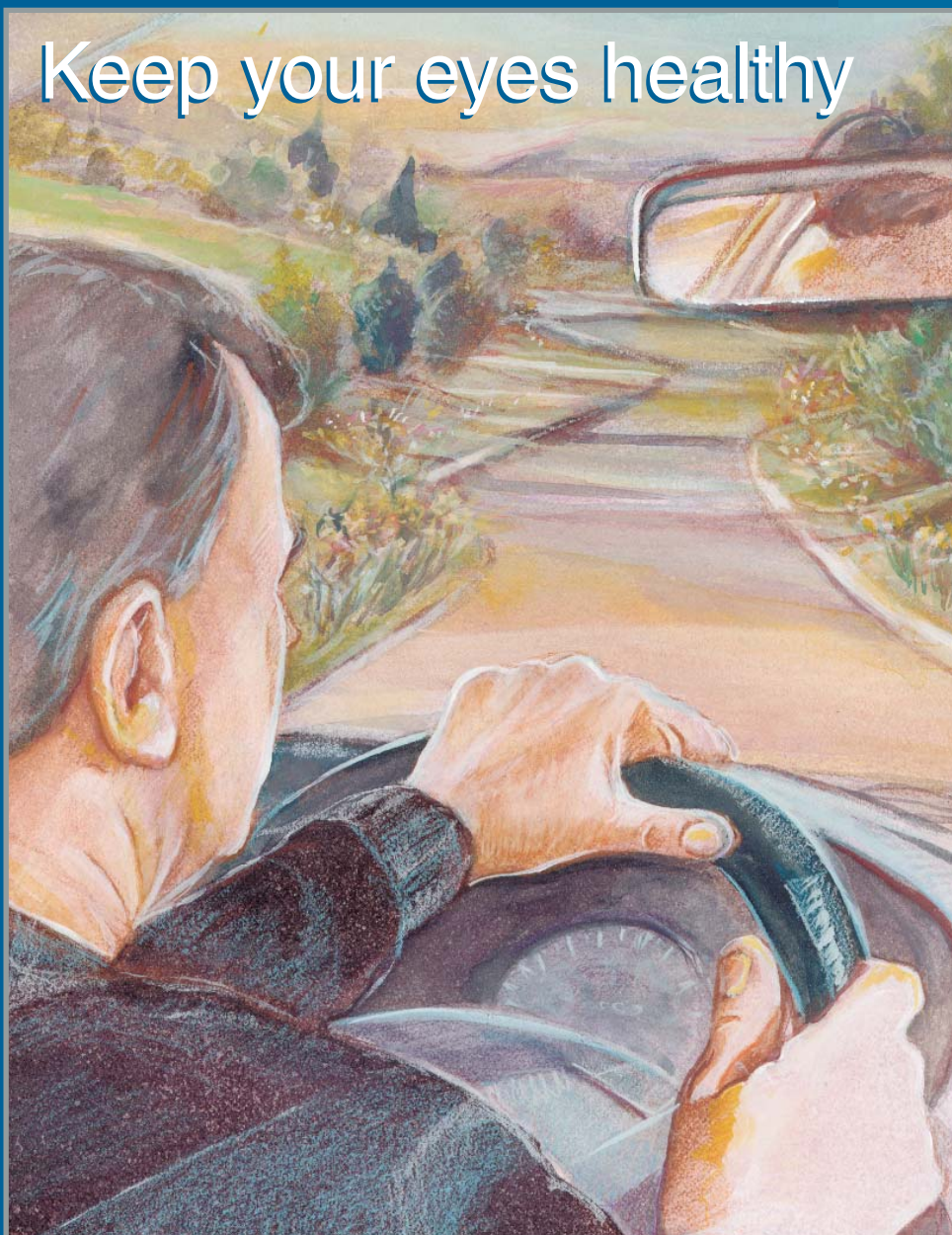


# Prevent diabetes problems

## Keep your eyes healthy



NATIONAL INSTITUTES OF HEALTH  
National Diabetes Information Clearinghouse



U.S. Department  
of Health and  
Human Services



# Prevent diabetes problems: Keep your eyes healthy



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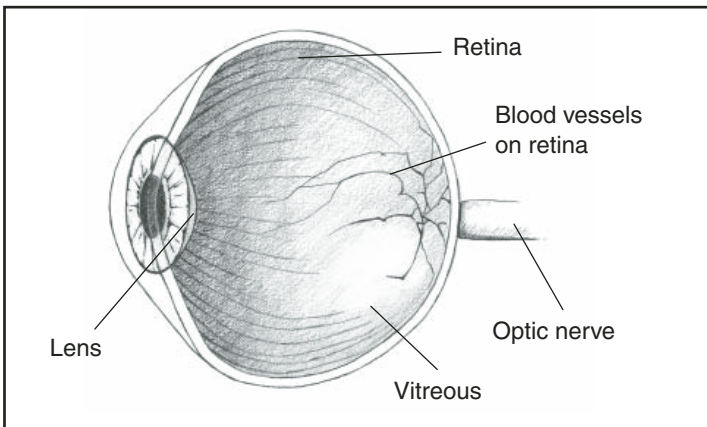
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## What are diabetes problems?

