The Main Cause of Diabetes

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A chronic metabolic illness called diabetes affects millions of people globally. For diabetes to be prevented and effectively managed, the primary causes must be identified.This post seeks to examine the main causes of diabetes. We can obtain important insights into the primary causes of diabetes and their implications for public health by incorporating the findings from these investigations (Wang, 2017).

The relationship between lipid profiles and the metabolic syndrome in people with type 2 diabetes is examined in this study. According to the research, dyslipidemia, which is defined by abnormal blood cholesterol levels, may have a significant role in the onset of diabetes. It was discovered that insulin resistance and reduced glucose tolerance, two characteristics of diabetes, are closely correlated with abnormalities in high-density lipoprotein cholesterol (HDL-C) and triglycerides (Tanaka., 2017) .

The International Diabetes Federation offers a global perspective on the prevalence and anticipated trends of diabetes in this extensive publication. It draws attention to the sharp increase in instances, which is mostly caused by rising obesity rates. Through a variety of processes, including insulin resistance, chronic inflammation, and altered adipokine production, obesity has become a significant risk factor for diabetes. In order to tackle the rising incidence of diabetes worldwide, the report underlines the urgent need for public health measures that target obesity (Karuranga, 2018).

The numerous risk factors connected to the emergence of type 2 diabetes are discussed in this review article. It stresses how environmental variables, bad lifestyle choices, and genetic predisposition all work together to promote disease development (Tanaka., 2017). Sedentary behavior, a poor diet, smoking, and psychological stress are singled out as important risk factors that can be modified. The newest developments in diabetes treatment and prevention are also covered in the paper, with a focus on pharmacological interventions, lifestyle changes, and potential new treatments (Karuranga, 2018).

Several genes have been associated with an increased risk of diabetes. Type 1 diabetes mellitus (T1D) is thought to have a strong genetic component, with certain human leukocyte antigen (HLA) genes associated with a higher risk (Concannon P et al., 2009). However, T1D is considered a multifactorial disease that requires other environmental factors to cause the disease (Florez JC. 2008)

Type 2 diabetes mellitus (T2D) also has a genetic predisposition, but it is not better defined than T1D. Mutations in genes related to insulin production, glucose metabolism, and pancreatic function increase the risk of T2D. Some examples include the TCF7L2, PPARG, and KCNJ11 genes (Florez JC., 2008)

 A sedentary lifestyle, poor food choices, and obesity play an important role in the development of type 2 diabetes treatment. leads to weight gain and insulin resistance. Adipose tissue, particularly visceral fat, produces inflammatory cytokines and hormones that interfere with insulin signaling (Tanaka., 2017).

In addition, a diet rich in refined carbohydrates, saturated and trans fats, low in fiber and consisting of whole foods is associated with an increased risk of T2D (Mozaffarian D, 2011).

On the other hand, eating a healthy diet that includes fruits, vegetables, lean grains and lean meats can help prevent diabetes (Mozaffarian D, 2011) Various factors of the environment cause diabetes. Infectious diseases such as enteroviruses, rubella, and cytomegalovirus have been associated with autoimmune diseases leading to type 1 diabetes (JC., 2008) Exposure to certain chemicals, such as organochlorine pesticides, dioxins, and heavy metals. It has been shown to be associated with T2D risk. Environmental toxins disrupt insulin signaling, affect pancreatic function, and cause oxidative stress (Patterson CC, 2014).

Analysis of the three aforementioned sources reveals that the development of diabetes is significantly influenced by dyslipidemia, obesity, and modifiable lifestyle variables. The establishment of these root causes serves as the foundation for efficient disease management and preventive measures. Diabetes incidence and burden may be decreased through public health initiatives focusing on dyslipidemia, preventing obesity, and changing lifestyle habits. Future individualized diabetes treatment strategies will depend on ongoing study into the intricate interactions between genetic, environmental, and lifestyle factors.

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