

# Physical fitness and a healthy diet remain the best measures to prevent diabetes

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Credit: Centers for Disease Control and Prevention

Though many of the issues that cause diabetes are preventable, incidences of the disease have multiplied in the past 30 years, according to the World Health Organization. A person with diabetes has blood

glucose levels that are above normal, and their body either does not make enough insulin or it cannot use its own insulin as well as it should. That causes sugar to build up in the blood.

In addition to [heredity](#), lack of [physical activity](#) and an unhealthy diet, contribute to diabetes in children and adults. Societal suggestions of cheap food, which in excess can lead to obesity, are a factor, said Francesco S. Celi, M.D., chair of the Division of Endocrinology and Metabolism in the Virginia Commonwealth University School of Medicine.

In a Q&A, Celi offered suggestions of ways someone with diabetes can properly manage the disease, and he explained preventive measures and resources available at VCU Health to combat the disease.

## **What are the general causes of diabetes?**

Type 2 diabetes is caused by a combination of relative deficiency in insulin secretion and insulin resistance needed to maintain glucose levels within normal limits. Insulin resistance is mostly caused by obesity and a decrease in glucose utilization due to lack of physical activity. Type 1 diabetes is the result of an autoimmune process which causes the loss of the cells in the pancreas that produce insulin. This form of diabetes almost invariably requires the use of insulin.

## **What, if any, demographic group is most susceptible to the disease?**

African-Americans, Latinos, and Native Americans are disproportionately affected by Type 2 diabetes, even when correcting for anthropometrics characteristics (body weight and degree of adiposity).

## **What are the fatal effects of diabetes?**

Diabetes causes progressive damage to the small and large vessels and over time, causes reduced oxygen delivery to the tissues that need it the most, such as kidneys, eyes and nerves. Diabetes is one of the major causes of blindness, renal failure leading to dialysis and amputations. In combination with lipid disorders and/or hypertension, diabetes multiplies the risk for coronary events and stroke.

## **What societal contributions have possibly made diabetes more prevalent in recent years?**

Type 2 diabetes has become so prevalent because of the obesity epidemics. Our society has provided us with a constant supply of cheap food rich in calories and carbohydrates, and we have dramatically decreased our physical activity. What looks like a blessing has turned into a curse. In other words, we as human species are hard-wired to be hungry, and the continuous exposure to food requires a high degree of self-restraint to avoid weight gain.

## **For patients you have seen, what are the more common causes for diabetes?**

In my clinical practice I see roughly 50 percent of patients with Type 1, and 50 percent of patients with Type 2 diabetes. But this is definitely not representative of the general practice. Rather, it reflects our subspecialty of [endocrinology](#) and our practice within the Diabetes Center. At VCU Medical Center, we are consulted to support the care of complicated patients admitted to the hospital with diabetes, particularly in the surgical and oncology services.

## What resources are available at VCU Health for those with diabetes?

VCU Health is working to deliver a comprehensive management program for patients living with diabetes, from the outpatient specialty clinic to the coordination of care for patients undergoing surgery, to patients' care during their hospitalization. We have recently received, from the American Diabetes Association, the recognition as a Diabetes Education Program. At our locations in the Ambulatory Care Center and at the VCU Health Stony Point Clinic, we provide comprehensive outpatient care, including education, nutrition evaluation, [insulin](#) pump download and continuous glucose monitoring. In our diabetes center, our endocrinologists work side by side with [diabetes](#) educators and nutritionists to deliver a personalized treatment plan for our patients.

Provided by Virginia Commonwealth University

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