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Malnutrition-Related Diabetes Officially Named 'Type 5'

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Malnutrition-related diabetes, distinct from both type 1 and type 2, has now been officially recognized and named "type 5 diabetes."

The vote to endorse the category took place on April 8, during the International Diabetes Federation's (IDF's) World Diabetes Congress, held in Bangkok, Thailand. In January 2025, a panel met in India to draft a consensus statement about the condition, due to be published soon, Meredith Hawkins, MD, professor of medicine at Albert Einstein College of Medicine, Bronx, New York, told *Medscape Medical News.*

"Malnutrition-related diabetes has historically been vastly underdiagnosed and poorly understood...The IDF's recognition of it as 'type 5 diabetes' is an important step toward raising awareness of a health problem that is so devastating to so many people," Hawkins said.

(The American Diabetes Association's classification defines type 1 and type 2, followed by specific types due to other causes such as single genes, exocrine pancreatic diseases such as cystic fibrosis, or drug/chemical-induced diabetes. Gestational diabetes is listed separately.)

Malnutrition-related diabetes was first described in Jamaica in 1955. It is seen most commonly in young men in low- and middle-income countries (LMICs) who have a body mass index < 19. They are often misdiagnosed as having type 1 diabetes, but they don't develop ketonuria or ketosis despite high blood glucose levels and high insulin requirements.

In 1985, the World Health Organization officially classified "malnutrition-related diabetes mellitus" as a distinct diabetes type, but then in 1999 dropped the category, citing a lack of evidence that malnutrition or protein deficiency causes diabetes.

Hawkins became aware of malnutrition-related diabetes in 2005 while teaching at global health meetings. In 2010, she founded Einstein's Global Diabetes Institute to study it. In 2022, she and her colleagues published findings from state-of-the-art metabolic testing in 73 Asian Indian men, including 20 with what is now called "type 5 diabetes" following exclusion of all other known forms of diabetes by immunogenetic analysis. Another 15 had type 1 diabetes, 13 had type 2 diabetes, 16 were lean without diabetes, and nine were overweight without diabetes.

Among the findings were lower total insulin secretion in the "type 5" group than in both the lean group without diabetes and the T2D group, significantly lower endogenous glucose production and significantly higher glucose uptake in the type 5 group than in the T2D group, and significantly lower visceral adipose tissue and hepatocellular lipids in the type 5 group than in the T2D group.

These findings contradict the previous belief that malnutrition-associated diabetes was associated primarily with insulin resistance. "It turns out people with this form of diabetes have a profound defect in the capacity to secrete insulin, which wasn't recognized before. This finding has revolutionized how we think about this condition and how we should treat it," Hawkins said.

She told *Medscape Medical News* it's important to differentiate type 5 from type 1 diabetes because giving too much insulin can rapidly prove fatal. Although there aren't clear guidelines yet for treating type 5, some data suggest that very small amounts of insulin combined with oral agents may be the most effective.

And, Hawkins added, "I suspect that their nutrition should include much higher amounts of protein and lower amounts of carbohydrates, plus attention to deficient micronutrients…but this needs to be carefully studied now that there is global will and an official mandate from [the International Diabetes Federation] to do so."

Hawkins lectures on this topic often at universities in LMICs. "They frequently ask, 'Why is it we see so much of it and yet never read about it in textbooks?' Turns out those textbooks are written in the West, where it is not encountered. This will change soon…I'm excited that the tide is turning on a condition that is so prevalent among the world's poor yet so neglected in Western literature."

A working group has been tasked with developing formal diagnostic and therapeutic guidelines for type 5 diabetes over the next 2 years.

Hawkins had no disclosures.

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