Diabetes Research: Open Access

Editorial

DOI: https://doi.org/10.36502/2025/droa.6195

Proposal of Type 5 Diabetes from IDF for Global Awareness

Hiroshi Bando[1,2iD*]

[1]*Medical Research/Tokushima University, Tokushima, Japan*

[2]*Japan Low Carbohydrate Diet Promotion Association, Kyoto, Japan*

Corresponding Author: **Hiroshi Bando** ORCID iD

Address: Tokushima University /Medical Research, Nakashowa 1-61, Tokushima 770-0943, Japan; Email: pianomed@bronze.ocn.ne.jp

Received date: 14 October 2025; **Accepted date**: 02 December 2025; **Published date**: 08 December 2025

Citation: Bando H. Proposal of Type 5 Diabetes from IDF for Global Awareness. Diab Res Open Access. 2025 Dec 08;6(1):24-27.

Copyright © 2025 Bando H. This is an open-access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium provided the original work is properly cited.

Abstract

Diabetes has been studied and managed internationally by the American Diabetes Association (ADA), the European Association for the Study of Diabetes (EASD), the Japan Diabetes Association (JDA), and so on. The International Diabetes Federation (IDF) proposed “type 5 diabetes (T5D)” in April 2025. T5D mainly develops due to chronic malnutrition during childhood, particularly in low-income countries, affecting an estimated 20 to 25 million people. It shows low body weight and insulin deficiency, previously known as malnutrition-related diabetes (MNRD). Its novel perspective typing will contribute to more awareness and discussion for medicine, education, public health, the economy, and social factors such as poverty and nutritional disparities.

Keywords

Type 5 Diabetes, Malnutrition-Related Diabetes, Diabetes Classification, Nutritional Deficiency and Pancreatic Development, Global Diabetes Awareness and Guidelines

Editorial

Diabetes issues have been internationally managed for years. They include the American Diabetes Association (ADA), the European Association for the Study of Diabetes (EASD), the Japan Diabetes Association (JDA), and so on. Meanwhile, the International Diabetes Federation (IDF) had a meeting in April 2025 and officially recognized diabetes associated with nutritional deficiencies as "type 5 diabetes (T5D)" [1]. This is an important development that views diabetes from a different perspective than previous classifications. This article introduces the topic of T5D. However, this concept has not yet been included in the ADA, EASD, or JDA.

T5D develops as a result of chronic malnutrition during childhood and adolescence. It is particularly prevalent in low- and middle-income countries, with an estimated 20 to 25 million people worldwide affected. Why was it not classified until now? This condition was previously known as malnutrition-related diabetes (MNRD) [2]. However, it was often misdiagnosed as type 1 or type 2, leading to many cases of inappropriate treatment being undertaken. Diagnosis is rather difficult for T5D or MNRD. Unlike type 1, patients are not completely unable to secrete insulin [3]. Other cases were found where insulin injections are not necessary, and it may be possible to treat with oral hypoglycemic agents (OHAs) [4]. From such various cases, appropriate diagnosis and treatment

seem to be not simple.

This classification is expected to promote standardization of diagnostic criteria and treatment strategies. Education and awareness-raising are key factors behind this. The new classification will help understand the diversity of diabetes and raise awareness of underlying social factors, such as poverty and nutritional disparities. In other words, it is expected to spark active discussion not only in clinical settings but also in medical education and public health settings. Several types of diabetes mellitus have been known [5]. They include type 1, type 2, gestational diabetes (usually develops during the second or third trimester of pregnancy), neonatal diabetes (developing early in life, some of them have genetic changes), maturity onset diabetes of the young (MODY) (occurring later in life with a link to genetic changes), type 3c (caused by damage to the pancreas, such as operation), and cystic fibrosis-related diabetes (by the age of 40 years) [6].

Concerning type 5 diabetes (T5D), it is a newly designated form that is linked to malnutrition, usually during early life [7] (**Table-1**). It has been more common in poorer districts and countries. This disease is most prevalent in low- and middle-income countries, particularly in Asia and Africa. Patients with T5D are characterized by their low body weight and shortage of insulin. However, the insulin shortage is not from the immune system. As to the etiology, the body could not receive proper nutrition during childhood for raising normal pancreas development. By rodent studies, low-protein nutrition during pregnancy or adolescence may bring poor pancreas development.

Table-1: Diabetes types by IDF

Type-1 Diabetes	Type-2 Diabetes	Gestational Diabetes	Monogenic Diabetes	Type-5 Diabetes
Autoimmune Etiology	Insulin-Eesistance Lifestyle-related	Onset During Pregnancy	Rarely Discovered	Recently Proposed
Requires Insulin Treatment	Requires Weight Reduction	Resolves After Delivery	Includes MODY as Known Until Now	Malnutrition Related Diabetes (MNRD)

When the pancreas is smaller, it raises the risk for several types of diabetes. Originally, it means fewer reserves of insulin-producing cells. The term “diabetes” covers the umbrella for various conditions resulting in hyperglycemia, but the underlying background may vary broadly. Clarifying the specific diabetes types seems to be crucial for giving proper treatment methods. As medical science has evolved, classification of diabetes will evolve. To recognize the presence of malnutrition-related diabetes as T5D will stimulate the progress of discussion. Consequently, the current step will provide better globally required understanding and applicable medical care, particularly in lower-/middle-income districts and countries.

