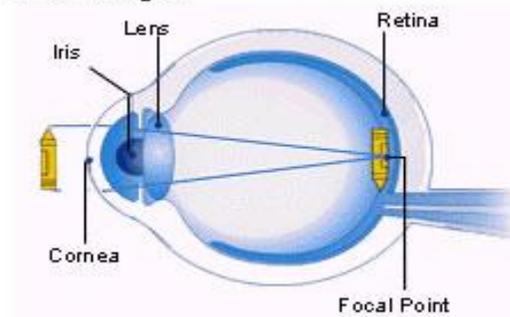


Vision in a Normal EYE

Vision in a Normal Eye:



What is Low Vision?

Low vision, or vision impairment, is a term used to describe varying degrees of vision loss caused by disease, trauma, or a congenital disorder.

Vision loss may be due to:

- Decreased visual acuities (can identify only larger-sized objects at a specific distance),
- Visual field defects (contraction of the visual area seen, or defects within the normal span of vision)

Retinopathy is a disease of the retina. The retina is the nerve layer that lines the back of your eye. It is the part of your eye that “takes pictures” and sends the images to your brain. Many people with diabetes get retinopathy. This kind of retinopathy is called diabetic retinopathy (retinal changes caused by diabetes).

Diabetic retinopathy can lead to poor vision and even blindness. Most of the time, it gets worse over many years. At first, the blood vessels in the eye get weak. This can lead to blood and other liquid leaking into the retina from the blood vessels. This is the most common kind of retinopathy.

If blood sugar levels stay high, diabetic retinopathy will keep getting worse. New blood vessels grow on the retina. This may sound good, but these new blood vessels are weak. They can break open very easily, even while you are sleeping. If they break open, blood can leak into the middle part of your eye in front of the retina and change your vision. This bleeding can also cause scar tissue to form, which can pull on the retina and cause the retina to move away from the wall of the eye (retinal detachment) Retinopathy can also cause swelling of the macula of the eye. This is called macula edema the macula is the middle of the retina, which lets you see details. When it swells, it can make your vision much worse. It can even cause legal blindness.

Age related macular degeneration

Macular degeneration makes it harder to do things that require sharp central vision, like reading, driving, and recognizing faces. It does not affect side vision, so it does not lead to complete blindness.

There are two types of macular degeneration-wet and dry. The dry form is by far the most common type. The wet form is much less common, but it happens more quickly and is more severe.

- The dry form accounts for about 9 out of 10 cases of macular degeneration. It develops slowly and causes central vision to become dimmer or more blurry over time. It usually does not cause severe vision loss unless it turns into the wet form.
- The wet form accounts for only about 1 out of 10 cases of macular degeneration. It can cause serious vision loss within months or even weeks. People who have the wet form have the dry form first.

You may have either type in just one eye, but over time you may get it in the other eye too.

Nystagmus

Nystagmus is an uncontrolled movement of the eye, usually from side to side, but sometimes the eye swing up and down or even in a circular movement. Most people with Nystagmus have low vision. Nystagmus in early childhood may be caused by a problem with the eye or visual pathway from the eye to the brain. It occurs in a wide range of childhood such as cataracts, Glaucoma, some conditions of the retina and albinism. Acquired Nystagmus which develops later in life may be symptom of another condition such as stroke.

Tips to protect your vision

Your vision will change as you age. Whether you need to deal with some loss of vision or are looking for a way to protect your vision, these ten tips can help:

- **See Your Eye Doctor**

See your eye doctor whenever you have a problem with your eyes. Your doctor can help you whenever you have a doubt on your vision. If you have diabetes, you need to have an eye exam every year. People over 40 years should at least once in every two years.

- **Eye Drops**

If you have dry eyes, eye drops can keep your eyes moist and comfortable. This is important because moist eyes are able to wash out particles, viruses and bacteria that can cause eye infections and irritations. (Use as directed by a physician)

- **Don't smoke**

Smoking increases your risk of a number of eye diseases. Avoiding smoking, and quit now if you do smoke. Smoke speeds up the damage to your eye due to the free radicals in tobacco smoke and other factors.

