WHY DIABETES RISK BEGINS BEFORE THE SCALES SHOW IT

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A person does not have to be visibly overweight to be at risk of type 2 diabetes. Among South Asians, the condition can develop at younger ages and lower body weights, prompting researchers to look beyond BMI for answers.

A 2025 study published in Nature Medicine has offered new insight into why type 2 diabetes can develop earlier among people of South Asian ancestry. Examining genetic and health data from 50,556 British Pakistani and Bangladeshi participants, researchers identified two important pathways associated with the condition: reduced insulin production and unfavourable fat distribution.

The study found that participants with a high genetic risk across both pathways were diagnosed with type 2 diabetes an average of 8.2 years earlier and at a body mass index (BMI) around 3 kg/m² lower than those with low genetic risk across both. The findings suggest that susceptibility is influenced by more than body weight alone.

Like many, Belayet, a 24-year-old university student in Dhaka, did not think he had much reason to worry about diabetes. He was going about his usual routine when he decided to get a health check-up. He had not noticed any major symptoms, and his weight did not suggest an obvious health concern. But his blood tests revealed elevated blood glucose and further testing confirmed type 2 diabetes.

The diagnosis meant rethinking his daily habits, from what he ate to how regularly he exercised and monitored his health. It also challenged the assumption that diabetes is primarily a concern for people who are visibly overweight.

His experience highlights why diabetes risk among South Asians cannot always be judged by appearance or body weight alone.

A GROWING BURDEN

The issue has significant implications for Bangladesh. According to the International Diabetes Federation's 2025 Diabetes Atlas, an estimated 13.9 million adults aged 20–79 were living with diabetes in the country in 2024. The age-standardised prevalence was 13.2%, while an estimated 39.1% of people with diabetes remained undiagnosed. The number is projected to reach 23.1 million by 2050.

The large undiagnosed population makes early detection particularly important.

However, identifying people at risk can be challenging when conventional indicators, such as body weight, do not tell the whole story.

Professor Dr F M Siddiqui, Vice-Chancellor of Bangladesh Medical University (BMU), says diabetes can develop for years without noticeable symptoms.

"Initially, the disease presents no symptoms and can develop inside the body for many years without the patient being aware of it," he says.

He emphasises that early detection allows people to take preventive measures before complications develop. "If we identify the disease early, we can initiate several interventions, and medication may not even be necessary in some cases. Before medication, we have to have a lifestyle modification."

LOWER BMI DOES NOT MEAN LOWER RISK

BMI measures weight in relation to height, but it cannot distinguish between fat and muscle or indicate where fat is stored. Research suggests that South Asians may have a higher proportion of body fat and less lean mass than people of European ancestry at a similar BMI.

Prof Dr M Saifuddin, Professor of Endocrinology at Dhaka Medical College and General Secretary of the Bangladesh Endocrine Society, says South Asians tend to accumulate more abdominal and visceral fat, even at relatively lower body weights.

"They also generally have lower muscle mass, greater insulin resistance and increased genetic susceptibility," he says.

"Consequently, Bangladeshis may develop type 2 diabetes at a BMI considered normal in other populations. This means body weight alone cannot accurately reflect diabetes risk."

A 2024 study published in Nature Metabolism, known as the GlasVEGAS study, examined how weight gain affected the metabolic health of South Asian and white European men. Researchers followed 14 South Asian and 21 white European men through a four-to-six-week period of overfeeding.

Although both groups gained a similar amount of weight, South Asian participants experienced a 38% reduction in insulin sensitivity, compared with 7% among white European participants. They also gained less lean tissue.

The study provides experimental evidence that modest weight gain can have different metabolic effects across populations. However, its small sample and male-only participants mean the findings should not be treated as representative of all South Asians.

Waist circumference can provide additional information about abdominal fat and metabolic risk. According to a 2023 regional consensus, Bangladesh's recommended action points are a BMI of 23 kg/m² for overweight and 25 kg/m² for obesity. Waist circumferences of 90 centimetres for men and 80 centimetres for women are indicators of central obesity. These are risk-assessment thresholds, not diagnostic criteria for diabetes.

Prof Saifuddin explains that excess abdominal fat can interfere with the body's ability to use insulin.

