PATHOLOGY TESTS EXPLAINED

Information about pathology tests to help everyone take control of their health and make the right decisions about their care.

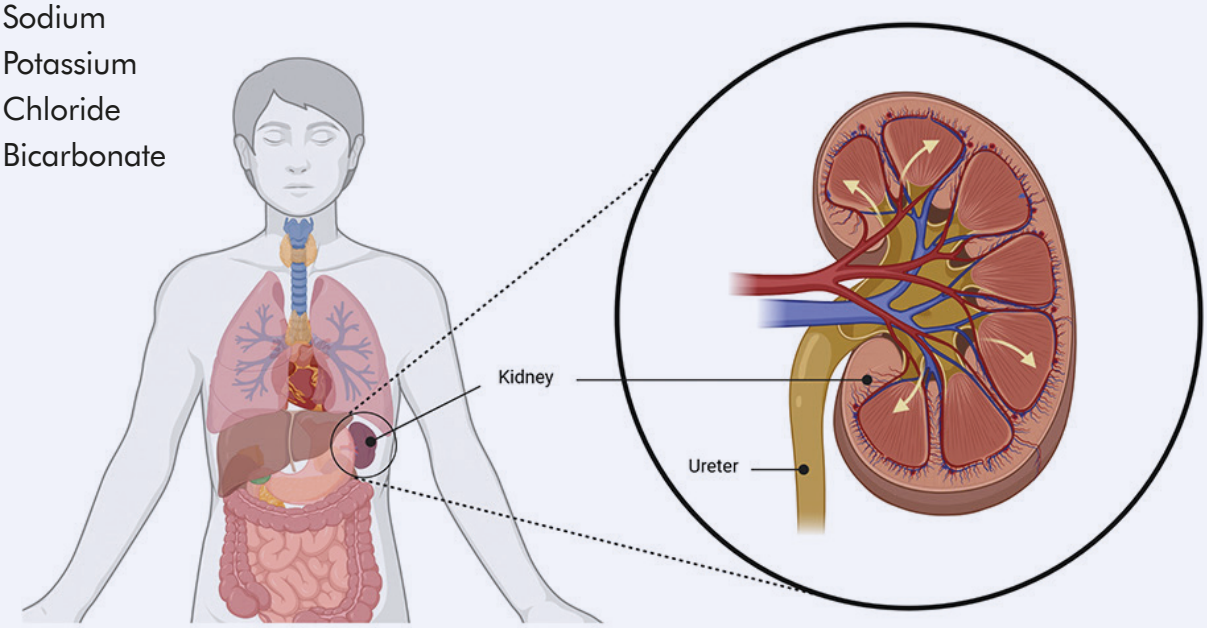
WHAT YOU SHOULD KNOW ABOUT **TESTING ELECTROLYTES**

Electrolytes are salts and minerals in your body that carry an electric charge. They help regulate many of your body systems including heart rhythms, nerves, and muscles. All fluid and almost every cell in your body contains electrolytes.

Cells use electrolytes to transmit electrical impulses both within themselves and to other cells. In this way, the nerves, heart and muscles can create nerve impulses and muscle contractions that are important to vital body functions such as heart rhythms. They are also involved in helping maintain the balance of fluid inside and outside your cells.

An electrolyte test measures some of the electrolytes found in your blood:

- Sodium
- Potassium
- Chloride
- Bicarbonate



Your kidneys help keep electrolytes at a constant level

Keeping a balance

Your kidneys control electrolyte levels and work to keep them at a constant level no matter what changes take place in the body. They do this through the reabsorption of electrolytes into the blood or by filtering excess electrolytes out of your body and into the urine to be removed.

Blood levels of electrolytes are affected by how much of each is taken in through your diet (e.g. sodium), the amount of water in your body, and how much of each is removed by your kidneys into the urine. They are also affected by hormones, especially aldosterone, a hormone that retains sodium in the body and removes potassium through the kidneys in order to keep a balance.

Sodium and potassium

These help maintain the body's fluid balance.

Chloride

This travels in and out of the body's cells to help keep electrical neutrality, and its level usually mirrors that of sodium.

Bicarbonate

Your lungs bring oxygen into your body, and it is transferred into the blood and transported to the cells where it is used to generate energy. A by-product of metabolism is the production of CO_2. This passes from the cells into the blood and is transported as bicarbonate to your lungs where it is exhaled as carbon dioxide. Bicarbonate concentrations are adjusted by your kidneys to help maintain stable pH levels and maintain electrical neutrality.

When are electrolyte tests usually ordered?

- as part of a group of tests which also includes creatinine and urea to check how well your kidneys are working,
- together with Liver Function Tests to assess your liver, and
- in response to some conditions such as possible heart problems or diabetes.

What can your results tell you?

Having too much or too little of any of these electrolytes can be very serious for your health. For example, high potassium can cause an abnormal heart rhythm which requires immediate treatment in hospital.

In specific disorders, one or more electrolytes may be abnormal. Your doctor will look at the overall balance, but they are likely to be especially focused on your sodium and potassium levels.

If your kidneys are not working properly, you can retain too much fluid. This dilutes sodium and chloride so that they fall below normal levels.

Severe fluid loss (dehydration) can lead to an increase in potassium, sodium, and chloride levels.

Changes in acid and alkaline levels in your blood, known as the acid-base balance, can affect electrolyte levels particularly of potassium and bicarbonate.

Some forms of heart disease, muscle, nerve problems and diabetes can cause one or more abnormal electrolyte levels.

What are reference intervals?

Your results will be compared to a set of numbers called reference intervals – sometimes called a reference or normal range. This is the range of test results considered 'normal' for the general population. If a result in your report is outside this range, it can be flagged as high (H) or low (L). This does not necessarily mean that anything is wrong and depends on your personal situation. Your results need to be interpreted by your doctor.

Questions to ask your doctor

Why does this test need to be done?
Do I need to prepare (such as fast or avoid medications) for the sample collection?
Will an abnormal result mean I need further tests?
How could it change the course of my care?
What will happen next, after the test?

Having a medical test

The choice of tests your doctor makes will be based on your medical history and symptoms. It is important that you tell them everything you think might help.

You play a central role in making sure your test results are accurate. Do everything you can to make sure the information you provide is correct and follow instructions closely.

Talk to your doctor about any medications you are taking. Find out if you need to fast or stop any particular foods or supplements. These may affect your results.

For more detailed information on these and many other tests go to **pathologytestsexplained.org.au**

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www.pathologytestsexplained.org.au

Please use this QR code to access more information

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Pathology Tests Explained is managed by a consortium of medical and scientific organisations representing pathology practice in Australia. More details at: **www.pathologytestsexplained.org.au/about**

My Health Record

You'll find a direct link to the Pathology Tests Explained website embedded in the pathology results pages of your My Health Record.

Click on the link to find information about what your tests are investigating or measuring and what your results can tell your doctor.