We have to understand the different standpoints in diabetic practice, research, associations, and public official organizations. The current term "type 5 diabetes" has been proposed by the IDF, which is the international organization for developing awareness of diabetes widely [8]. In contrast, the ADA in the US has been the most authoritative association worldwide, which has published annual clinical guidelines with research papers [9]. The ADA is likely to be the authority for the standard announcement for medical diagnosis and treatment. On the other hand, the IDF has been primarily engaged in various international awareness-raising for diabetes issues [10]. It is always in cooperation with the activities of the World Health Organization (WHO) and puts its emphasis on giving necessary support and policy recommendations for developing and low-income countries. ADA and IDF have different roles. The ADA has the role of announcing detailed management for therapy and clinical research of diabetes, mainly for medical researchers, diabetologists, and primary care physicians. Then, ADA guidelines have been broadly utilized for actual clinical settings worldwide.

Actual recommended management may vary for T5D by IDF and/or MNRD by ADA [11]. In Japan, JDS has kept a close eye on current international issues and on formulating adequate policies in response to Japan’s clinical situation. Until this time, ADA and JDS

have not officially adopted the current diagnostic medical term of T5D. If international discussion and research progress more, the term T5D will be accepted and used for a novel type as well. However, the name has been regarded as an educational term at present. From the mentioned above, we must pay attention to the nutritional situation, function, and etiology related to various diabetic situations in infants, children, adults, and the elderly [12]. Elderly people and those with eating disorders have been found to be in an impaired condition where malnutrition and abnormal glucose metabolism are linked. Thus, diabetologists, primary care physicians, and all related co-medical staff in the medical team need to have adequate perspectives and make comprehensive judgments.

It is indeed true that diabetes has a common fact of high blood glucose, but the types differ greatly depending on the cause and the state of the body. From the current topic of type 5 diabetes, underlying backgrounds are related to nutritional status, growth, and development [13]. As research progresses with understanding their details, more diabetic patients can receive adequate and proper treatment, leading to well-being in their lives.

Conflict of Interest

The authors have read and approved the final version of the manuscript. The authors have no conflicts of interest to declare.

Funding

There was no funding received for this paper.

References

[1] International Diabetes Federation (IDF). IDF launches new type 5 diabetes working group. IDF. 2025 Apr 15. Available from: https://idf.org/news/new-type-5-diabetes-working-group/

[2] Accili D, Deng Z, Liu Q. Insulin resistance in type 2 diabetes mellitus. Nat Rev Endocrinol. 2025 Jul;21(7):413-26. [**PMID**: 40247011]

[3] Kim YK, Won KC, Sussel L. Glucose metabolism partially regulates β-cell function through epigenomic changes. J Diabetes Investig. 2024 Jun;15(6):649-55. [**PMID**: 38436511]

[4] Sharma V, Patial V. Insights into the molecular mechanisms of malnutrition-associated steatohepatitis: A review. Liver Int. 2024 Sep;44(9):2156-73. [**PMID**: 38775001]

[5] Beall C. Type 5 diabetes is a newly recognised disease – here are all the types of diabetes you need to know about. The Conversation. 2025 May 13. Available from: https://www.downtoearth.org.in/health/type-5-diabetes-is-a-newly-recognised-disease-here-are-all-the-types-of-diabetes-you-need-to-know-about

[6] Magliano DJ, Boyko EJ; IDF Diabetes Atlas 10th edition scientific committee. IDF DIABETES ATLAS [Internet]. 10th edition. Brussels: International Diabetes Federation; 2021. Available from: https://www.ncbi.nlm.nih.gov/books/NBK581934/

[7] Wadivkar P, Thomas N, Jebasingh F, Bacot-Davis VR, Maini R, Hawkins M. Undernutrition-Associated Diabetes Mellitus: Pathophysiology of a Global Problem. Physiology (Bethesda). 2025 Sep 1;40(5):0. [**PMID**: 40049652]

[8] Diabetes Professional Care. Type 5 diabetes: a new chapter in global diabetes care. Diabetes Professional Care. 2025 Jun 06. Available from: https://www.diabetesprofessionalcare.com/news/type-5-diabetes-new-chapter-global-diabetes-care

[9] American Diabetes Association Professional Practice Committee. 1. Improving Care and Promoting Health in Populations: Standards of Care in Diabetes-2025. Diabetes Care. 2025 Jan 1;48(1 Suppl 1):S14-S26. [**PMID**: 39651974]

[10] Ingenhoff R, Munana R, Weswa I, Gaal J, Sekitoleko I, Mutabazi H, Bodnar BE, Rabin TL, Siddharthan T, Kalyesubula R, Knauf F, Nalwadda CK. Principles for task shifting hypertension and diabetes screening and referral: a qualitative study exploring patient, community health worker and healthcare professional perceptions in rural Uganda. BMC Public Health. 2023 May 12;23(1):881. [**PMID**: 37173687]

[11] Elkomy S, Jackson T. WHO non-communicable diseases Global Monitoring Framework: Pandemic resilience in sub-Saharan Africa and Low-income Countries. Socio-Econ Plan Sci. 2024;95:102043.

[12] Zhang T, Qin J, Guo J, Dong J, Chen J, Ma Y, Han L. Prevalence and influencing factors of malnutrition in

diabetic patients: A systematic review and meta-analysis. J Diabetes. 2024 Oct;16(10):e13610. [**PMID**: 39364802]

[13] Prajitno JH, Sutanto H. Type 5 diabetes as a growing malnutrition driven health crisis in low and middle income countries. J Diabetes Metab Disord. 2025 Jul 10;24(2):162. [**PMID**: 40657327]