

The Dakota Diabetes Coalition is proud to offer a regular column on diabetes and related concerns every other Friday.



Dr. Johnson is a family practice doctor in Grand Forks with a special interest in diabetes -- and a special knack for writing. As a member of the Dakota Diabetes Coalition, he has generously made himself available to answer questions through our listserv. If you have comments, or questions for Dr. Johnson to address in future columns, please contact gailhand@qwest.net

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<http://www.ndhealth.gov/diabetescoalition/>

Annual dilated exams a must

Eye disease shows no symptoms

Q. Do both type 1 and type 2 patients need the same eye exams?

A. All people with diabetes need to take eye exams seriously and providers must make sure patients are getting scheduled tests. Diabetes eye exams are an important component to overall diabetes management. Although the health care provider may look at the retinas at a routine office visit, this is not a substitute for the annual dilated exam performed by an eye care professional.

Most diabetic eye disease is asymptomatic until there is a serious and potentially irreversible problem. The Diabetes Control and Complications Trial (DCCT) published in 1993 showed a direct relationship between A1C and risk of retinopathy. Nearly all third-party payers will cover diabetes eye exams as part of routine diabetes care. Blurry vision can accompany acutely elevated blood glucose values, and is a fairly common complaint.

Types of Diabetic Eye Disease

- 1) **Diabetic Retinopathy.** Non-proliferative diabetic retinopathy (called background retinopathy) is **fairly common**, and is generally not considered to relate to significant progression of vision loss. Proliferative Retinopathy is more aggressive, and can result in substantial vision impairment or even blindness. Diabetic eye disease is the leading cause of blindness in the United States. About 25% of patients with type 1 diabetes will have some proliferative retinopathy at 15 years following diagnosis.
- 2) **Proliferative retinopathy** is less a risk for those with type 2 than for patients with type 1. Overall, about 700,000 persons with diabetes have proliferative retinopathy. Perception of flashing lights, distorted vision or partial or total loss of vision may signal an impending retinal detachment or bleed-- which is a **medical emergency**. Marked improvement in treatments, most notably laser photocoagulation, has resulted in better outcomes. In addition to glucose control, tight blood pressure control reduces risk of retinopathy.
- 3) **Macular edema**, or swelling of the central portion of the retina is closely related to retinopathy. This can result in distortion or loss of vision centrally, which can make many activities such as reading, driving or watching TV difficult. Treatment management corresponds to that of retinopathy and the conditions may occur together.
- 4) **Glaucoma**, another potential cause of blindness, is approximately 1.4 times more common in the diabetes population compared to the non-diabetes population. It is characterized by increased pressure of the fluid in the eyeball, and is easily detected and treatable with routine eye exams.
- 5) **Cataracts**, or clouding of the lens, are also more common in diabetes, and probably occur at younger ages. It may be years before these require a surgical repair, but this is a fairly routine procedure performed by an ophthalmologist.
- 6) **Other potential ocular problems** in diabetes include infection (conjunctivitis, including those caused by fungal organisms), neovascularization of the lens (small capillaries overgrowing the lens), and cranial nerve mononeuropathies. These mononeuropathies can produce double vision or loss of vision, as they can affect a single cranial nerve controlling the eyes movement, or the optic nerve itself. Ischemic events of the retinal surface can also occur. These are interruptions of blood flow to the retina, which in essence, are small 'strokes' affecting vision at the level of the eyeball, not the brain.

Current Screening Guidelines

Well-established studies, such as the DCCT and the Diabetic Retinopathy Study (DRS) have lead to the establishment of the current guidelines for screening and management of diabetic eye disease, particularly retinopathy.

In type 1 patients, the initial comprehensive dilated eye exam should be **no later than five years after diagnosis**. For type 2 patients, the first comprehensive dilated eye exam should be done **soon after diagnosis**, as most of these patients will have had a pre-diabetes syndrome. Retinopathic changes can occur in the pre-diabetes time period, and retinopathy may exist even prior to the formal diagnosis of type 2 diabetes.

Comprehensive dilated eye exams should occur annually after that. If diabetic eye disease becomes apparent, exams will be more frequent. **Pregnancy can accelerate retinopathy**. Women who have had an exam in the year prior to conception should have one again after the first trimester. This does not apply to patients with gestational diabetes.

Sources: Larsen: Williams Textbook of Endocrinology, 10th ed. Elsevier, 2003. American Diabetes Association.

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[Eye Exams and Diabetes, Dr. Johnson's Column #13, Jan. 11, 2008](#)

Make sure you are up to date and following guidelines. The ADA Standards of Care for diabetes are updated each January and can be found at this site:

http://care.diabetesjournals.org/cgi/reprint/30/suppl_1/S4
