

**MALNUTRITION-RELATED DIABETES MELLITUS (MRDM) – A DISTINCT ENTITY RECOGNIZED AS "TYPE 5 DIABETES" AMIDST ONGOING DEBATE**

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*Malnutrition-related diabetes, or type 5 diabetes mellitus (T5DM), is a neglected metabolic disease that develops from persistent undernutrition in the early stages of development. In contrast to Type 1 and Type 2 diabetes, T5DM is caused by decreased insulin production and impaired pancreatic growth rather than insulin resistance or autoimmune destruction. The illness mostly affects underprivileged people in low- and middle-income nations where poverty and food insecurity are pervasive. Inadequate maternal nutrition, recurrent childhood infections, and long-term nutritional deficiencies are its primary causes. Weight loss, excessive thirst, frequent urination, and exhaustion are symptoms that are similar to those of Type 1 diabetes and frequently appear in people with very low BMI. Due to overlapping characteristics with other forms of diabetes and the lack of established criteria, diagnosis is still difficult. Because of this, a lot of cases are incorrectly classified, which results in unsuitable treatment. Results indicate that customized glycemic control and nutritional rehabilitation are more important for successful management than just traditional diabetes treatment. Overall, T5DM highlights the critical need for more precise diagnostic guidelines and robust public health interventions by demonstrating the close relationship between malnutrition, socioeconomic inequality, and*

*poor health outcomes.*

### **Introduction**

Kind 5 diabetes mellitus (T5DM) is a unique kind of severe insulin-deficient diabetes that results from persistent undernutrition, especially in infancy and adolescence. It was recently reclassified as malnutrition-related diabetes. T5DM is not autoimmune-mediated or largely caused by insulin resistance, in contrast to type 1 and type 2 diabetes. Rather, it is caused by sustained dietary deficits that affect pancreatic growth and interfere with insulin signaling pathways. In order to better represent the etiology and clinical characteristics of T5DM, this commentary suggests that the term "malnutrition-related diabetes" be formally adopted as the nomenclature. In low- and middle-income nations, where access to advanced diabetic treatment is restricted and malnutrition is still pervasive, the illness is disproportionately common. For the purpose of creating suitable diagnostic standards, treatment plans, and public health regulations, T5DM must be accurately identified and classified. Instead of addressing insulin dependency, treatment usually concentrates on nutritional rehabilitation and affordable oral antidiabetic medications. The creation of a separate category for malnutrition-related diabetes would facilitate focused research, enhance patient outcomes, and increase awareness of the disease's increasing prevalence in susceptible groups. The global health community is urged by this statement to acknowledge malnutrition-related diabetes as a serious metabolic condition that needs immediate management in environments with limited resources.<sup>2</sup>

In my research Type 5 diabetes, formerly recognized as malnutrition-related diabetes mellitus (MRDM), is a unique type of diabetes associated with long-term undernutrition and health inequities. This condition predominantly impacts individuals in low- and middle-income countries (LMICs), particularly in South-East Asia and sub-Saharan Africa.

### **Causes**

If I discuss about the cause Type 5 diabetes happens when someone experiences long-term undernutrition, especially as a child or teenager. If a mother does not get enough nutrition, or if a child faces frequent infections and ongoing food shortages, the pancreas may not develop properly. This makes it harder for the body to produce insulin. Unlike type 1 diabetes, which is caused by the immune system attacking the pancreas, or type 2 diabetes, which is linked to insulin resistance, type 5 diabetes is not caused by the immune system. Instead, it results from the pancreas not making enough insulin because it did not develop fully. This mainly focus on poverty on health outcomes, particularly in communities where people face lifelong nutritional deficiency. Refugees and migrants from resource-poor settings may also be at risk, even after resettling in high-income countries.<sup>3</sup>

## Symptoms

If I talk about symptoms of this diabetes type 5 usually affecting teenager and young adults, type 5 diabetes can have symptoms that are similar to those of type 1 diabetes such as:

- Weight loss
- Excessive thirst
- Frequent urination
- Fatigue
- Elevated glucose levels

In contrast to type 1 diabetes, individual with type 5 diabetes frequently have a body mass index below 19kg/m<sup>2</sup> and do not exhibit symptoms of autoimmune beta cell destruction.

