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## Diabetes: Physiological and Psychological Aspects

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### Abstract

Diabetes is a chronic condition that develops when the pancreas either produces insufficient amounts of insulin or when the body cannot properly utilise the insulin that it does. Blood sugar levels are controlled by the hormone insulin. Uncontrolled diabetes frequently results in hyperglycemia, also known as high blood glucose or raised blood sugar, which over time causes significant harm to a number of different bodily systems, including the neurons and blood vessels.

Adults 18 years and older who had diabetes made up 8.5% of the population in 2014. 2019 had 1.5 million deaths directly related to diabetes, and 48% of those deaths happened before the age of 70. Diabetes resulted in an additional 460 000 renal disease deaths, and high blood sugar results in approximately

**Keywords:** Diabetes, personality, Physiological aspects, Psychological interventions.

### Introduction

Although diabetes is primarily a long-term metabolic condition, it has well-established psychological linkages and effects. An overview of some of the recognised findings regarding the psychological effects of diabetes in adults and adolescents is provided in this article. This narrative review discusses the psychological effects of diabetes and how a person's psychological health might affect how their diabetes develops, is managed, and manifests in their body. In addition to raising the risk of suicide, diabetes can cause significant distress and common mental health issues like anxiety, sadness, and sleep disturbances<sup>1</sup>. Additionally, it has an impact on several aspects of cognitive performance, including focus, memory, executive function, and the

rate at which information is processed. The burdensome condition of diabetes drastically lowers quality of life<sup>2</sup>.

### Types of Diabetes

**Type 2 diabetes:** The body's inefficient use of insulin leads to type 2 diabetes, also known as non-insulin-dependent or adult-onset. Type 2 diabetes affects more than 95% of persons with the disease. The primary causes of this kind of diabetes are obesity and inactivity.

Although they are frequently less severe, symptoms of type 2 diabetes can be comparable to those of type 1. As a result, the condition may not be discovered until after it has already caused difficulties.

This type of diabetes was previously exclusively observed in adults, but it is now increasingly common in youngsters as well.

**Type 1 diabetes:** Diabetes type 1 (formerly called insulin-dependent, juvenile, or childhood-onset) is characterised by inadequate insulin synthesis and

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necessitates daily insulin therapy. There were 9 million people with type 1 diabetes worldwide in 2017; the majority of them reside in high-income nations. Both its origin and how to stop it are unknown.

Symptoms include frequent urination (polyuria), excessive thirst (polydipsia), persistent hunger, loss of weight, alterations in vision, and weariness. These signs could appear overnight.

**Gestational diabetes:** Hyperglycemia during pregnancy occurs when blood glucose levels are above normal but below those that are indicative of diabetes. During pregnancy, gestational diabetes can develop.

Complications during pregnancy and delivery are more likely in women with gestational diabetes. These women are more likely to develop type 2 diabetes later in life, as are perhaps their offspring.

Prenatal screening is used to determine gestational diabetes rather than patient reports of symptoms.

**Impaired glucose tolerance and impaired fasting glycaemia:** Normality and diabetes can coexist with disorders known as impaired glucose tolerance (IGT) and impaired fasting glycaemia (IFG). Although it is not always the case, type 2 diabetes is most likely to develop in those with IGT or IFG.

**Health impact:** Diabetes over time can harm the nerves, eyes, kidneys, blood vessels, heart, and eyes.

- Heart attacks and strokes are two- to three-fold more likely to occur in adults with diabetes.
- Neuropathy (nerve damage) in the feet raises the risk of foot ulcers, infection, and ultimately the requirement for limb amputation when combined with decreased blood flow.
- A significant contributor to blindness, diabetic retinopathy results from cumulative long-term harm to the retina's tiny blood vessels. Diabetes causes over a million individuals to go blind.
- One of the main reasons of renal failure is diabetes.
- Diabetes increases the risk of poor outcomes for a number of viral diseases, including COVID-19.

**Prevention:** Type 2 diabetes can be prevented or delayed with lifestyle changes, according to research.

Having a healthy body weight and engaging in frequent, moderate-intensity physical activity for at least 30 minutes most days will help prevent type 2 diabetes and its complications. To control weight, one must increase activity, eat a nutritious diet free of sugar and saturated fats, and abstain from cigarette use because it raises the risk of diabetes and cardiovascular disease<sup>3</sup>.

**Diagnosis and treatment:** Blood glucose testing, which is not particularly expensive, can help with early diagnosis. Diabetes is treated by reducing blood glucose and other known risk factors for blood vessel damage, as well as by diet and exercise. In order to prevent difficulties, it's crucial to stop smoking. In low- and middle-income nations, the following interventions are both practical and cost-effective:

- Management of blood glucose, particularly in type 1 diabetes. People with type 1 diabetes need insulin, those with type 2 diabetes can take oral medications but may also need insulin, blood pressure control, and foot care are all necessary (patient self-care by maintaining foot hygiene; wearing appropriate footwear; seeking professional care for ulcer management; and regular examination of feet by health professionals).

**Other cost-cutting measures include:**

- Retinopathy testing and treatment (which results in blindness);
- Management of blood lipids (to maintain healthy cholesterol levels);
- Detecting and treating renal damage caused by diabetes in its early stages.

**Ethical Clearance:** Not required

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## References

1. Global Burden of Disease Collaborative Network. Global Burden of Disease Study 2019. Results. Institute for Health Metrics and Evaluation. 2020 (<https://vizhub.healthdata.org/gbd-results/>).
2. Diabetes mellitus, fasting blood glucose concentration, and risk of vascular disease: a collaborative meta-analysis of 102 prospective studies. *Emerging Risk*

- Factors Collaboration. Sarwar N, Gao P, Seshasai SR, Gobin R, Kaptoge S, Di Angelantonio et al. *Lancet*. 2010; 26;375:2215-2222.
3. Causes of blindness and vision impairment in 2020 and trends over 30 years, and prevalence of avoidable blindness in relation to VISION 2020: the Right to Sight: an analysis for the Global Burden of Disease Study GBD 2019 Blindness and Vision Impairment Collaborators\* on behalf of the Vision Loss Expert Group of the Global Burden of Disease Study† *Lancet Global Health* 2021;9:e141-e160.
  4. 2014 USRDS annual data report: Epidemiology of kidney disease in the United States. United States Renal Data System. National Institutes of Health, National Institute of Diabetes and Digestive and Kidney Diseases, Bethesda, MD, 2014:188–210.