Too much glucose (sugar) in the blood for a long time can cause diabetes problems. This high blood glucose (also called blood sugar) can damage many parts of the body, such as the heart, blood vessels, eyes, and kidneys. Heart and blood vessel disease can lead to heart attacks and strokes. You can do a lot to prevent or slow down diabetes problems.

This booklet is about eye problems caused by diabetes. You will learn the things you can do each day and during each year to stay healthy and prevent diabetes problems.



High blood glucose can cause eye problems.

## What should I do each day to stay healthy with diabetes?



Follow the healthy eating plan that you and your doctor or dietitian have worked out.



Be active a total of 30 minutes most days. Ask your doctor what activities are best for you.



Take your medicines as directed.



Check your blood glucose every day. Each time you check your blood glucose, write the number in your record book.



Check your feet every day for cuts, blisters, sores, swelling, redness, or sore toenails.



Brush and floss your teeth every day.



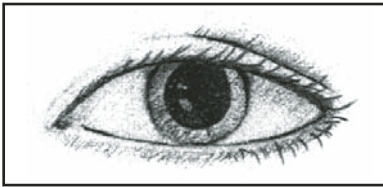
Control your blood pressure and cholesterol.



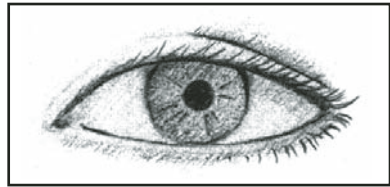
Don't smoke.

## What can I do to prevent diabetes eye problems?

- Keep your blood glucose and blood pressure as close to normal as you can.
- Have an eye care professional examine your eyes once a year. Have this exam even if your vision is OK. The eye care professional will use drops to make the black part of your eyes (pupils) bigger. This is called dilating (DY-lay-ting) your pupil, which allows the eye care professional to see the back of your eye. Finding eye problems early and getting treatment right away will help prevent more serious problems later on.



Dilated eye



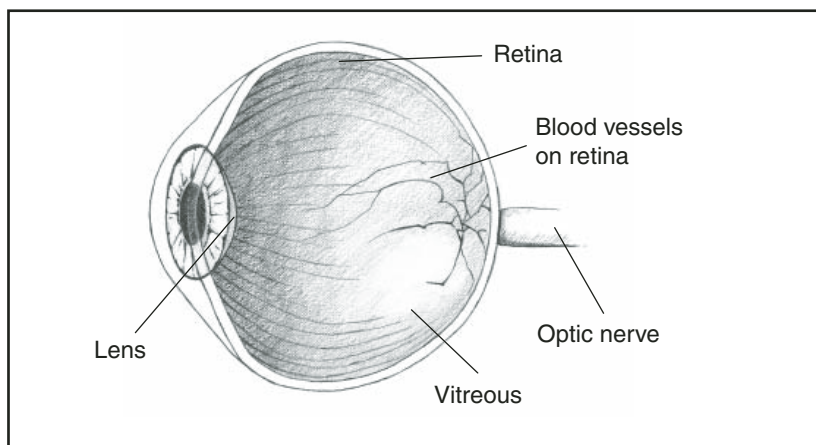
Undilated eye

- Ask your eye care professional to check for signs of cataracts and glaucoma. (See page 10 to learn more about cataracts and glaucoma.)
- If you are pregnant and have diabetes, see an eye care professional during your first 3 months.
- If you are planning to get pregnant, ask your doctor if you should have an eye exam.
- Don't smoke.

## How can diabetes hurt my eyes?

High blood glucose and high blood pressure from diabetes can hurt four parts of your eye:

1. **Retina** (REH-ti-nuh). The retina is the lining at the back of the eye. The retina's job is to sense light coming into the eye.
2. **Vitreous** (VIH-tree-us). The vitreous is a jelly-like fluid that fills the back of the eye.
3. **Lens**. The lens is at the front of the eye. It focuses light on the retina.
4. **Optic nerve**. The optic nerve is the eye's main nerve to the brain.



This is a picture of an eye from the side.



## How can diabetes hurt the retinas of my eyes?

Retina damage happens slowly. Your retinas have tiny blood vessels that are easy to damage. Having high blood glucose and high blood pressure for a long time can damage these tiny blood vessels.

