes-related complication that can cause blindness is—

   A) Nearsightedness
   B) Astigmatism
   C) Diabetic retinopathy
   D) I am not sure

4. The most frequent eye diseases in people with diabetes are—

   A) Diabetic retinopathy, cataract, astigmatism
   B) Diabetic retinopathy, cataract, glaucoma
   C) Glaucoma, nearsightedness, astigmatism
   D) I am not sure

5. In the United States, the main cause of blindness in adults is—

   A) Nearsightedness appearing in childhood
   B) Diabetic retinopathy
   C) Presbyopia appearing after age 40
   D) I am not sure

6. A dilated eye exam allows an eye care professsional to see more of the inside of your eyes to check for signs of disease.

   A) True
   B) False
   C) I am not sure

7. Early detection and timely treatment can help reduce the risk of blindness.

   A) True
   B) False
   C) I am not sure

8. Diabetic eye disease usually has early warning signs.

   A) True
   B) False
   C) I am not sure

9. A person with diabetes who has no eye problems should schedule a dilated eye exam at least once a year.

   A) True
   B) False
   C) I am not sure

10. Often, diabetic retinopathy, cataract, and glaucoma are eye diseases or conditions without symptoms. Therefore, a dilated eye exam at least once a year is required to detect them.

    A) True
    B) False
    C) I am not sure

What did you like the most about the session? Please explain.

How can we improve the session? Please explain.

Answer key for the pretest and posttest for participants

1. A
2. A
3. C
4. B
5. B
6. A
7. A
8. B
9. A
10. A

APPENDIX J

Educational activity questions

What is diabetic eye disease?

I have diabetes.

Can I develop glaucoma?

I have diabetes.

Can I develop cataract?

I have just been diagnosed with diabetes, but I do not have any vision problems.

What should I do?

I have diabetes, but I do not have any vision problems.

Why should I get an eye exam?

What kind of eye exam should I get and how often should I get it?

The doctor says I have diabetic retinopathy.

What can I do?

Who is on an eye health team?

APPENDIX K
Glossary

Glossary

The following is a glossary of terms that are commonly used when talking about diabetes.

Cataract

Cataract is a clouding of the lens in the eye that affects vision.

Diabetes

Diabetes is a very serious disease in which the glucose (sugar) levels in the blood are high. Diabetes can cause problems such as blindness, heart disease, kidney failure, and amputations. Only a doctor can diagnose diabetes.

Diabetic retinopathy

Diabetic retinopathy is an eye complication of diabetes and a leading cause of blindness.

Dilated eye exam

A dilated eye exam allows an eye care professional (ophthalmologist or optometrist) to see more of the inside of the eye to check for signs of disease. During a dilated eye exam, drops are placed in the eyes to widen or dilate the pupils.

Glaucoma

Glaucoma is a group of diseases that can damage the optic nerve and result in vision loss and blindness. Glaucoma occurs when the normal fluid pressure inside the eyes slowly rises. However, with early treatment, you can often protect your eyes against serious vision loss.

Glucose

Glucose is the main sugar found in the blood. It is a source of energy for the body. Insulin regulates the level of glucose in the blood. In diabetes, the glucose levels are high.

Low vision

Low vision means that even with regular glasses, contact lenses, medicine, or surgery, people find everyday tasks difficult to do. Reading the mail, shopping, cooking, watching TV, and writing can all seem challenging.

Macula

The macula is the small sensitive area of the retina that gives central vision.

Macular edema

Macular edema is an eye condition where fluid leaks into the center of the macula, the part of the eye where sharp, straight-ahead vision occurs. The fluid makes the macula swell, blurring vision.

Ophthalmologist

An ophthalmologist is a medical doctor who specializes in eye and vision care. Ophthalmologists are specially trained to provide the full spectrum of eye care, from prescribing glasses and contact lenses to performing complex and delicate eye surgery.

Optometrist

An optometrist is the primary healthcare professional for the eye. Optometrists examine, diagnose, treat, and manage diseases, injuries, and disorders of the visual system, the eye, and associated structures. They also identify related systemic conditions affecting the eye.

Pancreas

The pancreas is an organ in the body that makes insulin and enzymes for digestion. The pancreas is located behind the stomach.

APPENDIX L

Eye health resource directory

Eye health resource directory

American Academy of Ophthalmology

P.O. Box 7424
San Francisco, CA 94120–7424
415–561–8500
www.aao.org

American Association of Diabetes Educators

200 W. Madison Street, Suite 800
Chicago, IL 60606
1–800–338–3633
www.diabeteseducator.org

American Diabetes Association

1701 North Beauregard Street
Alexandria, VA 22311
1–800–DIABETES (1–800–342–2383)
www.diabetes.org

American Optometric Association

243 N. Lindbergh Boulevard
St. Louis, MO 63141
1–800–365–2219
www.aoa.org

Juvenile Diabetes Research Foundation International

26 Broadway, 14th Floor
New York, NY 10004
1–800–533–CURE (2873)
Email: info@jdrf.org
www.jdrf.org

Lighthouse Guild

111 E. 59th Street
New York, NY 10022
1–800–829–0500
212–821–9713 (TTY)
Email: info@lighthouse.org
www.lighthouse.org

National Alliance for Hispanic Health

1501 Sixteenth Street, NW
Washington, DC 20036
202–387–5000
www.hispanichealth.org

National Diabetes Education Program

One Diabetes Way
Bethesda, MD 20814–9692
1-800-860-8747
1-866-569-1162 (TTY)
www.ndep.nih.gov

National Eye Health Education Program
National Eye Institute

Building 31, Room 6A32
31 Center Drive MSC 2510
Bethesda, MD 20892–2510
301–496–5248
www.nei.nih.gov/nehep

Prevent Blindness America

211 West Wacker Drive, Suite 1700
Chicago, IL 60606
1–800–331–2020
www.preventblindness.org

SeniorSite®

American Foundation for the Blind
www.afb.org/seniorsite

www.nei.nih.gov/nehep
Pub. No. 10-7363
Revised 3/17