CONDITION

Impaired glucose tolerance

Impaired glucose tolerance means blood sugar rises higher than normal after glucose but has not reached the diabetes range.

WHAT IT IS
Higher-than-normal blood sugar after a glucose drink

BODY SYSTEM
Hormones and metabolism

MAIN SYMPTOMS
Usually none, thirst, frequent urination, fatigue

WHAT CAUSES IT
Insulin resistance and reduced insulin release

HOW IT IS DIAGNOSED
Oral glucose tolerance test

MAIN TREATMENT
Lifestyle changes and sometimes preventive medication

CAN IT BE CURED?
Sometimes - blood sugar may normalise

IS IT AN EMERGENCY?
No - IGT itself is not an emergency

LONG-TERM OUTLOOK
Often reversible, but future diabetes risk remains

Overview

Impaired glucose tolerance, often shortened to IGT, means your body is having difficulty controlling blood sugar after you consume glucose. The blood sugar level is above the normal range but below the level used to diagnose diabetes.

IGT is one form of prediabetes , an umbrella term for blood sugar results between normal and diabetes. Other forms include impaired fasting glucose and a raised HbA1c. HbA1c is a blood test that estimates your average blood sugar over the previous two to three months.

IGT matters because it increases the chance of developing type 2 diabetes. It is also associated with a higher risk of heart and blood vessel disease. However, progression is not certain. Blood sugar may remain stable or return to the normal range, especially when contributing factors can be changed.

IGT is not the same as type 2 diabetes. It also does not usually cause an immediate health problem or emergency. It is a sign that long-term follow-up and prevention are worthwhile.

Symptoms

Most people with IGT have no symptoms. It is often found through testing offered because of risk factors or during a routine health assessment.

Symptoms such as increased thirst, frequent urination, blurred vision, unusual tiredness or unexplained weight loss are more typical of diabetes than IGT. If these develop, arrange a medical assessment rather than assuming they are caused by prediabetes.

Some other conditions can cause the same symptoms. A blood test is needed to determine whether blood sugar is involved.

Causes and risk factors

Blood sugar is controlled partly by insulin, a hormone made by the pancreas. Insulin helps glucose move from the blood into cells, where it can be used for energy.

With IGT, body tissues usually respond less effectively to insulin. This is called insulin resistance . The pancreas may also be unable to release enough insulin quickly after eating or drinking glucose. Together, these changes allow blood sugar to stay higher for longer.

IGT usually results from a combination of inherited traits, ageing, health conditions and lifestyle factors. It is not caused simply by eating sugar.

Factors linked with a higher risk include:

Risk tends to increase with age, but IGT can occur in younger adults and, less commonly, in children. Not everyone with IGT has overweight, and having risk factors does not mean that you will develop it.

- Having overweight or obesity, especially around the waist
- Being physically inactive
- Having a close relative with type 2 diabetes
- Having had gestational diabetes during pregnancy
- Having polycystic ovary syndrome
- Having high blood pressure or unhealthy cholesterol levels

- Belonging to an ethnic group with a higher risk of type 2 diabetes
- Taking certain medicines that can raise blood sugar

Diagnosis

IGT is specifically diagnosed with an oral glucose tolerance test , or OGTT. For this test, you usually fast overnight. A blood sample is taken, you drink a measured glucose solution, and another blood sample is taken two hours later.

A two-hour plasma glucose result from 7.8 to 11.0 mmol/L, or 140 to 199 mg/dL, is in the IGT range. A result of 11.1 mmol/L, or 200 mg/dL, or higher is in the diabetes range. When there are no clear symptoms of diabetes, an abnormal diabetes-range result normally needs confirmation with repeat or additional laboratory testing.

The fasting result is also considered. Under the World Health Organization definition, IGT requires a fasting glucose below the diabetes threshold and a two-hour result in the IGT range.

A fasting glucose test or HbA1c can identify other forms of prediabetes, but neither test alone confirms IGT. These tests measure different aspects of blood sugar control, so one may be abnormal while another is not.

Illness, recent surgery and some medicines can temporarily affect blood sugar. Home glucose meters are useful for monitoring diagnosed diabetes, but they are not accurate enough to diagnose IGT.

Treatment and management

The main approach is to improve how the body responds to insulin and reduce the chance of type 2 diabetes. Management should take account of your health, mobility, weight, food preferences and any medicines you use.

Regular physical activity helps muscles use glucose more effectively. Many diabetes-prevention programmes aim for at least 150 minutes of moderate activity each week, spread across several days. Brisk walking is one example. Strength and balance activities may also be helpful. If pain, disability or another condition limits activity, a suitable plan can be adapted.

Eating patterns matter more than any single food. Helpful changes may include choosing more vegetables, whole grains, beans, nuts and other high-fibre foods. Reducing sugary drinks, heavily refined carbohydrates and large portions may limit sharp rises in blood sugar. There is

no single required "prediabetes diet."

