

Diabetes and Diabetic Eye Disease

Control of diabetes at an early age, including children with diabetes, is key to preventing vision loss from diabetic eye disease.

Diabetes is the leading cause of new cases of blindness in adults 20-74 years of age.

Diabetic retinopathy is the result of leakage from or abnormal growth of the blood vessels that supply the retina, the light-sensitive and vision-essential region at the back of the eye.

According to Diabetes Forecast (April 2008):

- **Healthy blood glucose levels are like carrots: Both are good for your eyes.** Keeping up with blood glucose management lowers the risk of developing eye disease and keeps existing eye disease from getting worse.
- **It's worse under pressure.** High blood pressure can cause damage to blood vessels in the eye, and can make diabetic eye disease worse. Talk to your doctor about ways to control your blood pressure.
- **Cholesterol counts.** High cholesterol can also cause damage to blood vessels in the eye. Keep cholesterol down to keep eye disease from developing or worsening.

According to the CDC (Centers for Disease Control and Prevention):

- In 2007, 3.3 million adults with diabetes (aged 18 years or older) reported visual impairment—that is, trouble seeing even with their glasses or contact lenses on.
- 23.6 million, (7.8 percent), Americans have diabetes, including 5.7 million who have yet to be diagnosed. Another 57 million have pre-diabetes.

According to the American Academy of Ophthalmology:

- The risk of developing diabetic retinopathy increases with the number of years you've had diabetes. After 15 years with the disease, almost 80 percent of people with Type 1 diabetes have some form of diabetic eye disease.
- Diabetic retinopathy can also appear within the first year or two after the onset of the disease. For some people, diabetic retinopathy is one of the first signs they have diabetes.

According to the study *Projection of Diabetic Retinopathy and Other Major Eye Diseases Among People With Diabetes Mellitus*¹:

- The estimated number with diabetic retinopathy of any severity will grow to 16.0 million in 2050, up from 5.5 million in 2005.
- The prevalence of vision-threatening diabetic retinopathy is expected to nearly triple from 1.2 million to 3.4 million by 2050.
- The researchers projected even greater growth among blacks and Hispanics, particularly among those 65 or older.
- Glaucoma associated with diabetes will universally increase across demographic groups, the researchers calculated. By 2050, prevalence is projected to reach 1.45 million compared with 0.33 million in 2005.
- Glaucoma rates are expected to rise most among blacks 50 or older and among Hispanics across all age groups, including an 11- to 12-fold increase among those 65 and older.
- Cataract prevalence in persons with diabetes will reach 9.94 million in 2050, up from 2.96 million in 2005.
- Although increases were expected across age and gender categories, the cataract rates were particularly dramatic for blacks 75 and older, with 637% growth expected for women and 677% for men between 2005 and 2050.

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Prevent Blindness America recommends an annual dilated eye exam for people with diabetes. While diabetic retinopathy is not avoidable, management of the disease and treatment options can help reduce the risk of sight loss.

During pregnancy, women with diabetes are also at risk for developing diabetic retinopathy. Comprehensive, dilated eye exams are strongly recommended for those who plan to become pregnant and all expecting moms that have diabetes. -- *U.S. Department of Health and Human Services/National Eye Institute*

Pregnant women with diabetes should have an eye exam in the first trimester – since diabetic eye disease can progress rapidly during pregnancy. -- *American Academy of Ophthalmology*

Diabetes can cause major health problems. However, you can positively influence your overall health by controlling your blood sugar levels and choosing foods wisely. While Type 1 diabetes cannot be prevented, there are things you can do to help prevent Type 2. Prevent Blindness America suggests exercising 30 minutes a day -- five times per week (check with your doctor first), reducing your stress level, and making modest lifestyle changes, such as maintaining a healthy weight and quitting smoking.

Symptoms

Many people may have diabetic retinopathy and not know it. The only way to know for sure is to have a complete eye exam by an eye doctor. However, some symptoms may include:

- Blurry or clouded vision
- Floaters or dark spots in vision
- Straight lines that do not appear straight (such as flag poles, street lights, etc.)
- Difficulty seeing in dim light
- Tunnel vision

Diagnosis/Treatment

Early treatment of retinopathy often improves the chance for saving sight. It is important to regularly visit an eye doctor, even before you notice any problems. The eye exam should include dilation of the pupils. Both adults and children who have diabetes should have an eye exam at least once a year. If diabetic retinopathy is found, more frequent eye exams may be necessary to help check progress of the disease and determine treatment options.



¹ Saaddine, J., Honeycutt, A., Venkat Narayan, K. M., Zhang, X., Klein, R., & Boyle, J. (n.d.). Projection of Diabetic Retinopathy and Other Major Eye Diseases Among People With Diabetes Mellitus: United States, 2005-2050, December 2008, Saaddine et al. 126 (12): 1740. *Archives of Ophthalmology*.