First, these tiny blood vessels swell and weaken. Some blood vessels then become clogged and do not let enough blood through. At first, you might not have any loss of sight from these changes. This is why you need to have a dilated eye exam once a year even if your sight seems fine.

One of your eyes may be damaged more than the other. Or both eyes may have the same amount of damage.

Diabetic retinopathy (REH-tih-NOP-uh-thee) is the medical term for the most common diabetes eye problem.

## What happens as diabetes retina problems get worse?

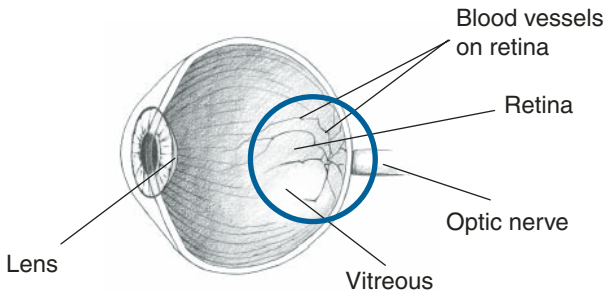
As diabetes retina problems get worse, new blood vessels grow. These new blood vessels are weak. They break easily and leak blood into the vitreous of your eye. The leaking blood keeps light from reaching the retina.

You may see floating spots or almost total darkness. Sometimes the blood will clear out by itself. But you might need surgery to remove it.

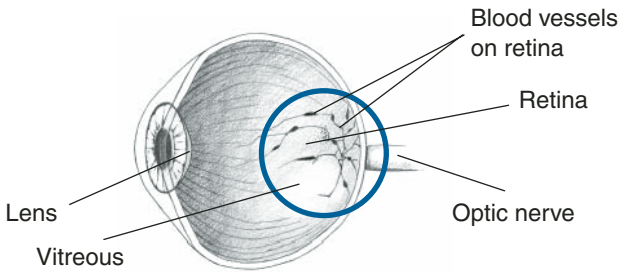
Over the years, the swollen and weak blood vessels can form scar tissue and pull the retina away from the back of the eye. If the retina becomes detached, you may see floating spots or flashing lights.

You may feel as if a curtain has been pulled over part of what you are looking at. A detached retina can cause loss of sight or blindness if you don't take care of it right away.

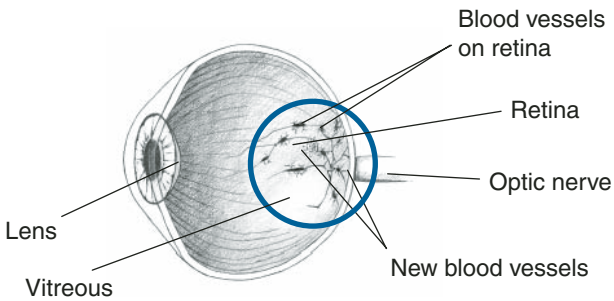
Call your eye care professional right away if you are having any vision problems or if you have had a sudden change in your vision.



This shows a retina without any damage.



This shows some diabetes damage to a retina.



This shows a lot of diabetes damage to a retina.

## What can I do about diabetes retina problems?

First, keep your blood glucose and blood pressure as close to normal as you can.

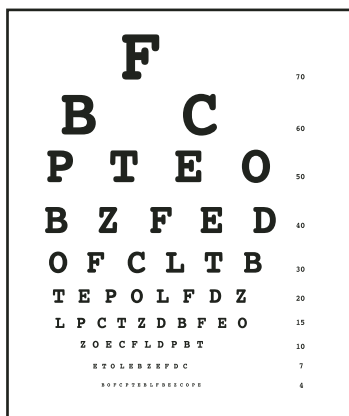
Your eye care professional may suggest laser treatment, which is when a light beam is aimed into the retina of the damaged eye. The beam closes off leaking blood vessels. It may stop blood and fluid from leaking into the vitreous. Laser treatment may slow the loss of sight.

If a lot of blood has leaked into your vitreous and your sight is poor, your eye care professional might suggest you have surgery called a vitrectomy (vih-TREK-tuh-mee). A vitrectomy removes blood and fluids from the vitreous of your eye. Then clean fluid is put back into the eye. The surgery can make your eyesight better.

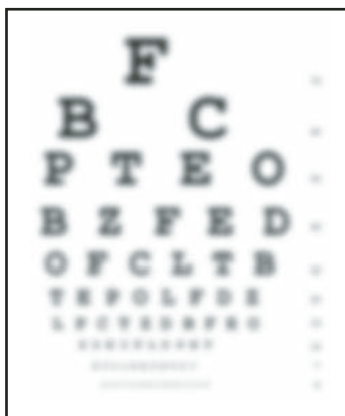
## How do I know if I have retina damage from diabetes?

