

## DIABETIC RETINOPATHY

By Robert L. Epstein, MD

Diabetic retinopathy is the most common blinding complication of diabetes. But the progress of the disease can be slowed and sometimes even reversed through proper care and attention. It is caused by swelling and leaking of blood vessels and the growth of fragile, abnormal new blood vessels on the surface of the retina.

Tight blood sugar control, losing weight, control of blood pressure and cholesterol, stopping smoking, controlling stress, and keeping alert for vision problems all are good for self-care to slow the progression of diabetic retinopathy. Nearly half of diagnosed adult diabetics have diabetic retinopathy in some stage. Thus it is important for diabetics to have a dilated eye exam at least annually, and more frequently if retinopathy is diagnosed. Pregnant diabetics may need additional exams during pregnancy.

Diabetic retinopathy progresses in stages. Small blood vessels lose structural strength and bulge in spots. These bulges, called micro-aneurysms, leak serum and cause localized swelling. If the leak occurs very near the macula, then there can be serious vision loss. Small blood vessels may repair themselves by just closing and loss of oxygen damages spots on the retina and causes further spotty visual loss including even serious loss of visual acuity. Areas of retina with insufficient oxygen supply cry out chemically and cause the formation of new blood vessels. But these new blood vessels do little to nourish the oxygen-starved areas and the new blood vessels are fragile and leaky. The new blood vessels may be far away in the eye from the point of oxygen loss and new blood vessel twigs can clog the fluid circulation inside the eye resulting in high eye pressure (glaucoma). Minor events like bending over can cause fragile blood vessels to bleed. The blood blocks vision and the body processes to remove the blood causes scarring and maybe worse damage (tractional retinal detachment).

Visual loss in diabetics could result from many causes – temporary changes in eyeglass prescription because of swelling of the lens because of blood sugar changes, formation of cataract or clouding of the lens of the eye, swelling of the macula due to leaky retinal microaneurysms, actual loss of circulation to the macula from capillary shutdown, or loose blood inside the eye blocking the light. These are few of the reasons for visual loss and the complexity of diagnosis requires doctor expertise.

Fortunately, methods have been developed that can really help people with diabetic retinopathy. It is important that diabetics have and to remember their results of a blood test periodically called hemoglobin A1C, which can be view as a 90-day report card on blood sugar control. Tight blood sugar control means an A1C value of less than 6.0 percent and tight control can really slow retinopathy progression. Some people need to switch from oral treatment to multiple dose insulin or even an insulin pump, and you should consult your doctor or endocrinologist about that. . There are various laser treatments and surgical treatments of the eye that are very helpful and these will be discussed in a separate article.

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Epstein established and is in practice at the Mercy Center for Corrective Eye Surgery in McHenry. He established the Lake-McHenry chapter of the American Diabetes Association and also the first eye laser treatment center in Lake or McHenry County.