

## Decoding the Mystery of Young-Onset Diabetes in Bangladesh: How to Translate Observations into Clinical Practice?

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### Abstract

Diabetes in young, especially in South Asia, often does not fit into conventional categories, leading to diagnostic and therapeutic challenges. The scarcity of evidence and limited healthcare resources compel physicians to adopt an empirical approach, which, at least in some cases, may not be appropriate for an individual patient. Over the past decade, the ‘Study on Obesity and Diabetes in Young’ (SODY) group has investigated various aspects of this phenomenon. With our findings now available, we aim to synthesize the results and translate them into clinical practice.

Our research indicates that the majority of young adults (aged 25-34 years) with diabetes exhibit characteristics consistent with obesity-related type 2 diabetes (T2D), albeit with distinct disease trajectories and varying complication rates in comparison to older adults. These individuals tend to benefit more from therapies targeting insulin resistance and metabolic dysfunction. However, in adolescents (aged 10-18 years) and early adults (aged 19-24 years), it is critical to assess for potential autoimmune factors, pancreatic pathology, and, in selected cases, monogenic forms of diabetes. Notably, our findings show several rare variants in MODY-related genes that have not been frequently reported in the literature, alongside a relative absence of more commonly documented variants.

An exceptional subset exists in young people with diabetes, which can be called ‘non-autoimmune, non-obese, lean youth-onset diabetes’. This group has no secondary causes of diabetes, such as pancreatic or endocrine pathology. It is characterized by more prominent beta-cell dysfunction and only a modest increase in insulin resistance. It remains unclear whether this variety is related to malnutrition, low birth weight, genetic predisposition, or other as-yet unidentified factors. [*J Assoc Clin Endocrinol Diabetol Bangladesh*, 2025;4(Suppl 1): S9]

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