

How to Differentiate Type 1 Diabetes (T1D) from Type 2 Diabetes (T2D) in Adults

Misclassification occurs in up to **40% of adults who develop T1D after age 30** with the majority initially misdiagnosed as T2D¹⁻³

Misdiagnosis may lead to complications such as **DKA and delays** in commencing appropriate treatment (e.g., insulin therapy)^{3,4}

Prevalence

Prevalence of T1D⁵

~9.5 million

people are estimated to be living with T1D worldwide; over 75% are more than 20 years old (2025)⁵



Prevalence of T2D⁶

~90% of the 589 million adults

(aged 20–79) living with diabetes globally have T2D (2024)⁶

Pathophysiology

T1D¹

Due to **autoimmune beta-cell destruction**, usually leading to severe insulin deficiency¹



T2D¹

Due to **relative (rather than absolute) insulin deficiency and peripheral insulin resistance** in most (i.e., decreased biological response or sensitivity to insulin)¹

The AABCC approach

proposed by the ADA Guidelines is a clinical tool useful for distinguishing diabetes types based on key clinical characteristics:¹

T1D		T2D
<p>For individuals under 35 years of age, consider T1D¹</p> <p>Incidence is highest in children and can frequently occur in adults⁷</p>	<p>AGE¹</p>	<p>Typically diagnosed in individuals over 35 years of age¹</p> <p>Commonly occurs in adults and is more likely in individuals with a family history of T2D or other risk factors (e.g., obesity)⁸</p>
<p>Personal or family history of autoimmune diseases or syndromes¹</p> <p>Persistent presence of ≥2 islet autoantibodies is a near-certain predictor of clinical T1D¹</p> <p>Clinical T1D is defined by hyperglycemia and the presence of ≥1 islet autoantibodies¹</p>	<p>AUTOIMMUNITY¹</p>	<p>Autoantibodies are generally absent. T2D is associated with insulin deficiency of unclear etiology and often involves insulin resistance¹</p>
<p>Individuals with lower BMI (<25 kg/m²) and unintentional weight loss, assess for T1D¹</p>	<p>BODY HABITUS¹</p>	<p>Individuals with increased BMI (≥25 kg/m²), absence of weight loss¹</p>
<p>E.g., family history of T1D¹</p>	<p>BACKGROUND¹</p>	<p>Often associated with strong genetic predisposition or family history of T2D in first-degree relatives¹</p> <p>Common in certain racial and ethnic subgroups (e.g., African American, Native American, Hispanic/Latino, and Asian American)¹</p>
<p>E.g., uncontrolled glucose levels with non-insulin therapies¹</p>	<p>CONTROL¹</p>	<p>Insulin resistance, which may improve with weight loss, exercise, and/or pharmacologic treatment of hyperglycemia¹</p>
<p>E.g., treatment with immune checkpoint inhibitors for cancer can cause T1D¹</p>	<p>COMORBIDITIES¹</p>	<p>Common in individuals with hypertension or dyslipidemia¹</p>

In clinical practice, understanding how to differentiate T1D from T2D is essential to prevent misdiagnosis and associated complications.³

Abbreviations: ADA, American Diabetes Association; BMI, body mass index; DKA, diabetic ketoacidosis; T1D, type 1 diabetes; T2D, type 2 diabetes.

References

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