

— Metabolic & Endocrine Health

The endocrine system is the collection of glands, each of which secretes different types of hormones that regulate metabolism, growth and development, tissue function, sexual function, reproduction, ... [See more](#)

Diabetes & Insulin Resistance

Insulin resistance is a condition in which the body produces insulin but does not use it effectively. When people have insulin resistance, glucose builds up in the blood instead of being absorbed by the cells, leading to type 2 diabetes or pre-diabetes. Most people with insulin resistance don't know they have it for many years—until they develop type 2 diabetes, a serious, lifelong disease. The good news is that if people learn they have insulin resistance early on, they can often prevent or delay diabetes by making changes to their lifestyle.

When people that do not have diabetes eat, the pancreas automatically produces the right amount of insulin to move glucose from blood into the cells. In people with diabetes, however, the pancreas either produces little or no insulin, or the cells do not respond appropriately to the insulin that is produced. Glucose builds up in the blood, overflows into the urine, and passes out of the body in the urine. Thus, the body loses its main source of fuel even though the blood contains large amounts of glucose. The three main types of diabetes are: type 1 diabetes, type 2 diabetes and gestational diabetes

Hide

— GLUTAMIC ACID ...
(IU/mL)

<5

Range: <5

GLUTAMIC ACID DECARBOXYLASE 65 AB

(IU/mL)



Result Comments

This test was performed using the GAD65 ELISA method which is standardized against the International reference preparation 97/550.

+ INSULIN AUTOAN...
(U/mL)

<0.4

Range: <0.4

— IA-2 ANTIBODY
(U/mL)

<5.4

Range: <5.4

IA-2 ANTIBODY

(U/mL)



Result Comments

This test was performed using the IA-2 Antibody ELISA method which is standardized against the WHO Reference Reagent 97/550. The reference range reported was established specifically for this test method.

ZINC TRANSPORT...
(U/mL)

<10

Range: <15

ZINC TRANSPORTER 8 (ZnT8) ANTIBODY

(U/mL)



Result Comments

Clinician Resources:

Test Guidance

Autoantibodies and Type 1 Diabetes (T1D)

For additional information, please refer to

<https://www.questdiagnostics.com/healthcare-professionals/clinical-educationcenter/faq/faq297> (This link is being provided for information/educational purposes only.)

Medical Guidelines and References

2023 American Diabetes Association Screening Recommendations

(1) 2.5 Screening for presymptomatic type 1 diabetes may be done by detection of autoantibodies to insulin, glutamic acid decarboxylase (GAD), islet antigen 2, or zinc transporter 8. B

2.6 Multiple confirmed islet autoantibodies is a risk factor for clinical diabetes. Testing for dysglycemia may be used to further forecast near-term risk. When multiple islet autoantibodies are identified, referral to a specialized center for further evaluation and/or consideration of a clinical trial or approved therapy to potentially delay development of clinical diabetes should be considered. B

Patient Resources

American Diabetes Association: Understanding Type 1 Diabetes
<https://diabetes.org/about-diabetes/type-1>

American Diabetes Association: Your Journey With Type 1 Diabetes
<https://diabetes.org/living-with-diabetes/type-1>

JDRF: T1D Education \T\ Awareness

<https://www.jdrf.org/t1d-resources/t1detect/> TrialNet: Type 1 Diabetes Research Network <https://www.trialnet.org/>

1. Nuha A. ElSayed, Grazia Aleppo, Vanita R. Aroda, Raveendhara R. Bannuru, Florence M. Brown, Dennis Bruemmer, Billy S. Collins, Marisa E. Hilliard, Diana Isaacs, Eric L. Johnson, Scott Kahan, Kamlesh Khunti, Jose Leon, Sarah K. Lyons, Mary Lou Perry, Priya Prahalad, Richard E. Pratley, Jane Jeffrie Seley, Robert C. Stanton, Robert A. Gabbay, American Diabetes Association; Addendum. 2. Classification and Diagnosis of Diabetes: Standards of Care in Diabetes-2023. *Diabetes Care* 2023;46(Suppl. 1):S19-S40. *Diabetes Care* 1 September 2023; 46 (9): 1715. <https://doi.org/10.2337/dc23-ad08>