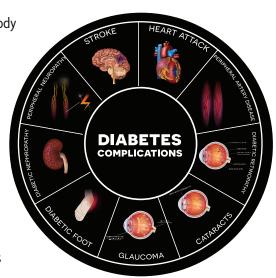
Type 2 Diabetes

Type 2 Diabetes is a metabolic disorder that develops when the cells of the body lose their sensitivity to insulin, a condition known as **insulin resistance**. When insulin is unable to be transported into the cells, glucose builds up in the bloodstream, leading to condition known as **hyperglycemia**, or "sugar in the blood." Uncontrolled hyperglycemia can lead to chronic inflammation, oxidative stress, endothelial damage, atherosclerosis, renal dysfunction and hypertension, and retinal damage leading to blindness.

A variety of overlapping genetic, metabolic and environmental factors contribute to the incidence and prevalence of type 2 diabetes. However, the strongest influences are associated with **obesity and sedentary lifestyle** which lead to progressive insulin resistance over time. Although it can be diagnosed at any age, T2D generally occurs in adults over the age of 35⁽²⁾.

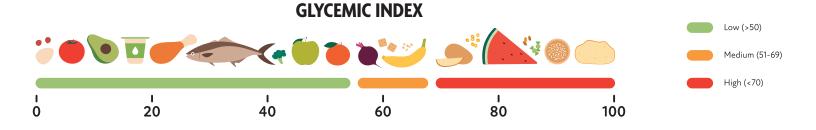




Nutritional Intervention is a first line defense against cardiometabolic dysfunction. The traditional Western diet is calorie dense, but nutrient poor. It is high in sodium, sugar and unhealthy fat, leading to metabolic changes that cause type 2 diabetes. By incorporating **whole foods** that are rich in micronutrients, low in salt and sugar, and full of healthy fats, the condition can be prevented. In patients who have already been diagnosed, **following a healthy dietary pattern** has been shown in several studies to reverse its negative effects⁽³⁾.

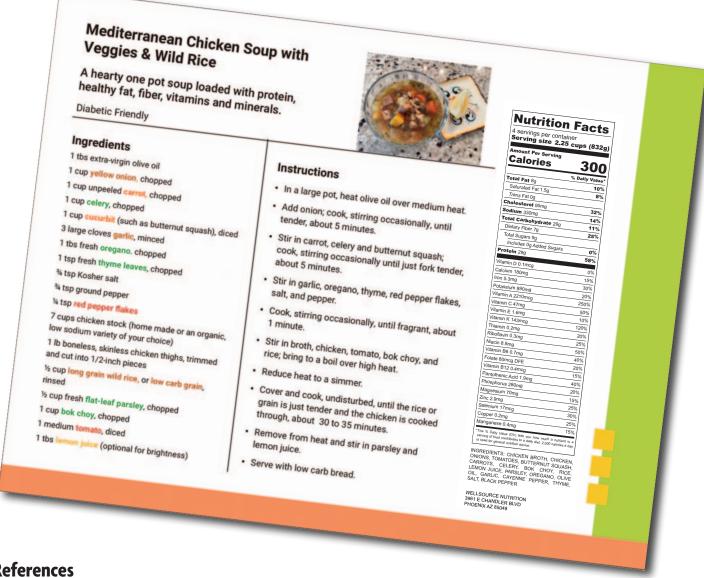
In addition to nutritional intervention, **Physical Activity** in the form of strength and endurance training is a well-established approach to prevent and manage type 2 diabetes. Sustained muscle contraction causes an increase in the number of receptors in cells that allow glucose to be taken up as fuel. This increase in GLUT 4 receptors **improves glucose regulation** by increasing glucose uptake and removing it from the circulation, reducing the negative effects⁽⁴⁾.

Cardiometabolic risk is influenced by a variety of factors including body weight, cholesterol and triglyceride ratios, blood pressure, insulin resistance, oxidative stress, inflammation, and vascular health. The **Mediterranean Diet** is considered a **low-glycemic diet** and is associated with improved cardiometabolic conditions. It is defined by **high consumption of whole, plant-based foods**, the use of olive oil as a primary source of fat, low-to-moderate consumption of seafood, dairy products and poultry, low consumption of red meat, and low-to-moderate consumption of wine with meals.



Unique to the diet is its component of **communal and social dining** which is common to the Mediterranean region and may have positive impact on longevity. Both the American Diabetes Association and the American Heart Association endorse the diet for improving glycemic control and **reducing** cardiometabolic risk factors in type 2 diabetes. Studies show that higher adherence to the Mediterranean diet is associated with a **20% reduced risk** of developing type 2 diabetes, while the results of randomized controlled trials show that Mediterranean diet reduces A1C levels by 0.30-0.47%. It is also associated with a 30% reduced risk for cardiovascular events. The success of the Mediterranean diet appears to lie in its ability to reduce inflammatory markers and provide antioxidative benefits(1).





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