



Diabetes + Your Eyes

Vision Health in Youth

Why is this important?

It is important for youth with diabetes and their families to know that vision problems are common with diabetes. Vision problems may be avoided or delayed by keeping blood glucose (sugar) levels in range and getting dilated eye exams each year or as recommended by your eye doctor (an optometrist or ophthalmologist).^{2,3}

Vision problems due to diabetes-related eye disease may develop after living with diabetes for several years but may occur earlier if blood glucose is not kept in range. These vision problems can include trouble reading, seeing faces across the room, seeing at night, and even blindness.

Youth with type 1 and type 2 diabetes are recommended to have their first dilated eye exam:

Type 1: 3-5 years after diagnosis^{2,3}

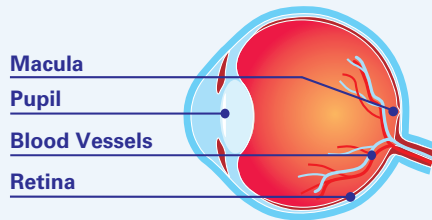
Type 2: at diagnosis or soon after²

Then every year or as recommended by the eye doctor.

1 in 2 youth with diabetes



may develop diabetes-related retinopathy 12+ years after diagnosis.¹



What is diabetes-related eye disease?

A group of eye conditions that can affect people with diabetes, including:

Diabetes-related retinopathy occurs when small blood vessels in the eye are damaged by high blood glucose levels over time. These blood vessels can leak or bleed in the retina. The retina is in the back of the eye. It acts like the film in a camera to help us see.

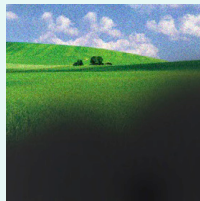
Diabetes-related macular edema is swelling that may occur with diabetes-related retinopathy. This condition may occur when the small blood vessels in the center of the retina, called the macula, start to leak. This may cause the retina to swell and may lead to vision loss.

What are the symptoms of diabetes-related retinopathy?

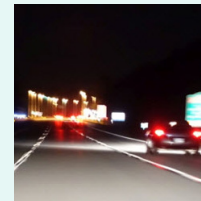
It is important to remember that a child in your care with diabetes may **not** experience vision symptoms in the early stages of eye disease. This is why it is important to see an eye doctor regularly. Here are some symptoms that may occur with diabetes-related retinopathy:



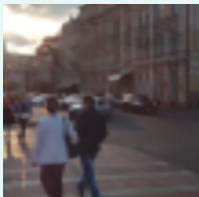
Sudden increase in eye floaters (spots and/or dark wavy lines)



Sudden missing or dark areas in your vision



Difficulty seeing at night



Blurred vision



Flashes of lights



Colors appear faded

Contact your eye doctor right away if you or a child in your care have any of these symptoms. Early detection and treatment may reduce the risk of vision problems.

What is a dilated eye exam?

A dilated eye exam uses eye drops to dilate (widen) the opening in the front of the eye called the pupil. Dilation allows the eye doctor to see into the back of the eye where the retina is located. This is an important step during an eye exam for youth living with diabetes. The eye drops do not cause pain but may sting for a minute or two after being put in the eye. The side effects of the eye drops may include blurry vision, especially up close, and sensitivity to light. The side effects generally last a few hours. If getting a dilated eye exam is not possible, an eye screening using a special camera that takes pictures of the retina without dilation can be done instead.



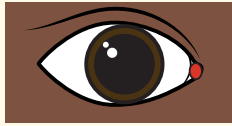
Pregnancy: Type 1 and type 2 diabetes may increase the risk of vision problems during pregnancy. For young adults living with diabetes who plan to become pregnant, a dilated eye exam is recommended before pregnancy and then early in the first trimester. The need for additional follow-up visits may be determined by the eye doctor.

References:

1. Jensen, E. T., Rigdon, J., Rezaei, K. A., Saaddine, J., Lundeen, E. A., Dabelea, D., ... & Lawrence, J. M. (2023). Prevalence, Progression, and Modifiable Risk Factors for Diabetic Retinopathy in Youth and Young Adults With Youth-Onset Type 1 and Type 2 Diabetes: The SEARCH for Diabetes in Youth Study. *Diabetes Care*, 46(6), 1252-1260. <https://doi.org/10.2337/dc22-2503>
2. Flaxel, C. J., Adelman, R. A., Bailey, S. T., Fawzi, A., Lim, J. I., Vemulakonda, G. A., & Ying, G. S. (2020). Diabetic Retinopathy Preferred Practice Pattern®. *Ophthalmology*, 127(1), P66-P145. <https://doi.org/10.1016/j.ophtha.2019.09.025>
3. American Diabetes Association Professional Practice Committee; 14. Children and Adolescents: *Standards of Medical Care in Diabetes—2022*. *Diabetes Care* 1 January 2022; 45 (Supplement_1): S208–S231. <https://doi.org/10.2337/dc22-S014>

5 ways to help prevent vision loss from diabetes

While there is no cure for diabetes, it is possible to help prevent or delay vision and other health issues associated with this condition. Here are 5 ways to help prevent vision loss from diabetes:



Getting dilated eye exams: Dilated eye exams are important for both types of diabetes. If a child in your care has a diabetes-related eye disease, treatment may help or prevent their vision from getting worse.



Focusing on preventive care: It is key a child in your care has regular check-ups with a primary care physician, monitors their blood glucose levels, and follows the diabetes-treatment program as prescribed. Talk to your child's care team (pediatric endocrinologist, pediatrician, diabetes educator, nutritionist, or registered dietitian) if you have any questions or concerns.



Engaging in physical activity: Encourage a child in your care to get or stay active in something they enjoy such as dancing, bike riding, or playing outside. Support them by joining in the physical activity along with them.



Eating healthy foods: Offer foods low in saturated fat and sugar by eating fresh fruits, vegetables, lean proteins, and whole grains. Avoid processed foods, juices, and soda.



Avoiding habits that may create complications: Smoking increases the risk of complications due to diabetes. Encourage a child in your care to not smoke or help them to stop, if needed.

For more information:

Juvenile Diabetes and Vision Health: Help Prevent Vision Loss in Youth
PreventBlindness.org/juvenile-diabetes

Diabetes + Your Eyes Resources
PreventBlindness.org/diabetes

Diabetes + Your Eyes Educational Toolkit
PreventBlindness.org/diabetes-and-the-eyes-educational-toolkit

American Academy of Pediatrics: Diabetes in Children
healthychildren.org/English/health-issues/conditions/chronic/Pages/Diabetes.aspx

Juvenile Diabetes Research Foundation
jdrf.org/disease-complications/eye-disease



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