CONDITION

Prediabetes

Prediabetes means blood sugar is above normal but not high enough for a type 2 diabetes diagnosis.

WHAT IT IS
Higher-than-normal blood sugar below the diabetes range

BODY SYSTEM
Hormones and metabolism

MAIN SYMPTOMS
Usually none, sometimes thirst, frequent urination, fatigue

WHAT CAUSES IT
Insulin resistance and reduced insulin production

HOW IT IS DIAGNOSED
A1C, fasting glucose, or oral glucose tolerance testing

MAIN TREATMENT
Lifestyle changes, sometimes glucose-lowering medicine

CAN IT BE CURED?
Sometimes - levels may return to normal

IS IT AN EMERGENCY?
No - sudden symptoms may indicate diabetes

LONG-TERM OUTLOOK
Progression is not inevitable; diabetes and heart risks remain

Overview

Prediabetes is a condition in which the amount of glucose, or sugar, in your blood is higher than normal but below the range used to diagnose diabetes. It usually develops because the body is becoming less responsive to insulin.

Insulin is a hormone made by the pancreas. It helps glucose move from the bloodstream into cells, where it can be used for energy. When cells do not respond well to insulin, the pancreas must make more of it. Over time, it may no longer make enough to keep blood glucose in the normal range.

Prediabetes matters because it raises the chance of developing type 2 diabetes. It is also linked with a higher risk of heart and blood vessel disease. However, progression is not inevitable. Blood glucose may remain stable or return to the normal range, especially when risk

factors are addressed.

Prediabetes is not the same as type 1 diabetes. It is mainly used to describe increased risk of type 2 diabetes.

Symptoms

Most people with prediabetes have no symptoms. It is often found during routine blood testing or screening for diabetes.

Symptoms such as increased thirst, frequent urination, blurred vision, unexplained weight loss, or marked fatigue are more concerning for diabetes than prediabetes. If you develop these symptoms, arrange medical assessment rather than assuming they are caused by prediabetes.

Some people with insulin resistance develop acanthosis nigricans. This means patches of skin become darker and thicker, often around the neck, armpits, or groin. The change itself is not dangerous, but it can be a sign that the body is producing high levels of insulin.

Causes and risk factors

Prediabetes usually results from a combination of insulin resistance and a gradual reduction in the pancreas's ability to make enough insulin. There is rarely one single cause.

Genes influence risk, but so do health conditions, medicines, surroundings, sleep, activity, and access to nutritious food and preventive care. Prediabetes is not a sign of personal failure.

Factors associated with a higher risk include:

Prediabetes is more common in some racial and ethnic populations. This reflects a complex mix of ancestry, social conditions, health care access, stress, and environmental factors rather than a simple biological difference.

- Having a parent or sibling with type 2 diabetes
- Getting older, although prediabetes can occur at any age
- Carrying excess body fat, particularly around the abdomen
- Being physically inactive
- Having had diabetes during pregnancy, called gestational diabetes
- Having polycystic ovary syndrome, or PCOS
- Having high blood pressure, unhealthy cholesterol levels, or heart disease

- Having obstructive sleep apnea
- Taking certain medicines that can raise blood glucose, such as long-term corticosteroids like prednisone or hydrocortisone

Diagnosis

Prediabetes is confirmed with a blood test. Common tests include:

Testing ranges and terminology can differ slightly between health systems. A clinician may repeat a test if the result is unexpected, close to a cutoff, or inconsistent with other results.

A1C is not reliable in every situation. Pregnancy, recent blood loss or transfusion, anemia, kidney or liver disease, and some inherited hemoglobin differences can affect it. Another glucose test may be more appropriate in these circumstances.

Home glucose meters and wearable glucose sensors can show patterns, but they are not normally used by themselves to diagnose prediabetes. Diagnosis requires an appropriate laboratory test.

- A1C: An estimate of average blood glucose over roughly two to three months. A result from 5.7% to 6.4% is in the prediabetes range.
- Fasting plasma glucose: Blood glucose measured after at least eight hours without calories. A result from 100 to 125 mg/dL, or 5.6 to 6.9 mmol/L, is in the prediabetes range.
- Oral glucose tolerance test: Blood glucose measured two hours after drinking a standard glucose solution. A result from 140 to 199 mg/dL, or 7.8 to 11.0 mmol/L, is in the prediabetes range.

Treatment and management

Management aims to lower the chance of type 2 diabetes and reduce heart and blood vessel risks. A practical plan should take account of your health, culture, finances, mobility, food access, and preferences.

Regular physical activity helps muscles use glucose more effectively. In the Diabetes Prevention Program, a structured lifestyle program aiming for at least 150 minutes of moderate activity each week and a 5% to 7% weight reduction substantially reduced progression to type 2 diabetes among participants at high risk.

Not everyone needs or wants to focus on weight. Activity, sleep, food quality, smoking cessation, blood pressure management, and cholesterol treatment can support health even

when weight does not change.