"Excess abdominal fat releases inflammatory substances and fatty acids that interfere with normal insulin action. As a result, body cells become less responsive to insulin, causing blood glucose levels to rise," he says.

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ILLUSTRATION: FERDOUS MOMO



Diabetes management requires a comprehensive approach to protect vital organs and prevent long-term complications. Maintaining blood glucose, blood pressure and cholesterol within recommended ranges is essential to reducing the risk of heart disease, stroke, kidney damage and vision loss.

A balanced, fiber-rich diet containing vegetables, whole grains, lean proteins and healthy fats, combined with regular physical activity can improve insulin sensitivity and support healthy body weight. Even losing 5–10% of excess body weight can significantly improve metabolic health.

Medication adherence is equally important. Patients should never skip doses or discontinue prescribed medication without consulting their doctors. Regular monitoring of blood glucose and HbA1c levels, kidney function and cholesterol, along with annual comprehensive eye and foot examinations, helps detect complications at an early stage.

Avoiding smoking and seeking professional medical advice instead of relying on unverified health information are also essential. Ultimately, effective diabetes management goes beyond controlling blood sugar. Consistent lifestyle modifications, appropriate medication, regular health screenings and timely medical intervention are crucial to protecting vital organs and maintaining long-term health.

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Diabetes is not merely a physical condition; it also carries a significant psychological burden. The relationship between diabetes and mental health is bidirectional: the constant demands of managing the disease can cause emotional distress while anxiety and depression can make blood sugar control more difficult. Daily responsibilities, such as monitoring glucose levels, taking medication, regulating food intake and attending medical appointments can contribute to diabetes distress, anxiety and clinical depression.

According to global estimates, around 77% of people with diabetes experience mental health challenges. People living with diabetes are also twice as likely to develop depression compared to those without the condition. Diabetes distress is particularly prevalent, affecting more than 60% of people with type 2 diabetes and over 70% of those with type 1 diabetes.

The psychological impact can vary across age groups and genders. Adolescents often face additional emotional challenges as they navigate the demands of disease management alongside social and developmental pressures. Women may also experience higher rates of anxiety and depression following diagnosis than men. These challenges highlight why diabetes care must extend beyond blood sugar management to include emotional well-being, psychological support and timely mental health interventions.

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Diabetes treatment has evolved significantly over the past decade, shifting from simply controlling blood glucose to protecting overall health and preventing complications. Treatment is now more personalised, with doctors considering patients' age, weight, kidney function, heart health and lifestyle.

Newer medicines, including GLP-1 receptor agonists and dual GIP/GLP-1 receptor agonists, have transformed type 2 diabetes management by improving glucose control, reducing appetite and supporting weight loss. Some also offer cardiovascular and kidney benefits. Meanwhile, continuous glucose monitoring (CGM), insulin pumps and smart applications enable more precise monitoring and personalised care, although affordability remains a challenge.

Despite these global advances, Bangladesh faces barriers including high treatment costs, limited awareness, late diagnosis and inadequate access to trained professionals and modern technologies. The International Diabetes Federation estimated that 13.9 million Bangladeshi adults had diabetes in 2024, with approximately 39% undiagnosed.

Our priority must be early detection, affordable essential medicines, better primary healthcare and wider access to evidence-based modern treatments.

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Managing diabetes requires more than medication; food habits and lifestyle changes play an equally important role. A balanced diet, regular physical activity, maintaining a healthy weight, adequate sleep and stress management can help control blood glucose levels and in some cases reduce the need for medication under medical supervision.

People with diabetes do not need to give up rice, sweets or their favourite foods completely. Instead, they should practise moderation and portion control. Since rice is a staple in Bangladesh, patients can reduce white rice portions rather than eliminate it, include more seasonal vegetables such as cabbage, beans and spinach and add protein-rich foods such as fish, eggs, chicken and lentils. Whole grains and brown rice can also be considered when affordable and practical.

Sleep deprivation, stress and irregular meal timings can negatively affect blood glucose control by influencing hormones and increasing insulin resistance. Patients should prioritise six to eight hours of sleep, regular exercise, balanced meals, hydration and stress-management practices.

Sustainable lifestyle changes are more effective than temporary restrictive diets. Gradual adjustments, realistic goals and family support can help people maintain healthy habits.

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