If you have overweight, modest and sustainable weight loss can improve blood sugar control. In the major Diabetes Prevention Program study, intensive lifestyle support that included activity and weight loss reduced progression to type 2 diabetes. Weight loss is not appropriate for everyone, and people without excess weight may benefit from activity and food changes without trying to lose weight.

Medication such as metformin is sometimes considered for people at particularly high risk of progressing to diabetes. It is not needed by everyone with IGT and does not replace sustainable lifestyle measures. The decision takes account of factors such as test results, age, previous gestational diabetes, body weight and kidney function.

Blood pressure, cholesterol and smoking also affect long-term heart and circulation risk. These may be reviewed and managed separately from blood sugar.

Complications

The main long-term concern is progression to type 2 diabetes. This does not happen to everyone, and the timing cannot be predicted from one result.

IGT is also associated with an increased risk of heart disease and stroke. Some of this risk may come from related factors such as high blood pressure, unhealthy cholesterol levels, smoking or excess weight.

Damage to the eyes, kidneys and nerves is mainly associated with established diabetes. However, early changes may occasionally be present in people with prediabetes, especially when blood sugar has been abnormal for some time or other risk factors are present.

Prevention

IGT cannot always be prevented. Age, family history, ethnicity and previous gestational diabetes cannot be changed.

For many people, regular physical activity, a balanced high-fibre eating pattern and maintaining a weight that is healthy for them can reduce the likelihood of developing IGT or type 2 diabetes. These steps lower risk but cannot guarantee prevention.

If you take a medicine that can raise blood sugar, do not stop it without medical advice. Monitoring or an alternative may sometimes be appropriate.

Living with it and what to expect

Over months or years, IGT may return to the normal range, remain stable or progress to type 2 diabetes. A normal later result is encouraging, but it does not erase the underlying tendency. Blood sugar can rise again if health, weight, activity or medication changes.

Because IGT usually causes no symptoms, follow-up testing is important. Many people are offered testing about once a year, although the timing may be different if results are close to the diabetes range, pregnancy is planned, symptoms develop or treatment changes.

Most people can continue their usual work, travel and daily activities. IGT alone does not normally require home glucose testing or the daily routines used to manage diabetes.

Changes are more likely to last when they fit your circumstances. Small repeated actions, such as walking regularly or replacing sugary drinks, may be more practical than a strict short-term plan.

When to get medical help

Arrange a routine appointment if you have been told that a blood test is in the prediabetes range and have not discussed follow-up. Routine review is also appropriate if you are concerned about your diabetes risk, especially after gestational diabetes or if close relatives have type 2 diabetes.

Seek prompt medical advice if you develop:

These symptoms do not prove that you have diabetes, but they are reasons to check your blood sugar.

IGT itself is not an emergency. Call emergency services if you become confused, very drowsy or difficult to wake, or if severe illness includes repeated vomiting, deep rapid breathing or an inability to keep fluids down. These signs may indicate a serious problem, including severe hyperglycaemia, meaning very high blood sugar.

- Marked thirst or much more frequent urination
- Repeated blurred vision
- Unexplained weight loss
- Persistent unusual tiredness
- Recurrent skin, urine or genital infections

Common questions

Is impaired glucose tolerance the same as prediabetes?

IGT is a type of prediabetes. The term prediabetes also includes impaired fasting glucose and HbA1c results that are above normal but below the diabetes range. Only an oral glucose tolerance test can identify IGT specifically.

Does impaired glucose tolerance mean I will get diabetes?

No. It means your risk is higher, not that progression is certain. Some people remain in the IGT range, while others return to normal blood sugar or develop type 2 diabetes. Follow-up testing shows how the condition is changing.

Can impaired glucose tolerance be reversed?

Blood sugar can return to the normal range, particularly after sustainable changes in activity, eating or weight where relevant. This is sometimes described as reversal. It does not mean the underlying risk has disappeared, so ongoing healthy habits and periodic testing remain useful.

What should I eat if I have IGT?

Focus on an overall pattern rather than banning one food. Vegetables, beans, whole grains, nuts, fruit and suitable sources of protein can form the basis of meals. Water or unsweetened drinks can replace sugary drinks. Portion size and the amount of refined carbohydrate also affect the rise in blood sugar after meals.

Do I need to check my blood sugar at home?

Usually not. Laboratory tests are more reliable for diagnosis and follow-up. Home monitoring may be recommended in particular circumstances, but IGT alone does not usually require daily finger-prick testing.

How often should I be tested again?

Repeat testing is often offered around yearly. It may be done sooner if your result is near the diabetes threshold, you develop symptoms, become pregnant, start a medicine that can raise blood sugar or have another major change in health.

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