

# Connecting the Dots: The Relationship Between Diabetes Mellitus and Stroke

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## Key points:

- Introduction.
- Diabetes as a risk factor for stroke.
- Pathophysiological relationship between diabetes mellitus and stroke.
- Prevention of stroke in patients with diabetes.

Diabetes mellitus and stroke are somehow related to each other to a great extent. Diabetic patients have a higher risk of getting strokes than normal people in the world. The risk of a diabetic patient to get a stroke differs on the basis of sex; the risk being higher in female diabetic patients. The chances of the stroke recurrence are also higher in diabetic patients. In this case report, we will discuss how these two diseases correlate with each other.<sup>1</sup>

## Introduction:

A stroke is a disease that directly affects the body's nervous system. This is also called a stroke. A stroke occurs when the blood supply to the brain is blocked due to a blockage. It can also occur when blood vessels burst. A stroke causes severe brain damage and disability that can lead to death.

Diabetes mellitus is a metabolic disease in which there is a high level of glucose in the blood due to a decrease in the secretion of natural insulin in the body. Insulin is used to balance blood glucose levels. It is really essential for the normal functioning of the body. So, diabetic patients inject artificial insulin into their body to balance the blood glucose level.<sup>2</sup>

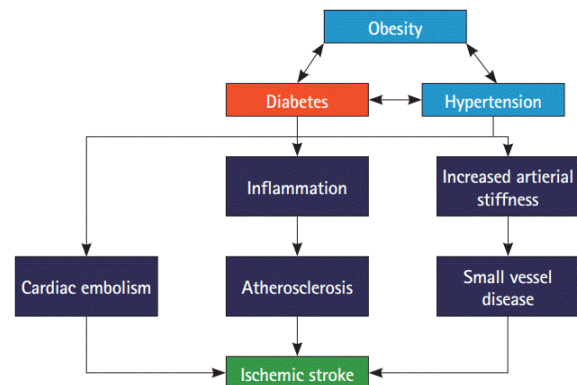
## Diabetes as a risk factor for stroke:

The International Diabetes Federation has confirmed that approximately 537 million adults (ages 20–79) have diabetes; this could increase to 643 million by 2030 and 783 million by 2045. Diabetes can cause

various microvascular and macrovascular complications, including stroke. In 2019, there were 12.2 million stroke cases and 101 million prevalent stroke cases worldwide. These incidence and prevalence figures have increased significantly since 1990. Additionally, these stroke incidence and prevalence estimates are more common in women than in men (6.44 million and 56.4 million in women vs. 5.79 million and 45.0 million in men, respectively).<sup>2</sup>

## Pathophysiologic relationship between diabetes and stroke:

Ischemic stroke can be caused by atherosclerosis of the large arteries, cerebral small vessel disease (SVD) and cardiac embolism, as well as a number of other less common causes. Diabetes may play a significant role in each of the three main mechanisms.<sup>3,4</sup>



### Prevention of stroke in people with diabetes:

We can prevent stroke if we manage risk factors through lifestyle changes and pharmacological or surgical interventions. Intensive multi-risk factor intervention can significantly reduce the incidence of first stroke and the number of recurrent cerebrovascular events in people with T2D. <sup>2</sup> In a recently published Danish study of patients with T2D and atherosclerotic cardiovascular disease (ASCVD), the risk of first ischemic stroke decreased 5 times. Neurologists who treat people having stroke are usually concerned in atrial fibrillation, carotid stenosis, hypertension, and hyperlipidemia, but less often in the management of diabetes. Increased awareness of diabetes management among neurologists may be beneficial, especially in the light of recent evidence that agents which lower the level of glucose in blood help reduce stroke.<sup>5,6</sup>

### References:

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