

DIABETIC RETINOPATHY

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Diabetic Retinopathy

Diabetic retinopathy is an eye condition that affects the retinas of people with diabetes. It is caused by changes in the blood vessels of the eye and occurs as a result of high blood sugar (glucose) that people with diabetes have over a long period of time.

The retina is a light-sensitive nerve tissue at the back of the eye. The retina converts the light rays that enter the eye into electrical impulses that travel along the optic nerve to the brain. Too much blood glucose can destroy the blood vessels in the back of the eye, preventing the retina from receiving the proper amount of nutrients it needs to maintain vision.

Diabetic retinopathy occurs when diabetes damages the tiny blood vessels in the retina. In the early stages of the disease (nonproliferative retinopathy), these blood vessels leak fluid and distort sight. In the more advanced stage (proliferative retinopathy), fragile new blood vessels grow around the retina and in the vitreous humor (a clear substance inside the eye). If these blood vessels are not treated, they may bleed and blur vision, or may scar and detach (disconnect) the retina.

Anyone with diabetes (Type 1 or Type 2) is at risk of developing diabetic retinopathy. The factors that affect risk include:

- The type of diabetes a person has (Type 1 or 2);
- How well-controlled the blood glucose is; and,
- How long a person has had diabetes.

What are the symptoms of diabetic retinopathy?

Usually, there are no symptoms of early diabetic retinopathy, and the person's sight may not be affected until the condition is severe.

Symptoms of diabetic retinopathy include:

- The loss of central vision, for example, when reading or driving

- Loss of the ability to see color
- Blurred or distorted vision
- Small spots (floaters)

Because retinopathy develops over time, it is important to have an eye exam each year, or more often if you have more than mild retinopathy. Call your doctor right away if you have any of these symptoms.

How is diabetic retinopathy diagnosed?

An eye doctor (ophthalmologist) can detect diabetic retinopathy after conducting a thorough eye exam. The exam should include pupil dilation, in which drops are put into your eyes to widen the pupils. This allows the doctor to look for any changes in blood vessels, new blood vessel growth, swelling of the retina, and retinal detachment.

How is diabetic retinopathy treated?

Your doctor will consider your age, medical history, lifestyle, and how significant the retinal damage is when recommending the best treatment for you. In many cases, treatment is not necessary, but regular eye exams will be needed.

The most common cause of vision problems in patients with diabetes comes from swelling of the retina, which is called “macular edema.” In the recent past, this was treated with the laser. However, more recent studies have shown that injections of tiny amounts of drugs into the eye control the condition much better. There are three or more drugs that are typically used, and repeat injections are usually required.

Laser surgery is used for advanced changes and can prevent significant vision loss caused by diabetic retinopathy. A procedure called laser photocoagulation can seal or destroy growing or leaking blood vessels in the retina. Although the procedure is not painful, laser surgery may lower a person’s night vision and ability to see color.

In some people with diabetic retinopathy, the blood that leaks from blood vessels in the retina may also leak into the vitreous humor and cloud the person’s vision. A surgical procedure called a vitrectomy can be used to remove the blood that has leaked into this part of the eye.

Laser treatment or vitrectomy do not cure diabetic retinopathy, but help slow its progress. Regular appointments with an ophthalmologist are extremely important.

What happens if diabetic retinopathy is not treated?

Scar tissue that forms on the back of the retina from shrinking of the new blood vessels can cause the retina to pull away from the back of the eye. This is called a retinal detachment. Retinal detachment can cause permanent blindness if it is not treated.

Diabetic retinopathy can also cause macular edema, in which fluid from blood vessels leaks into the macula (the center part of the retina that allows detail to be seen). Macular edema can cause the macula to swell and make vision blurry.

Can diabetic retinopathy be prevented?

You can take these steps to protect your sight:

- Have your eyes checked at least once a year by an ophthalmologist.
- Attention to diabetes control with diet and medication is the best protection against loss of vision.
- Women who have diabetes and become pregnant should have a comprehensive eye exam during the first trimester and close follow-up with an ophthalmologist during pregnancy.

You can also help slow development of diabetic retinopathy by keeping your blood glucose and blood pressure in check and avoiding smoking.

When should I call the doctor?

Contact your doctor if you:

- Have black spots in your vision
- See flashes of light
- Have “holes” in your vision
- Have blurred vision

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