You may not get any signs of diabetes retina damage or you may get one or more signs:

- blurry or double vision
- rings, flashing lights, or blank spots
- dark or floating spots
- pain or pressure in one or both of your eyes
- trouble seeing things out of the corners of your eyes



Normal



Blurry

If you have retina damage from diabetes, you may have blurry or double vision.

## What other eye problems can diabetes cause?

You can get two other eye problems—cataracts and glaucoma. People without diabetes can get these eye problems, too. But people with diabetes get them more often and at a younger age.

- A cataract (KA-ter-act) is a cloud over the lens of your eye, which is usually clear. The lens focuses light onto the retina. A cataract makes everything you look at seem cloudy. You need surgery to remove the cataract. During surgery your lens is taken out and a plastic lens, like a contact lens, is put in. The plastic lens stays in your eye all the time. Cataract surgery helps you see clearly again.
- Glaucoma (glaw-KOH-muh) starts from pressure building up in the eye. Over time, this pressure damages your eye's main nerve—the optic nerve. The damage first causes you to lose sight from the sides of your eyes. Treating glaucoma is usually simple. Your eye care professional will give you special drops to use every day to lower the pressure in your eye. Or your eye care professional may want you to have laser surgery.

## For More Information



### Eye Care Professionals

(ophthalmologists, optometrists)

To find an eye care professional near you, ask your doctor for a recommendation, contact a nearby hospital or medical school, or call a state or county association of ophthalmologists or optometrists.

Look for the American Academy of Ophthalmology on the Internet at [www.aao.org](http://www.aao.org) and click on “Find an Eye M.D.”

Look for the American Optometric Association on the Internet at [www.aoa.org](http://www.aoa.org) and click on “Dr. Locator” or call 1-800-365-2219.

**Diabetes Teachers** (nurses, dietitians, pharmacists, and other health professionals)

To find a diabetes teacher near you, call the American Association of Diabetes Educators toll-free at 1-800-TEAMUP4 (1-800-832-6874), or look on the Internet at [www.diabeteseducator.org](http://www.diabeteseducator.org) and click on “Find an Educator.”

### Dietitians

To find a dietitian near you, call the American Dietetic Association toll-free at 1-800-366-1655, or look on the Internet at [www.eatright.org](http://www.eatright.org) and click on “Find a Nutrition Professional.”

### Government

The National Eye Institute (NEI) is part of the National Institutes of Health. To learn more about eye problems, write or call NEI, 2020 Vision Place, Bethesda, MD 20892-3655, 301-496-5248; or see [www.nei.nih.gov](http://www.nei.nih.gov) on the Internet.

To get more information about taking care of diabetes, contact

**National Diabetes Information Clearinghouse**

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Bethesda, MD 20892-3560

Phone: 1-800-860-8747

Fax: 703-738-4929

Email: [ndic@info.niddk.nih.gov](mailto:ndic@info.niddk.nih.gov)

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Phone: 1-800-342-2383

Internet: [www.diabetes.org](http://www.diabetes.org)

**Juvenile Diabetes Research Foundation  
International**

120 Wall Street

New York, NY 10005-4001

Phone: 1-800-533-2873

Internet: [www.jdrf.org](http://www.jdrf.org)



## More in the Series

The “Prevent Diabetes Problems” series has seven booklets that can help you learn more about how to prevent diabetes problems.



For free single copies of these booklets, write, call, fax, or email the

National Diabetes Information Clearinghouse  
1 Information Way  
Bethesda, MD 20892-3560

Phone: 1-800-860-8747

Fax: 703-738-4929

Email: [ndic@info.niddk.nih.gov](mailto:ndic@info.niddk.nih.gov)

These booklets are also available at [www.diabetes.niddk.nih.gov](http://www.diabetes.niddk.nih.gov) on the Internet.

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Internet: [www.diabetes.niddk.nih.gov](http://www.diabetes.niddk.nih.gov)

The National Diabetes Information Clearinghouse (NDIC) is a service of the National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK). The NIDDK is part of the National Institutes of Health under the U.S. Department of Health and Human Services. Established in 1978, the Clearinghouse provides information about diabetes to people with diabetes and to their families, health care professionals, and the public. The NDIC answers inquiries, develops and distributes publications, and works closely with professional and patient organizations and Government agencies to coordinate resources about diabetes.

Publications produced by the Clearinghouse are carefully reviewed by both NIDDK scientists and outside experts.

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This booklet is also available at [www.diabetes.niddk.nih.gov](http://www.diabetes.niddk.nih.gov).



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National Institute of Diabetes and  
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