

How to know you have Type 5 diabetes

The Health ministry has no official prevalence figures for Type 5 diabetes, but researchers say early findings are alarming. A new study across seven hospitals, found that 10 percent of diabetic patients with low Body Mass Index (BMI below 18.5 kg/m²) had this distinct form of diabetes.

BY TONNY ABET
& SYLVIA NAMAGEMBE

After years of controversy, scientists, in a consensus meeting in India last year, proposed Type 5 diabetes as the name for a form of diabetes distinct from the common Type 1 and Type 2.

Their proposal was subsequently formalised during the International Diabetes Federation (IDF) World Diabetes Congress the same year, 2025.

Prof Marcel Andrew Otim, the consultant physician at Nakasero Hospital and researcher, says Type 5 diabetes is linked to malnutrition.

"When you are malnourished, you lack some protein radicals, particularly methionine, which are very important in detoxifying cyanide radicals, linamarin and lotaustralin, which can damage our body tissues," he explains.

Prof Otim adds: "These radicals are largely found in cassava and corn. The protein can be found in meat, beans, fish and so on, a problem common in poverty situations."

He says the proteins help protect beta cells in the pancreas against destruction by the harmful radicals. The pancreas is an organ in the body which produces the essential hormone, insulin, required for the regulation of blood sugar.

"There's also an element of malabsorption, knowing that the pancreas also makes enzymes for digestion," Prof Otim adds.

The Ministry of Health has no official prevalence figures for Type 5 diabetes,



A patient gets random blood sugar test during a medical outreach in Kiteezi, Wakiso District, on October 30, 2025. There is a general increase in cases of diabetes in the country. PHOTO/TONNY ABET

but researchers say early findings are alarming.

A new study by the Uganda Diabetes Association, led by Dr Davis Kibirige across seven hospitals, found that 10 percent of diabetic patients with low Body Mass Index (BMI below 18.5 kg/m²) had this distinct form of diabetes, underscoring its presence in the country despite the absence of national prevalence data.

Experts stress that malnutrition during pregnancy can impair a baby's pancreatic development, predisposing them to the condition later in life, and continued poor nutrition in childhood and

adulthood worsens the risk.

Dr Kibirige, a diabetologist and researcher at Uganda Virus Research Institute (UVRI), sheds more light on the new type of diabetes.

He says the condition known as Type 5 diabetes is distinct from other forms such as Type 1 and Type 2 diabetes, with hallmarks tied to undernutrition or reduced food intake before conception, during pregnancy and extending through childhood, adolescent and adulthood stages.

"Type 5 diabetes mainly develops in individuals who experienced poor nu-

trition before birth or during early life, and this worsens if they grow up in famine-stricken areas or undernutrition caused by other factors," Dr Kibirige says.

He adds: "Some internal organs never develop properly leaving them with life-long insulin deficiency. This condition cannot be reversed or managed with lifestyle changes such as diet and exercise. These lifestyle changes are essential mainly in the management of Type 2 diabetes that develops due to overweight or obesity, but this type causes permanent damage."

Dr Theresa Piloya, a senior lecturer and specialist in childhood diabetes at Makerere University Medical School, explains that Type 5 patients do not show auto-antibodies in laboratory blood tests and rarely develop diabetic ketoacidosis, a common emergency in Type 1 cases.

Ultrasound scans also show a structurally normal pancreas, distinguishing it from Type 3c diabetes caused by pancreatic damage.

"Patients are typically underweight and stunted, with birth weights below 2.5 kilograms and BMI under 18.5. The only known risk factor is persistent undernutrition, whether during pregnancy, childhood or adulthood," she notes.

Dr Piloya adds: "That's why we say malnutrition in a mother will have long-term effects on the child, where their imprinting will be affected, because I will have a small organ like the pancreas, compared to my body when I grow up, and I start to gain some weight, my body will not support that. Already I have a

small pancreas, it cannot support that big body, so I will stop producing enough insulin because it's larger than what the body was programmed to do."

Signs and symptoms

Prof Otim says diabetes can cause wasting, but the wasting caused by malnutrition-related diabetes is very typical.

"These patients are usually young people; they tend to progress to severe wasting, they experience hair changes, and the hair becomes brownish," he says.

Prof Otim adds: "And the skin also becomes lighter in complexion, flaky and actually you can be able to see the evidence of malnutrition on the skin."

Health experts note that Type 5 patients exhibit almost the same symptoms seen in other forms of the disease, such as frequent urination, excessive thirst, preference for very sweet drinks, fatigue, pricking sensations in the feet, and wounds that heal slowly.

"However, what sets them apart is their profile, where they are usually young adults under 30, chronically underweight with BMI below 18kg/m², and often stunted, and most have a personal history of severe malnutrition," Dr Kibirige observes.

He adds: "Screening underweight and stunted young adults presenting with these symptoms is critical to detecting Type 5 diabetes early. Nutrition should be prioritised at all stages of life. By improving maternal and early childhood nutrition, we can reduce the risk of adults developing this severe form of diabetes."

PREVENTION AND TREATMENT

Information from the International Diabetes Federation (IDF) indicates that managing diabetes in resource-poor settings requires context-specific strategies.

"For Type 5 diabetes, treatment must focus not only on glucose control but also on addressing nutritional deficits. Management may include: Nutritional support to correct long-term undernutrition, oral diabetes medications to stimulate insulin secretion and low-dose insulin therapy, where appropriate," the Federation prescribes.

According to IDF, standard treatments for Type 1 or Type 2 diabetes may not be effective for

people with Type 5 diabetes.

"As the root cause is insulin deficiency linked to undernutrition, a tailored treatment plan is essential. Without proper care, there is an increased risk of complications such as nerve damage, kidney disease and vision problems," IDF states.

On prevention, IDF says it involves addressing the root causes of chronic undernutrition and health inequality.

"Key areas of prevention include: Improving maternal nutrition and reducing diabetes risk in early life, strengthening child nutrition programmes, ensuring food security in vulnerable regions and reducing poverty and infection risk," IDF states.