We hear about type 2 diabetes in the news and from our friends. What is this disease?

Type 2 diabetes is a growing problem worldwide. The blood sugar is controlled mainly by substances called hormones. Insulin is one of these, and it is produced in the pancreas by specialized cells (islets of Langerhans). When food containing carbohydrate is taken into the body, insulin causes the glucose to be taken up into body tissues such as the liver and the muscles. This mechanism forms the major part of a very wonderful process that normally keeps the blood sugar finely balanced.

When type 2 diabetes occurs, the tissues that normally respond to insulin and take up the sugar from the blood become resistant to insulin. This results in more insulin being produced but without efficient control of blood sugar levels. As time goes by, people with type 2 diabetes develop increasing difficulty in producing adequate amounts of insulin, which further upsets the control of the blood sugar. Type 2 diabetes is therefore caused by a combination of problems related to the action and production of insulin.

What are the symptoms of type 2 diabetes?

Patients with type 2 diabetes often have no symptoms at all. The condition is therefore often diagnosed after it has been present for some time. The first diagnosis may be made because the patient is experiencing a complication of the disease such as wounds that fail to heal, pain in the legs, or even a heart attack.

Patients with type 2 diabetes often experience significant thirst, which results in drinking large volumes of water. This in turn results in the production of large amounts of urine, which is further increased because sugar is also lost in the urine. Under normal circumstances, sugar (or glucose) is not present in the urine. An increase in appetite occurs and more food is consumed. Loss of energy and...
tiredness may also result, associated with a possible loss of weight. The vision may become blurred. One may be alerted to the diagnosis by sores or boils of the skin that take longer to heal. Fungal infections (thrush) in moist areas where perspiration occurs may be a warning sign that type 2 diabetes is present (under the arms, on the breasts, and in the groin).

Because a delay in symptoms often occurs, diagnosis screening for diabetes is worthwhile. This is especially true for individuals over the age of 45 years and also for those who are overweight. People who have close relatives with type 2 diabetes should also be screened on a regular basis. The screening test entails a simple blood test on blood obtained from a finger prick. The result is available within a few minutes.

**My mother has had type 2 diabetes for 10 years; what complications may we expect?**

Although your mother has been known to have diabetes for the past 10 years, it may have been present for even longer without symptoms or detection. The complications of type 2 diabetes result from the damage caused to the small blood vessels by the increased and uncontrolled blood sugar. The organs especially affected are the eyes, kidneys, and blood vessels of the nerves to the feet and hands. This can result in poor vision and even blindness, kidney failure, and painful limbs because of what is known as neuropathy. Patients with diabetes should be screened (tested) at least annually to detect and treat these complications at their earliest stages. It is important to cut the toenails carefully and keep the feet and body clean to prevent infections.

It is essential to perform these regular follow-up screenings because despite increased knowledge about the complications of diabetes, it remains the leading cause of blindness, kidney failure, and amputation. Prevention is better than cure—make sure the screening is done regularly.

**What is the best treatment for type 2 diabetes?**

Lifestyle modification is the cornerstone of treatment of type 2 diabetes. This includes a balanced and well-planned diet, and avoiding refined carbohydrates, cold sugar drinks, candy, and “junk” food. If the individual is overweight, weight loss is essential. Even a moderate weight loss of 11 pounds (5 kilograms) can help to lower the blood sugar and decrease the associated heart disease and other complications.

Exercise is key, and following consultation with your physician, at least 30 minutes of exercise every day is essential. Walking is a very effective exercise program.

Medication is required for some patients and may include tablets and even insulin replacement. Regular clinical monitoring is required.
I’ve heard that type 2 diabetes is being seen in teenagers. Is this so, and why?

All too sadly, this is the case. When we were studying medicine, this condition of type 2 diabetes was seldom if ever seen in youth. Inactivity, childhood and adolescent obesity, and poor dietary choices (refined carbohydrate, sugar-laden drinks, junk foods) are the major factors. These interact with genetic factors and have resulted in a rapid increase of type 2 diabetes in young adults.

Careful dietary choices and regular exercise are essential in prevention, and here prevention is the cure!

My doctor told me I have decreased kidney function and that my diabetes is the cause.

Many people with chronic kidney disease find it contributes to failing health, and if not managed may progress to the point at which they need either dialysis or even kidney transplants. A recent report from the Centers for Disease Control in the weekly bulletin *Morbidity and Mortality Weekly Report,* gave statistics on chronic kidney disease. The causes of chronic kidney disease (CKD) include high blood pressure, diabetes, obesity, and chronic infection. Even inherited problems such as polycystic kidneys can be involved.

The estimate is that nearly 17 percent of Americans over 20 years of age have CKD. This number is quite disturbing—especially when it is noted this is an increase of about 16 percent over previous estimates.

The role of diabetes and high blood pressure is important, and as the population literally gets heavier, these two diseases increase, too. CKD is monitored by blood tests that measure metabolic waste products such as urea and creatinine, and also a measure of albumin in the urine. It is known that increasing age is associated with more CKD, as would be expected. And another interesting statistic finds that people with less education have more CKD.

Diabetes *more* than doubles the risk of kidney disease, while cardiovascular disease also *nearly* doubles the risk. Racial factors seem to play a role too, with non-Hispanic Blacks showing about 20 percent, Mexican-Americans approximately 19 percent, and non-Hispanic Whites 16 percent prevalence of CKD.

These figures illustrate the importance of maintaining a healthful weight and minimizing diabetes and hypertension. Of course, infection needs to be properly treated, and pyelonephritis, which is more common in women than men, should be taken seriously.

Inherited conditions such as polycystic kidney disease cannot be avoided, but persons who have such a problem need to be very careful to avoid any further damage.

A World Kidney Day was established in 2006 to promote awareness of kidney
disease. Treatment of high blood pressure and avoidance of type 2 diabetes with lifestyle modification will slow the progression of chronic kidney disease, lowering the need for dialysis and transplants. It is, nevertheless, projected that the increase noted during the past 30 years can be expected to continue through 2010.

*www.cdc.gov/mmwr/preview/mmwrhtml/mm5608a2.htm.*

Allan R. Handysides, M.B., Ch.B., F.R.C.P. (C) is director of the General Conference Health Ministries Department; Peter N. Landless, M.B., B.Ch., M.Med., F.C.P.(SA), F.A.C.C., is ICPA executive director and associate director of Health Ministries.

While this column is provided as a service to our readers, Drs. Landless and Handysides unfortunately cannot enter into personal and private communication with our readers. We recommend that you consult with your personal physician on all matters of your health.