

Nearly 21 million American adults suffer from diabetes. Diabetes is a disease in which the body's ability to control the levels of glucose (sugar) in the blood is impaired.

High blood sugar gradually damages blood vessels all over the body. With time, diabetes can damage virtually any organ system in the body. The eye is by no means immune to the effects of diabetes, making diabetic eye disease a leading cause of blindness in the United States. Uncontrolled blood sugar can damage the delicate blood vessels and nerves inside the eye, leading to a condition known as diabetic retinopathy. There are two types of diabetic retinopathy, Non proliferative Diabetic Retinopathy, (also called Background Diabetic Retinopathy) and Proliferative Diabetic Retinopathy.

In Background diabetic retinopathy, elevated blood sugars damage the small blood vessels within the retina and causes the vessels to leak fluid or blood. Protein and fat from this fluid form solid deposits called exudates. Fluid and exudates can build up in the macula and cause permanent vision loss. If diagnosed early, macular edema is often treatable with laser.

Proliferative diabetic retinopathy occurs when diabetes has severely damaged blood flow to the retina. The retina responds to this lack of blood flow by attempting to grow new blood vessels, a process known as neovascularization. Unfortunately,

these new blood vessels are extremely fragile and often rupture leading to hemorrhage (bleeding) inside the eye. This can lead to scarring, retinal detachment, glaucoma, and eventual blindness. If recognized early, proliferative diabetic retinopathy can often be treated with laser and or incisional surgery.

A patient's first line of defense against diabetic retinopathy is tight control of their blood sugars. Diet, exercise, and medication may all play a role in maintaining normal blood glucose levels. It is also important to maintain good control of blood pressure and cholesterol. Both of these conditions can damage small blood vessels and make the diabetic retinopathy worse.

If you have diabetes, early diagnosis and treatment of diabetic eye disease improve your chances of maintaining healthy vision. It is recommended that newly diagnosed adult diabetics have their eyes examined within a few months of diagnosis. Your ophthalmologist (Eye M.D.), will dilate your pupils in order to examine the retina and look for any diabetic changes in your eyes. If there is no evidence of diabetic eye disease, your ophthalmologist will generally recommend yearly eye exams. Most diabetics who have been blinded by the disease did not have their eyes examined until they experienced some loss of vision. Prevention and early detection and treatment will help maintain your sight.

# Diabetes & the Eye

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