



DIAGNOSIS OF PRE-DIABETES & DIABETES

What is Diabetes and Prediabetes?

Prediabetes means one has blood sugar levels higher than normal but not high enough to be labelled as Diabetes.

Adults and children with Prediabetes are at high risk to progress to Type 2 diabetes, if necessary lifestyle modifications aren't followed. Asian Indians have the highest rates of conversion.

How can we Diagnose Diabetes?

Diabetes is best diagnosed by blood test.

These include:

- *Fasting blood glucose (Fasting Plasma Glucose [FPG])
- *2-hr after meal blood glucose (Post Prandial Glucose [PPG])
- *Oral Glucose Tolerance test
- *HbA1c.

It is good to repeat an abnormal blood sugar report, on a subsequent day to confirm diagnosis.

The diagnostic gold-standard test is the 75-gram Oral Glucose Tolerance Test (75g OGTT).

It includes 2 blood tests: a fasting morning sample (8-hour overnight fast) and 2-hours after drinking 75g glucose solution.

The normal values are:

Fasting <100 mg/dl and 2-hour blood sugar <140 mg/dl.

If Fasting value is between 100-125 mg/dl and/or 2-hour value between 140-199 mg/dl, it signifies Pre- Diabetes.

If Fasting value ≥ 126 mg/dl and/or 2-hour value ≥ 200 mg/dl, it signifies Diabetes.

Another method of testing for Diabetes screening is the HbA1c. HbA1c can be checked any time of the day. However anemia (Low Hemoglobin [Hb]) and some other causes can affect HbA1c result, hence needs to be corrected first.

HbA1c < 5.7 is normal. HbA1c between 5.7 - 6.5 signifies Prediabetes. HbA1c value ≥ 6.5 signifies Diabetes.

What is the prevalence of Pre-Diabetes and Diabetes in India?

The prevalence of Diabetes has risen from 7.1% in 2009 to 8.9% in 2019 and that of Pre-diabetes is 10.3%

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<https://endocrinesocietyindia.org/>

Is Diabetes Hereditary?

For long there has been this assumption that Type 2 Diabetes can occur only in those with specific pre-determined genetic make-up and hence was labelled hereditary.

However, recent studies show that such genetic susceptibility can be acquired by environmental modifications, a phenomenon called epigenetic modification and exposome. Hence, this gives us a ray of hope that, by adopting good lifestyle and healthy environment, diabetes can be prevented or delayed.

However there are risk factors which need to be recognised and addressed.

A worrisome trend noticed is that the percentage of those with diabetes and yet , not been diagnosed (undiagnosed diabetes) is a staggering 57% of the prevalence.

Hence public awareness about diabetes and pre-diabetes and the need to screen for these based on risk factors and symptoms become important.

What should I do to avoid Diabetes?

The easiest and best method is to adopt healthy lifestyle. Healthy low calorie balanced diet, adequate physical activity, optimal sleep at night, avoiding stressful situations, avoiding plastic and chemical exposure, consuming local and organic food, maintaining ideal body weight and staying happy are simple lifestyle practises that can help lead a long , healthy life.

Are those with Pre-Diabetes at-risk for complications like those with Diabetes?

Although Pre-Diabetes is below the cut-off for diagnosis for Diabetes, the internal metabolic changes have already started to take place.

A large number of studies have clearly shown that metabolic abnormalities lead to changes in blood vessel function and inflammation.

Technically, Pre-Diabetes puts a person at-risk for vascular events , if not addressed properly.

However, one interesting fact is that with proper lifestyle changes, Pre-Diabetes can be stopped and even reversed.