

## Preserving Vision in Patients with Diabetes

[Jinan Saaddine] Hello, my name is Dr. Jinan Saaddine. I am a medical epidemiologist at the Centers for Disease Control and Prevention's Division of Diabetes Translation. I am here to speak to you as part of the CDC Expert Commentary Series on Medscape.

The number of U.S. residents with diabetes continues to increase, and CDC estimates as many as 1 of 3 U.S. adults could have diabetes by 2050. People with diabetes often develop eye problems, including diabetic retinopathy, cataracts, and glaucoma. In addition, people with diabetes also have sharp increases and drops in blood glucose that can change the shape of the lens inside the eye and cause blurred vision.

CDC expects a significant increase in the number of people developing these conditions because of the rise in diabetes prevalence. We estimate that the number of Americans aged 40 years and older with diabetic retinopathy will triple to 16 million by 2050, and the number with vision-threatening retinopathy will increase from 1.2 million to 3.4 million. Diabetes is the leading cause of blindness in working-age Americans.

Diabetic retinopathy, a common complication of diabetes, causes gradual damage to small blood vessels in the retina. It leads to vision loss in two ways: proliferative diabetic retinopathy, where new blood vessels grow along the retina and along the surface of the vitreous gel that fills the inside of the eye; and macular edema, when fluid leaks into the center of the macula and makes it swell. CDC estimates that 28.5% of people with diabetes aged 40 and older have diabetic retinopathy, and 4.4% of people with diabetes have advanced diabetic retinopathy that could lead to severe vision loss.

Early diagnosis and timely treatment can prevent 50%–90% of severe vision loss related to diabetes. Vision loss from diabetic retinopathy can be prevented in several ways. The first step is maintaining good control of blood glucose, blood pressure, and lipids. Early detection through screening also is important, because diabetic retinopathy has no early warning signs. Patients with diabetes should have a dilated eye exam given by an eye care provider at least once a year, or more frequently if they have the advanced stage of diabetic retinopathy.

If a problem is diagnosed, treatment by an ophthalmologist should be pursued. Depending on the diagnosed condition, laser therapy or other surgery may be options. Focal laser therapy, which is used to treat macular edema, slows leakage and reduces the amount of fluid in the retina. Scattered laser therapy shrinks abnormal blood vessels, but may cause a loss of some peripheral vision. If bleeding is severe, patients might need vitrectomy.

Additional treatment options include medications such as ranibizumab or bevacizumab. These medications are injected in the eye several times a year, for life.

When you are checking patients with diabetes, ask whether they have had a dilated eye exam in the last year, and explain the importance of getting their eyes checked if they haven't done so. Risk factors for diabetic retinopathy include high hemoglobin A1c levels, long duration of diabetes, and no recent eye exam. If your patient has these risk factors, make sure you recommend a dilated eye exam as soon as possible and follow up with patient compliance. By taking these steps, you can help your patients preserve their vision. For more information, please visit [www.cdc.gov/visionhealth](http://www.cdc.gov/visionhealth). Thank you.