- **Wash Your Hands and Don't Touch**

By washing your hands and not touching your eyes frequently, you can greatly reduce your risk of eye infections. Be sure to wash your hands often during the day and keep them away from your eyes.

- **Lots of Fruits and Vegetables**

Fruits and vegetables provide essential vitamins and antioxidants that keep your eyes healthy. Try to eat a variety of colors of fruits and vegetables every day. Be sure to include some dark-colored ones.

- **Take a Multivitamin**

There are some vitamins that are essential to eye health. To be sure you are getting the right vitamins, take a daily multivitamin. This will help protect your night vision and keep your eyes healthy throughout your life.

- **Manage Your Health Conditions**

High blood pressure, diabetes and other chronic illnesses can impact the health of your eyes. By making the necessary lifestyle changes and managing your illness according to your doctor's guidance, you can avoid some of the eye-related complications of many chronic illnesses.

- **Use Contrast**

If you notice that you are having trouble seeing, try to add contrast to poorly lit places. Putting a dark piece of tape on a lightly colored step can make a big difference in judging the step accurately. Increasing the difference between light and dark colors in your home can help you avoid falls and continue to function normally.

- **Better Lighting**

Lighting can impact your ability to see. Use bright, full-spectrum lights whenever possible. Change your light bulbs and be sure that you have enough light to see clearly. If you notice vision problems, better lighting can help tremendously.

- **Sunglasses**

Sunglasses are not just a fashion accessory; they protect your eyes in three ways:

They filter out harmful UV rays

They keep dirt and other particles away from your eyes

They keep your eyes from drying out due to wind

These three benefits will help keep your eyes feeling comfortable and prevent irritation and infection.

Decreased contrast sensitivity (reduced ability to discriminate an object against a similarly-colored background),

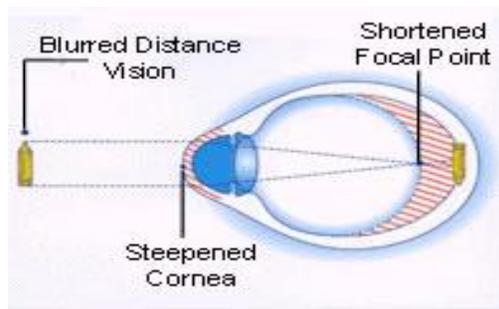
Specialists define low vision as either a visual acuity of 20/70 or worse in the better eye using a best-corrected spectacle correction, or Visual fields of 20° (twenty degrees) or less. However, a more functional definition is that low vision comprises any vision loss that adversely affects the performance of daily activities.

Low vision must not be confused with legal blindness which is defined as: visual acuity of 20/200 or worse in the better eye with correction, or Visual fields of 20° or less in the better eye.

A patient who is legally blind but has some vision would be considered "Low Vision," but many patients with "Low Vision" are not legally blind. Legal blindness of 20/200 is certainly not a complete loss of sight, which is considered as total loss of all vision (no light perception).

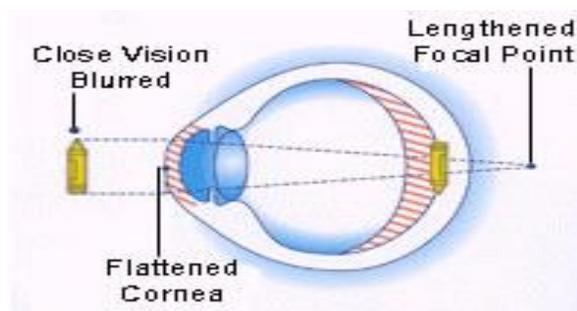
Vision Complications

Myopia



Myopia (Nearsightedness) is a common cause of blurred vision. If you are nearsighted, objects in the distance appear blurry and out of focus. You might squint or frown when trying to see distant objects clearly. Nearsightedness is usually a variation from normal, not a disease. Less often, nearsightedness happens because of another disease or condition.

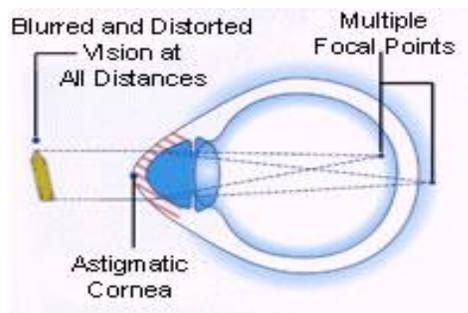
Hypermetropia



People who are farsighted can see clearly objects that are far away, but they have trouble seeing objects up close. If you are farsighted, close objects may be so blurry that you can't do tasks such as reading or sewing. This common vision problem is also called hyperopia.

