CONDITION

High potassium

High potassium is an above-normal blood potassium level that can disrupt muscle and heart electrical activity.

WHAT IT IS
More blood potassium than the body can safely handle

BODY SYSTEM
Heart and circulation, muscles, nerves, and kidneys

MAIN SYMPTOMS
Often none, muscle weakness, palpitations, nausea

WHAT CAUSES IT
Kidney problems, medicines, or potassium leaving damaged cells

HOW IT IS DIAGNOSED
Blood potassium test, repeat sample, and ECG

MAIN TREATMENT
Heart protection, potassium shifting and removal, cause correction

CAN IT BE CURED?
Sometimes - when the underlying cause is reversible

IS IT AN EMERGENCY?
Sometimes - very high levels or abnormal ECG

LONG-TERM OUTLOOK
Usually manageable with treatment and regular monitoring

Overview

High potassium, also called hyperkalaemia, means there is too much potassium in your blood. Potassium is a mineral that helps nerves send signals and muscles contract. It is especially important for the heart's electrical activity.

Your kidneys normally remove extra potassium through urine. High potassium can develop when the kidneys cannot remove enough, certain medicines affect potassium balance, or potassium moves out of damaged cells and into the blood.

A mildly raised result may not cause symptoms. A larger or rapidly developing rise can interfere with the heartbeat and muscle function. This is why a high result sometimes needs urgent assessment even when you feel well.

The normal range differs slightly between laboratories. Your result also needs to be interpreted alongside your kidney function, medicines, symptoms, and an electrocardiogram, or ECG, when appropriate. An ECG records the heart's electrical activity.

Sometimes the result is falsely high because blood cells were damaged while the sample was collected or processed. This is called pseudohyperkalaemia. A repeat blood test can help identify it, but urgent treatment should not be delayed when the level or clinical situation suggests a real risk.

Symptoms

High potassium often causes no symptoms. It may be found during routine blood tests or monitoring for kidney disease or medication use.

When symptoms occur, they may include:

Symptoms do not reliably show how high the potassium level is. Some people with a significant rise feel normal, while others develop symptoms with a rapid change.

Severe muscle weakness can progress to difficulty moving or breathing. Dangerous changes in heart rhythm can cause palpitations, dizziness, fainting, or cardiac arrest. These complications are uncommon but require immediate treatment.

- Muscle weakness, heaviness, or unusual tiredness
- Tingling or numbness
- Nausea or vomiting
- A pounding, racing, slow, or irregular heartbeat
- Shortness of breath
- Faintness or collapse

Causes and risk factors

Kidney disease is a major cause because the kidneys control how much potassium leaves the body. The risk is higher with advanced chronic kidney disease or a sudden decline in kidney function, called acute kidney injury.

Several medicines can raise potassium. These include some medicines used for high blood pressure, heart failure, and kidney protection, as well as potassium-sparing water tablets. Certain anti-inflammatory painkillers like ibuprofen or naproxen , potassium supplements, and

some other prescription medicines can also contribute.

These medicines often provide important benefits. Do not stop a prescribed medicine because of a potassium result unless a healthcare professional tells you to do so. The safer approach is to review the medicine, dose, kidney function, and repeat test together.

Other possible causes include:

Food alone rarely causes dangerous high potassium in someone with healthy kidneys. Diet becomes more important when kidney function is reduced or medicines limit potassium removal.

A falsely high result can occur if the blood draw was difficult, a tourniquet was left on for a long time, you repeatedly clenched your fist, or the sample was delayed or damaged. Very high platelet or white blood cell counts can also affect some samples.

- Dehydration or a serious illness affecting kidney function
- Poorly controlled diabetes, especially with a shortage of insulin
- Low levels of aldosterone, a hormone that helps the kidneys remove potassium
- Adrenal gland conditions, including Addison's disease
- Acid building up in the blood
- Major burns, muscle injury, or breakdown of red blood cells
- Rapid destruction of cancer cells during treatment
- A very high potassium intake when the kidneys cannot remove it

Diagnosis

High potassium is confirmed with a blood test. Because sample problems can raise the result, the test may be repeated promptly using a carefully collected sample.

A repeat test is especially useful when the result is unexpected and you have no symptoms. However, clinicians may begin urgent assessment or treatment before a repeat result if the potassium is very high, symptoms are present, or the ECG is abnormal.

An ECG may show changes caused by potassium's effect on the heart. A normal ECG does not completely rule out risk, so it is considered together with the potassium level and your overall condition.

Further blood tests may check kidney function, blood sugar, bicarbonate and other electrolytes. Bicarbonate helps show whether too much acid is present in the blood. A medication and supplement review can identify substances that may be contributing.

Depending on the situation, urine tests or tests of adrenal hormones may be needed. The aim is not only to confirm the result but also to find out why it happened and whether it is likely to happen again.

Treatment and management

Treatment depends on how high the potassium is, how quickly it rose, whether the ECG is affected, your symptoms, and the underlying cause.

A mild, stable rise may be managed by repeating the test, reviewing medicines and supplements, treating dehydration or illness, and arranging follow-up blood tests. Dietary changes may be recommended when kidney disease or repeated high readings are involved.

Urgent hospital treatment may include several different approaches. Calcium given into a vein can help protect the heart when there are concerning ECG changes. It does not remove potassium from the body.

Other medicines can temporarily move potassium from the blood into cells. These may include insulin given with glucose or an inhaled medicine that also opens the airways. In selected situations, treatment may also correct excess acid in the blood.

