

## Vision loss and diabetes

### How to detect and treat vision loss from diabetic eye disease

The eyes may be windows to the soul, but for people with diabetes, looking deep into the retina can also reveal a diabetes-related eye disease.

Two of the most common types of vision loss related to diabetes are macular edema and retinopathy. Both are under the scope of diabetic eye disease, which includes all the retinal changes caused by diabetes. Diabetes can also make you more likely to have other eye conditions, including cataracts and glaucoma.

The good news: Advances in testing are catching problems before serious retinal changes occur. This is an important step since eye damage may have no symptoms at first. And if you already have diabetes-related eye disease, advances in treatment can save your sight.

### How the eye is affected

The structure of the eye is like a camera. Light passes through the transparent front lenses, as if through the lenses of a camera, until it reaches the back wall of the eye. This wall contains a very thin piece of light-sensitive tissue: the retina.

The tiny blood vessels that nourish the retina can be damaged by diabetes. The damage can cause the blood vessels to become leaky, like a water hose with holes in it. Fluid leaks out of the blood vessels and into the retinal tissue which can cause vision problems. This causes the retina to thicken, creating blurred vision. The swelling associated with diabetes in the macula, the central part of the eye responsible for staring straight ahead, called diabetic macular edema.

In another process, blood vessels damaged by high blood sugar (blood glucose) levels close, and a series of events begin. Starving retinal tissue produces growth causing new blood vessels to form on the surface of the retina. When the new blood vessels form, it's called proliferative retinopathy.

These new blood vessels are weak and can easily break and bleed. This leads to scar tissue, which can build up on the back wall of the eye and stretch the retina, eventually separating it from the back of the eye. This condition is known as retinal detachment, and it can happen suddenly or slowly over time.

meaning you can have 20/20 vision and still have diabetic retinopathy. Some of the early signs include:

- Cloudy vision
- Trouble seeing at night
- Seeing double
- Blurry vision in only one eye
- Redness or pain in your eye
- Seeing floaters or spots
- Loss of peripheral vision

This is why it's important for people with diabetes to have dilated eye exams at least once a year or more often if you have a problem.. Managing your diabetes—by staying physically active, eating healthy and taking your medicine—can also help you prevent or delay vision loss.

### **What you should expect from an eye exam**

Your ophthalmologist (eye doctor) will first check for any changes to your glasses or contact lens prescription. People with many diabetes related problems with their vision can still wear contact lenses.

The doctor will then dilate your pupils and examine the retina. The drops used may sting for a short time. About 20 to 30 minutes later, your eyes will be fully dilated. With the use of special lenses and lights, the doctor will visually examine your retina.

To detect retinopathy, the doctor looks at all the retinal tissues. For signs of macular edema, the doctor looks at the macula in the back of your eye, but this may not be enough for a diagnosis. Your doctor may perform an optical coherence tomography, which is a laser exam of the back of the eye. While the retina is very thin, the test can measure retinal thickening as small as a thousandth of a millimeter.

A fluorescein angiogram is a test that can detect diabetic retinopathy. During the test, a dye is injected into your arm. Within 45 seconds, the dye reaches the back of the eye. Just like how blood leaks from weak blood vessels, so does the dye. Special photographs help document the results.

If you have diabetes and visit your doctor for blurred vision, you can expect to have some or all of these tests. Your doctor will also check for cataracts (clouding of the lenses in the eye) and glaucoma (high pressure in the eye), which are more common in people with diabetes. Glaucoma can develop when abnormal blood vessels grow in the iris, the colored part of the eye, due to proliferative retinopathy.

### **What treatments are available**

If your diabetic retinopathy is moderate and stable, treatment may not be necessary right away. Regular dilated eye exams can track the disease's progression, and controlling your blood sugar can prevent it from getting worse. If your vision is already affected, it's important to start treatment immediately.

The treatments for macular edema and proliferative retinopathy can prevent vision loss and even restore some of your lost vision. They include:

- Anti-VEGF therapy, which involves injecting drugs into the eye to stop the leaking of the blood vessels
- Steroids to reduce retinal swelling
- Photocoagulation (laser therapy) to seal the blood vessels
- Vitrectomy, a surgery to remove scar tissue and cloudy fluid from inside the eye

### **What the future holds**

Scientists are studying better ways to find, treat and prevent vision loss in people with diabetes.

The longer you've had diabetes, the more likely you are to have retinopathy and it is a common problem. But if you keep your blood sugar levels at your target levels, you may delay or even prevent it. Often you won't have symptoms until you've developed the problem, so get regular eye exams. These new tests and treatments will help address problems early.

Learn more about [eye health and vision loss with diabetes](#).