

What's Up, Sugar?

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Twenty-four million people in the United States live with diabetes, a disease of the pancreas. The pancreas produces a hormone, insulin, which is necessary to convert glucose for energy. Diabetes, commonly known as "sugar diabetes" develops when a worn-out pancreas cannot create enough insulin or when target cells become resistant to insulin. Glucose sugar builds up in the blood stream and is excreted in the urine.

America's sedentary lifestyle and high-calorie diet has led to an obesity epidemic; obesity is directly linked to most cases of diabetes. There are few warning signs or symptoms but caught early, progression to damaging, severe diabetes is not inevitable. If one is over 45 and/or overweight it is important to be tested for diabetes. Diagnosis is via a simple blood test, HBA1C. This test measures glucose attached to red blood cells. Because of a blood cell's life cycle the HBA1C reflects control over the last two to four months.

Treatment is targeted at blood sugar and blood pressure through exercise, diet, smoking cessation, and medication. Those with less common insulin-dependent diabetes must have insulin. The more common obesity-connected Type 2 diabetes can be treated and sometimes eliminated with weight loss and exercise. If this is inadequate, oral medication such as metformin is inexpensive, effective, and cardio-protective. Blood pressure control is as important as blood sugar control because excess sugar can attach to blood vessels making them less elastic. A diabetic is two to four times more likely to suffer heart disease or stroke.

Diabetes is the leading cause of blindness in adults under the age of 74. Sometimes the first sign of diabetes is a change in vision or prescription. A thorough, dilated eye examination will check for eye health changes typical of diabetes. It takes a few years for visible changes to occur in the eye but at the end of fifteen years more than 60% of people will have diabetic retinopathy. These are changes inside the retina, the inner lining of the eye responsible for vision.

Early retinopathy shows as tiny hemorrhages around the blood vessels. Diabetes causes interference with the tiniest blood vessels' ability to carry oxygen. These hemorrhages, or bruises, cause no problems on their own but slow chemical damage is occurring.

Swelling of the retina occurs in areas deprived of oxygen leading to cell death. To prevent that the body grows new blood vessels but these are fragile and faulty. These faulty blood vessels can leak and bleed inside the eye. Treatment by sealing these with laser is extremely effective if caught early. Far better is good prevention and control of the blood sugar. The severity of diabetic eye disease is directly related to how long the disease has been present and how well the blood sugar is controlled.

Large fluctuations in blood sugar accelerate retinal damage. Advanced stages of diabetic retinopathy show large hemorrhages, scarring from absorbed blood, free-floating blood, and large clumps of faulty blood vessels. At this point things get more difficult to manage; this is when permanent blindness becomes a real possibility. Special dyes are injected into the arm to allow photographs of leaking blood vessels in the eye. Laser can prevent further damage but large numbers of burns reduce side vision.

Diabetics should have their eyes checked at least every year. Many family physicians require this because they cannot look well enough into the eye to detect early damage. Dilation is absolutely necessary to rule out changes from diabetes. If vision fluctuates then blood sugars may be uncontrolled.

The family doctor will check the HBA1C and often refer for nutritional counseling as well as an eye examination.

Diabetes affects the entire body leading to stroke, heart attack, blindness, and amputation. Be sure to have your doctor monitor blood sugar, blood pressure, and vision for early detection and treatment.

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