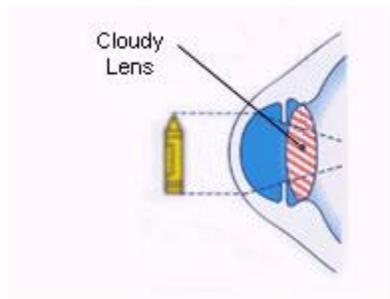
Around middle age, your eyes begin to lose the ability to focus on close objects. This vision problem is called presbyopia. It makes being farsighted a more obvious problem.

Astigmatism



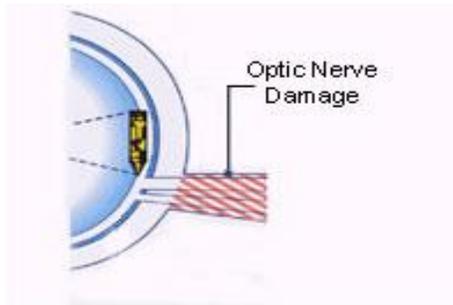
Astigmatism is a refractive error where the light is not focused on the retina due to irregular cornea or lens. This is usually occurring when the front surface of the eye, the cornea has an irregular curvature. Astigmatism often occurs with nearsightedness and farsightedness, conditions also resulting from refractive errors. Astigmatism is not a disease nor does it mean that you have "bad eyes." It simply means that you have a variation or disturbance in the shape of your cornea.

Cataracts



A loss of transparency of the lens is denoted as cataract. Cataract is a painless, cloudy area in the lens of the eye that blocks the passage of light to the retina. The retina is the nerve layer at the back of the eye. The nerve cells in the retina detect light entering the eye and send nerve signals to the brain about what the eye sees. Because cataracts block this light, the vision may gradually diminish. Aging and exposure to sunlight can cause cataracts. Changes in your eyes are often a normal part of aging, but they do not always lead to cataracts. Cataracts can also happen after an eye injury, as a result of eye disease, after you use certain medicines, or as a result of health problems such as diabetes. In rare case cataract can be conjunctival.

Glaucoma



Glaucoma is an optic neuropathy associated with the elevated IOP. The optic nerve, which carries information from the eye to the brain, is in the back of the eye. When the nerve is damaged, you can lose your vision.

At first, people with glaucoma lose side (peripheral) vision. But if the disease is not treated, vision loss may get worse. This can lead to total blindness over time.

There are different types of glaucoma.

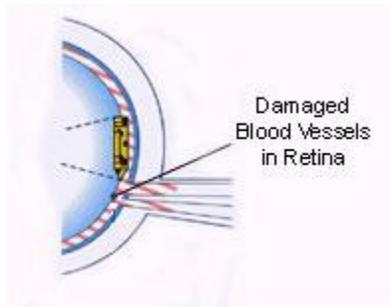
Chronic open-angle glaucoma is the most common form in the United States. In this type of glaucoma, the optic nerve is damaged bit by bit. This slowly leads to loss of eyesight. One eye may be affected more than the other. Sometimes much of your eyesight may be lost before you notice it.

Acute Closed-angle glaucoma is less common. About 10% of all glaucoma cases in the United States are closed-angle. In this type of glaucoma, the colored part of the eye (iris) and the lens block movement of fluid between the chambers of your eye. This causes pressure to build up and the iris to press on the drainage system of the eye. A related type is sudden (acute) closed-angle glaucoma. It is often an emergency. If you get this acute form, you will need medical care right away to prevent permanent damage to your eye.

Congenital glaucoma is a rare form of glaucoma that some infants get affected at birth if the mother was infected with Rubella during the pregnancy.

Finding and treating glaucoma early is important to prevent blindness. If you are at high risk for the disease, be sure to get checked by an eye specialist (ophthalmologist) even if you have no symptoms.

Diabetic retinopathy



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