



Diabetes and Eyecare

By Dr. Bart McRoberts

A major segment of the population, which requires careful ongoing eyecare, is diabetics. It is now estimated that 5 - 7 % of the Canadian population is diabetic. This means that there are about two million diabetics in Canada. Although it is one of the single most serious health risks to Canadians, an even greater risk is that about half of the people who are diabetic are not aware of it, or are undiagnosed.

Diabetes is a general disease that impairs the body's ability to metabolize carbohydrates (sugar) due to an insufficiency in the secretion of insulin and or a resistance of the body tissues to the action of insulin.

Diabetes primarily affects four main body systems: the nervous system, the large blood vessels, the small blood vessels, and the system that enables the body to fight off infections. Certain target organs are most affected by diabetes. These include the nerves and blood vessels, the kidneys and particularly the eyes.

There are two main types of diabetes. Type I, or insulin dependant diabetics, produce no insulin. They must, at least at the present time, receive their necessary insulin by injection. Usually, but not always, this type of diabetes involves people 35 years of age or younger. Type II, or non-insulin dependant diabetes, usually occurs in people 40 years of age or over. Treatment for this type of diabetes may involve diet, exercise or medications that enhance the production or action of the body's own insulin.

Because of the significant effect of diabetes on the eyes, the optometrist plays a major role in the care of the diabetic patient. This care involves several areas:

1. To identify patients with undiagnosed diabetes. Certain findings in the history or the eye examination can indicate diabetes may be present. Early detection of diabetes is very important to reduce damage caused by the disease.
2. To identify patients at risk of vision loss from diabetes. A thorough examination, using special instruments, of the retinas (the inner layer of the eye) of the diabetic is essential on a routine basis. The frequency of these examinations depends on the risk factors of each patient.
3. Reduce the risk of vision loss in patients with diabetes through timely diagnosis of retinal changes and intervention. Early treatment of diabetic retina changes reduces the incidence of severe vision loss by 50-60%.
4. Improve the quality of care rendered to patients with diabetes. Ongoing overall eyecare by the optometrist is important for the diabetic (even those comanaged by the retinal specialist). For example about 5% of the diabetic population develop glaucoma as opposed to 2% of the general population. Cataracts, another eye condition, are 2 to 4 times as prevalent in patients with diabetes, tend to occur at a younger age and develop faster. Attention is paid to related diseases such as elevated blood pressure and or elevated lipid levels.
5. Patient counseling. The optometrist can help the diabetic better understand their condition, especially their ocular status. He or she usually reinforces the treatment prescribed by the family physician, including the importance of regular physician visits, nutrition, goal setting and attention to diet and exercise. The importance of self-monitoring blood glucose levels is stressed.

As mentioned, the frequency of eye examinations required for diabetics depends on the individual risk factors: how long the diabetes has been present, how good the control is, and most important - the health of the retina. Visits may vary from once per year to every few months.

At these visits, the patient's pupils will be dilated with drops, so anyone uncomfortable with



this should bring someone to drive them. The patient's family physician is advised of the results of these examinations.

The procedures used in the eye examination of diabetics in B.C. are those of the Centers For Disease Control (CDC) and most recently of the American Diabetes Association, both of which have active programmes for the early detection and monitoring of diabetic eye disease, and are a universal guideline for all eye doctors in the United States and Canada. Included in these practice protocols are recommendations regarding referral to a retinal specialist.

In some diabetics, advanced retina damage can occur. These patients are referred to a retina specialist. The retina specialist's primary weapon in combating retina damage from diabetes is the laser. Laser therapy at the right time can significantly reduce the damage and retard the progress of retinopathy.

Early detection and careful monitoring of diabetes is the key to reducing long-term health effects. A proper treatment regimen can then be started and maintained. Routine eye care is an essential part of the detection of diabetes, and the ongoing diabetic management plan.