HEALTH BASICS

Potassium (K)

Potassium is an essential mineral that helps nerves, muscles, and the heart work normally.

WHAT IT IS
An essential mineral and electrically charged electrolyte

WHERE IT COMES UP
Blood tests, kidney care, medicines, supplements, and food labels

WHY IT MATTERS
Supports nerve signals, muscle movement, and heart rhythm

WHAT IT IS NOT
Not a disease or diagnosis

WHO TO ASK
Primary care clinician, pharmacist, dietitian, or kidney specialist

HOW IT IS CHECKED
Blood potassium test, sometimes urine or heart tests

Overview

Potassium is a mineral found in food and throughout your body. It is also an electrolyte , meaning it carries an electrical charge when dissolved in body fluid. The letter K is its chemical symbol, from the word kalium .

Potassium is not a disease or a diagnosis. It may appear on a food label, electrolyte panel, kidney blood test, medication leaflet, or supplement bottle.

Most potassium in your body is inside your cells. Only a small amount is in the bloodstream, but that amount must stay within a controlled range. A blood test usually reports potassium in serum or plasma, the liquid parts of blood.

The reference range printed with your result is the one to use. Ranges can differ slightly because laboratories use different equipment and methods. A result outside the range needs to be interpreted alongside your health, medicines, kidney function, and the quality of the blood sample.

How it works

Potassium helps cells send electrical signals. Nerves use these signals to carry messages, while muscles use them to contract and relax. This includes the heart muscle.

Potassium also helps control fluid balance inside cells. It works closely with sodium, another electrolyte that is found mainly outside cells.

Your digestive system absorbs potassium from food and drinks. Your kidneys then remove most excess potassium through urine. Smaller amounts leave through stool and sweat.

Several body systems help keep blood potassium stable. The hormone aldosterone tells the kidneys to release more potassium into urine. Insulin helps move potassium from the blood into cells. Changes in blood acidity can also shift potassium into or out of cells.

Because most potassium is inside cells, a blood result does not show the body's total potassium stores directly. It shows the small but important amount circulating at the time the sample was taken.

Why it matters for your health

A controlled blood potassium level allows nerves, skeletal muscles, and the heart's electrical system to work normally. Levels that are substantially too high or too low can interfere with these functions.

Kidney function is especially important. Healthy kidneys can usually adjust how much potassium they remove. Damaged or poorly functioning kidneys may have more difficulty doing this.

Medicines can also affect potassium. Some increase potassium by changing kidney handling or hormone activity. Others, including certain water tablets like furosemide or hydrochlorothiazide called diuretics, can lower it. The effect may be different when several medicines are taken together.

Dietary potassium comes from many foods, not only bananas. Sources include beans, lentils, potatoes, tomatoes, leafy vegetables, fruit, dairy products, fish, and meat. Some processed foods contain potassium-based additives. Salt substitutes may use potassium chloride in place of sodium chloride.

Most people do not need to calculate every milligram they eat. However, someone with kidney disease or an abnormal blood result may receive individual advice. A food that is nutritious for one person may contain more potassium than is suitable for another person's treatment plan.

What can go wrong

Hypokalaemia , also spelled hypokalemia, means the blood potassium level is below the laboratory reference range. It can occur after prolonged vomiting or diarrhoea, with laxative overuse, or because of medicines that increase potassium loss in urine. Hormone conditions and shifts of potassium from blood into cells can also contribute. Low dietary intake alone is not usually the only cause.

Hyperkalaemia , also spelled hyperkalemia, means the blood potassium level is above the reference range. It can be related to reduced kidney function, certain medicines, potassium supplements, or salt substitutes containing potassium. Hormone disorders, severe cell damage, and shifts of potassium out of cells are other possible causes.

An apparently high result is not always a true increase. Potassium can leak out of blood cells if they are damaged during collection or handling. This is called haemolysis . Prolonged tourniquet use or repeated fist clenching can also affect a sample. A clinician may order another test before deciding what the result means.

High or low potassium may cause no obvious problems at first. More significant abnormalities can cause muscle weakness, abnormal heart rhythms, or, in severe cases, paralysis. These effects come from the potassium abnormality, not from potassium itself being an illness.

A heart tracing called an electrocardiogram , or ECG, may be used when a result is concerning. It checks the heart's electrical activity, but a normal ECG does not always rule out a significant potassium problem.

Seek emergency help for fainting, severe or rapidly worsening weakness, new chest pain, marked breathing difficulty, or a sustained racing or irregular heartbeat. These problems can have many causes, but they need urgent assessment.

If a laboratory or clinical service tells you that your potassium result is critical, follow its immediate instructions even if you feel well. A mildly abnormal result without urgent symptoms is usually handled through prompt, non-emergency follow-up with the clinician who ordered the test.

What you can do

There is no reliable home check for blood potassium. A blood test is needed. Urine testing, kidney tests, hormone tests, or an ECG may be added when the cause is unclear.

If you receive an abnormal result, useful questions include:

Keep an up-to-date record of prescription medicines, non-prescription products, herbal

remedies, electrolyte powders, and supplements. Include salt substitutes and products labelled "low sodium," as some contain potassium chloride.

Do not start potassium supplements to treat tiredness, cramps, or a single unconfirmed result. Too much supplemental potassium can be harmful, particularly when kidney function is reduced or certain medicines are used. Likewise, do not stop a prescribed medicine because it can affect potassium. Ask the prescriber or a pharmacist how it should be managed.

If you have kidney disease, heart failure, adrenal disease, or repeated abnormal results, ask whether you need a personalised food plan. A registered dietitian with relevant experience can help you adjust potassium without making your diet unnecessarily restrictive.

If you feel well, have no relevant medical condition, and have not received an abnormal result, there is usually nothing specific to monitor at home. Eat a balanced range of foods and discuss testing only when it is relevant to your care.

- Was the sample affected by haemolysis or another collection problem?
- Should the blood test be repeated, and how soon?
- Could any medicine, supplement, or salt substitute affect the result?
- Do I need advice about food, or should I keep eating normally?
- Were kidney function, magnesium, sodium, and acid-base balance checked?

Common questions

Is potassium the same as vitamin K?

No. Potassium is a mineral and electrolyte with the chemical symbol K. Vitamin K is a group of vitamins involved in blood clotting and bone health.

Does a banana fix low potassium?

A banana contains potassium, but food is not a substitute for assessing a low blood result. Treatment depends on how low the level is, why it happened, kidney function, and whether there are heart or muscle effects.

Can drinking water lower high potassium?

Water does not reliably correct hyperkalaemia. Treatment is based on the cause and severity. Drinking extra fluid may also be unsuitable for some people with kidney or heart conditions.

Why was my potassium test repeated?

A repeat test may confirm an unexpected result or replace a sample affected by blood-cell damage. It can also show whether an abnormal level is improving, stable, or worsening.

Should everyone with kidney disease avoid potassium?

No single restriction suits everyone. Advice should reflect current blood results, kidney function, medicines, usual food intake, and the type of kidney treatment being used.

What does potassium chloride mean on a label?

Potassium chloride is a potassium-containing salt. It may be used in supplements, medicines, processed foods, or lower-sodium salt substitutes. If you have been told to limit potassium, include these products when discussing your intake.

Sources

- National Institutes of Health Office of Dietary Supplements: Potassium - Fact Sheet for Health Professionals
- MedlinePlus: Potassium Blood Test
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- Palmer BF, Clegg DJ. Physiology and Pathophysiology of Potassium Homeostasis. Advances in Physiology Education. 2016;40(4):480-490
- Merck Manual Consumer Version: Overview of Potassium's Role in the Body