**Diagnosis** There were no accepted diagnostic standards for type 5 diabetes until recently. As a result, many people received therapies that did not address their unique needs and were mistakenly diagnosed with type 1 or type 2 diabetes. Poor

results and further entrenched disparities in care resulted from this.

The main thing to remember in discussing malnutrition-related diabetes mellitus (MRDM), the article/review points out that although MRDM has historically been identified as a separate type associated with low BMI and protein-energy malnutrition, its classification is debatable because of diagnostic ambiguities and overlap with other types of diabetes. The review indicates that reclassifying MRDM as "Type 5 diabetes" is not well supported by existing research and highlights that MRDM is currently thought to be unreliable as a solitary indicator of malnutrition producing diabetes.

The primary problem is the diagnostic uncertainty and overlap with other kinds of diabetes associated with the MRDM/Type 5 classification. Present position: MRDM is not a reliable diagnostic of diabetes brought on by starvation. Evidence status: There is currently little evidence to support the notion of reclassifying MRDM as "Type 5 diabetes." Practical takeaway: Unless more reliable, evidence-based criteria are available, clinicians and researchers should exercise caution when classifying diabetes as MRDM/Type 5; instead, they should take into account broader etiologies and employ traditional diabetes classifications.

## Treatment

Context-specific strategies are needed to manage diabetes in settings with limited resources. Treatment for type 5 diabetes must address nutritional deficiencies in addition to controlling blood sugar levels. Some examples of management are:

- nutritional assistance to address chronic undernutrition.
- oral diabetes drugs to increase the release of insulin.
- low-dose insulin treatment when necessary.

People with type 5 diabetes may not benefit from standard treatments for type 1 or type 2 diabetes. A customized treatment plan is necessary because the underlying cause is insulin deficiency associated with undernutrition. Complications like kidney disease, nerve damage, and vision issues are more likely to occur in the absence of appropriate care. Life expectancy may be significantly reduced if the illness is not correctly diagnosed and treated.

**Prevention**

Addressing the underlying factors of chronic undernutrition and health disparities is crucial in preventing type 5 diabetes. Important prevention strategies consist of:

3. Enhancing maternal nutrition and minimizing early life diabetes risk.
4. Bolstering nutrition programs for children.
5. Securing food availability in at-risk areas.
6. Mitigating poverty and the likelihood of infections.

Implementing early nutritional strategies and health policies that improve access to primary care can help decrease the occurrence of type 5 diabetes and aid in reducing the global diabetes burden.

**Result**

Kind 5 diabetes is a kind of diabetes caused by starvation that mostly affects the poor. It is frequently misdiagnosed due to ambiguous diagnostic criteria. While prevention focuses on enhancing nutrition and lowering poverty, effective management necessitates combining customized diabetes treatment with nutritional rehabilitation.

The results show that chronic undernutrition, which impairs pancreatic function and lowers insulin production, is the main cause of Type 5 Diabetes Mellitus. Due to its overlap with Type 1 and Type 2 diabetes, the condition is still challenging to diagnose and disproportionately affects underprivileged populations. Combining nutritional rehabilitation with customized glycemic management is essential for treatment success. The results highlight the urgent need for better public health programs, uniform diagnostic standards, and global recognition of T5DM as a distinct subtype of diabetes.

**Conclusion**

Chronic undernutrition is the cause of type 5 diabetes mellitus, a unique type of the disease that results in decreased insulin production and compromised pancreatic function. Its predominance in underprivileged groups emphasizes the close connection between metabolic illness, poverty, and malnutrition. Due to frequent misdiagnosis and the lack of established criteria, successful care must combine nutritional rehabilitation with personalized glycemic control. Preventing this illness requires strengthening public health initiatives, such as guaranteeing food security and increasing nutrition for mothers and children. In order to improve outcomes and promote global health equity, T5DM must be acknowledged as a distinct and important health concern.<sup>5</sup>

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