Potassium can be removed through urine, the digestive tract, or dialysis. Water tablets like furosemide or hydrochlorothiazide may help some people who can still produce urine. Potassium-binding medicines trap potassium in the digestive system so it leaves in stool. Dialysis filters the blood and may be needed when potassium is severe, other treatments are not enough, or kidney failure is present.

Longer-term management may include adjusting contributing medicines, improving diabetes control, treating kidney or adrenal problems, and using a potassium binder when appropriate. If dietary changes are needed, a renal dietitian can help reduce potassium without making the diet unnecessarily restrictive.

Complications

The main concern is an abnormal heart rhythm. Potassium affects the electrical signals that coordinate each heartbeat. A major increase can make the heart beat too slowly, too quickly, or ineffectively.

High potassium can also interfere with signals between nerves and muscles. This may cause marked weakness and, in severe cases, temporary paralysis or breathing difficulty.

Repeated episodes may lead to emergency visits or changes to medicines used for kidney or heart protection. Careful monitoring can often allow useful medicines to continue safely, sometimes with additional treatment to control potassium.

Complications are more likely when potassium rises quickly, kidney function is poor, the level is very high, or there are ECG changes. A single mildly raised result does not mean that a serious complication will occur.

Prevention

High potassium cannot always be prevented. Kidney disease, adrenal disorders, acute illness, and necessary medicines may affect potassium despite careful management.

If you are at risk, regular blood tests can find a rise before symptoms develop. Follow the testing schedule arranged for kidney disease, diabetes, heart failure, or medicines known to affect potassium.

Take medicines and supplements only as directed. Check before using potassium tablets or salt substitutes containing potassium chloride. Some herbal products and sports supplements also contain potassium.

Do not make broad dietary restrictions based only on a single result. Potassium is present in many nutritious foods, and the right approach depends on kidney function, medicines, and eating patterns. If restriction is needed, individual advice can help you change the most important sources while maintaining a balanced diet.

During vomiting, diarrhoea, fever, or poor fluid intake, ask for advice if you have kidney disease or take medicines that affect potassium. Acute illness can change kidney function and may mean that blood tests or temporary medication changes are needed.

Living with it and what to expect

A one-time high result may resolve after a sample is repeated, dehydration is corrected, or a contributing medicine or illness is addressed. Follow-up testing confirms whether the potassium has returned to a safer range.

When chronic kidney disease or another ongoing condition is responsible, potassium may rise again over months or years. Management then focuses on monitoring, treating the underlying condition, and balancing potassium control with the benefits of heart and kidney medicines.

The frequency of blood tests may change after an abnormal result, a medicine adjustment, or a

change in kidney function. Once results are stable, testing is often less frequent, although continued monitoring remains important.

Most people with stable, treated high potassium can continue their usual activities. You may need to become familiar with your medicines, planned blood tests, and any personalised food advice. Keeping an up-to-date medicine and supplement list can make reviews easier.

The long-term outlook is shaped mainly by the cause. A reversible episode may not return. Ongoing kidney, heart, or hormone problems may require lasting follow-up, but repeated high potassium can often be managed with a combination of monitoring and treatment.

When to get medical help

Seek emergency help now if you have severe or rapidly worsening muscle weakness, difficulty breathing, fainting, collapse, or a new racing, pounding, very slow, or irregular heartbeat. Do not drive yourself if you feel faint or seriously unwell.

Follow urgent instructions from a laboratory or healthcare service if you are told that your potassium is critically high. A dangerous level may cause no warning symptoms.

Contact a healthcare professional promptly if you develop new weakness, tingling, nausea, or palpitations, especially if you have kidney disease, diabetes, heart failure, or take medicines that can raise potassium.

Routine follow-up is appropriate for a mild, stable result when you have been given a clear plan for repeat testing and feel well. Make sure the repeat test happens when arranged. Do not stop prescribed heart, blood pressure, or kidney medicines on your own.

Common questions

Can eating bananas cause high potassium?

Bananas contain potassium, but they rarely cause dangerous levels when kidney function is normal. Food becomes more relevant when the kidneys do not remove potassium well or when medicines affect potassium balance. Other foods and additives may contribute as much as, or more than, bananas.

What potassium level is dangerous?

Risk does not come from the number alone. The speed of the rise, symptoms, kidney function, and ECG findings also matter. Many clinical services classify a level of 6.5 mmol/L or above as severe, but lower levels may still need urgent care in some circumstances. Follow the

instructions given with your test result.

Can drinking more water lower potassium?

Extra water is not a reliable treatment. It may help if mild dehydration is contributing and your kidneys can handle the fluid, but too much fluid can be harmful in kidney or heart failure. Significant high potassium needs proper assessment rather than home treatment with water.

Will high potassium go away on its own?

A false or temporary rise may disappear after a repeat sample or treatment of the cause. High potassium linked to chronic kidney disease, hormone problems, or ongoing medicines may return and require continued management. A follow-up blood test is the only way to confirm that it has fallen.

Which medicines can raise potassium?

Several blood pressure, heart failure, kidney, and potassium-sparing water medicines can raise it. Anti-inflammatory painkillers, potassium supplements, and some other medicines may also contribute. These treatments can have important benefits, so medication changes should be supervised.

Can I lower potassium quickly at home?

There is no safe home method for rapidly lowering a significantly high level. Emergency treatments work in different ways and require monitoring because potassium can shift again. If you have a critical result or emergency symptoms, seek urgent medical care.

Sources

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