There is no single "prediabetes diet." Helpful eating patterns tend to emphasize vegetables, beans, whole grains, nuts, seeds, fruit, and other foods rich in fiber. It can also help to replace sugary drinks and heavily refined foods with options that cause a slower rise in blood glucose. A dietitian can help adapt these ideas to your usual foods and budget.

Metformin is sometimes offered to people with a particularly high risk of developing type 2 diabetes. It reduces glucose production by the liver and improves insulin response. It is not appropriate for everyone, and its benefits, digestive side effects, kidney testing, and possible effect on vitamin B12 should be reviewed before and during treatment.

Medicines or surgery used to treat obesity may also reduce diabetes risk when they are appropriate for obesity care. They are not automatically needed because a person has prediabetes.

Blood glucose is usually checked again over time. Many guidelines recommend at least yearly testing after prediabetes is identified, although timing may be adjusted for your results, risk factors, pregnancy plans, or symptoms.

Complications

The main concern is progression to type 2 diabetes. Risk is higher when glucose results are near the diabetes range, A1C is rising, or several other risk factors are present. Some people never progress, and some return to normal-range results.

Prediabetes is also associated with an increased risk of heart attack, stroke, and other blood vessel disease. Blood pressure, cholesterol, smoking, sleep, and family history may contribute to that risk. Managing these factors is an important part of care.

The eye, kidney, and nerve damage classically linked with diabetes is much more strongly associated with established and long-lasting diabetes. Early changes have been found in some people with prediabetes, but prediabetes does not mean these complications will occur.

Prevention

Prediabetes can sometimes be prevented or delayed, but prevention is not guaranteed. Age, family history, genetic risk, and a history of gestational diabetes cannot be changed.

Regular activity, a sustainable eating pattern, adequate sleep, and avoiding tobacco may lower risk. For people carrying excess weight, modest weight loss can have a meaningful effect, but

healthy changes can still be useful without weight loss.

If you had gestational diabetes, ongoing diabetes screening is important even if your blood glucose returned to normal after pregnancy. A future pregnancy may also require earlier testing.

Some medicines can raise blood glucose. Do not stop a prescribed medicine on your own. If a medicine may be contributing, the prescriber can review its benefits, risks, and possible alternatives.

Living with it and what to expect

Prediabetes may remain stable for years, return to the normal range, or progress to type 2 diabetes. A normal result after lifestyle changes does not erase your underlying risk, so periodic testing remains useful.

Changes in A1C happen gradually. Day-to-day choices do not usually cause immediate, predictable changes in this result. Illness, stress, sleep disruption, medication changes, and weight changes can also affect glucose over time.

If a future test reaches the diabetes range, it does not mean you have failed. Type 2 diabetes develops through a combination of biology and life circumstances. Early diagnosis allows treatment to begin before high glucose has caused years of harm.

Most people with prediabetes can continue their usual work, travel, exercise, and family life. The condition generally does not require daily finger-prick testing unless there is another reason for it. Regular follow-up focuses on glucose trends and related risks such as blood pressure and cholesterol.

When to get medical help

Arrange a routine appointment if a blood test suggests prediabetes, if you have several risk factors, or if you are unsure when you should be tested again. This is not usually urgent.

Seek prompt medical assessment if you develop persistent thirst, frequent urination, blurred vision, repeated infections, unexplained weight loss, or worsening fatigue. These symptoms may indicate that blood glucose has entered the diabetes range.

Prediabetes itself is not normally an emergency. Get emergency help for severe vomiting, abdominal pain, deep or rapid breathing, confusion, unusual drowsiness, or an inability to keep fluids down. These can occur with a serious high-glucose emergency or another acute illness

and should not be attributed to prediabetes.

Chest pressure, severe shortness of breath, one-sided weakness, facial drooping, or sudden trouble speaking also requires emergency help.

Common questions

Can prediabetes go away?

Blood glucose can return to the normal range, particularly after sustainable lifestyle changes or treatment of contributing factors. However, the tendency to develop high glucose may remain. Continued follow-up is still important.

Does prediabetes mean I will get diabetes?

No. Prediabetes raises the risk of type 2 diabetes, but progression is not certain. Your glucose level, family history, health conditions, medicines, and changes over time all affect risk.

Do I need medicine for prediabetes?

Many people begin with lifestyle support and monitoring. Metformin may be considered when the risk of progression is especially high. The choice should account for expected benefit, side effects, kidney function, pregnancy considerations, and personal preferences.

Do I need to check my blood sugar at home?

Usually not. Laboratory testing is more useful for monitoring prediabetes. Home checks may be suggested in particular situations, but a home meter cannot confirm the diagnosis by itself.

Can I eat sugar if I have prediabetes?

You do not usually need to remove all sugar or carbohydrates. Portion size, overall eating pattern, fiber, and the type of carbohydrate matter. Sugary drinks are especially easy to consume without feeling full, so replacing them can be a useful step.

How often should my A1C be checked?

Many people with prediabetes are tested about once a year. Testing may be sooner if your result is close to the diabetes range, symptoms develop, medicines change, or pregnancy is planned.

Sources

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