

What do my blood and dialysis results mean

Renal

Patient information

A decorative geometric pattern in the bottom right corner, consisting of a grid of white dots connected by thin white lines to form a series of triangles.

What is this information about?

This information aims to help you to understand your monthly blood test results and how they are relevant to your dialysis. It is a guide to the blood tests that people who are having dialysis are most likely to have.

Why have I been given this information?

For the time that you are having your dialysis you will have monthly blood tests. These are key to helping us check your health and how well your dialysis is working. Reading this information will help you to understand this as well.

Might I have other blood tests which are not covered in this information?

Yes. If the blood test you are having is not covered in this information and you would like to know more about it, please contact your home dialysis team.

What do these mean? (abbreviations and explanations)

In this information:

g/L. This means grams per litre. It is a standard measurement used in blood test results that shows how many grams of a substance there is in a litre of blood.

Mmol/L. This means millimoles per litre. It is a standard measurement used in blood test results that shows how many molecules of a substance there is in a litre of blood.

µg/L. This means micrograms per litre. It is a standard measurement used in blood tests that show the concentration of a substance in a litre of blood.

Electrolyte. Electrolytes are minerals in your blood, sweat, and urine. When dissolved in these, they carry an electric charge that your body uses to manage daily functions crucial for your health. Sodium, potassium, magnesium, and calcium are all examples of electrolytes.

Enzyme. Enzymes are special proteins made in your body that act to speed up crucial chemical reactions in your body. For example breaking down the food you eat into usable nutrients, building muscles, or repairing cells. Without enzymes these reactions would happen too slowly for your body to work properly.

Hormone. Hormones are the body's chemical messengers. They are produced by glands, and travel through the bloodstream to organs or tissues to tell them exactly what to do and when.

Blood tests and what they can tell us

Urea – U

Urea is a waste product made in the liver when it breaks down protein. The kidneys usually filter it out of the blood and remove it from your body in your pee (urine). People with kidney disease have raised levels of urea. When these become high it can cause symptoms such as feeling unwell, itching, feeling sick (nausea) and/or being sick (vomiting).

Dialysis can help remove urea from your body so it does not build up to harmful levels. The level of urea in your blood tells us how well your dialysis is working at removing urea. A urea level of over 25mmol/L may mean that you need to have more dialysis.

- **Test name:** urea and electrolytes (U&E's)
- **Blood bottle colour:** gold
- **How often?** Monthly

Creatinine (Cr)

Creatinine is a waste product made by your muscles. Healthy kidneys remove creatinine from the blood and pass it out in your pee (urine).

The amount of creatinine in your blood is different for each person. It can be affected by your age, sex, body size, muscle size and how much protein you have in your diet. People with more muscle often have higher creatinine levels.

Dialysis helps remove extra creatinine from your body. Checking the creatinine level in your blood helps us see how well your dialysis is working.

There is no single 'normal' creatinine level for people on dialysis. However, a large rise in your level may mean your dialysis needs to be checked or increased, especially if you have less muscle.

- **Test name:** Urea and Electrolytes (U&Es)
- **Blood bottle colour:** Gold
- **How often?** Monthly

Potassium (K)

Potassium is an electrolyte that helps your muscles and nerves work well. This includes your heart muscle.

Healthy kidneys help keep the right amount of potassium in your blood. When the kidneys do not work well, potassium can build up to unsafe levels.

Both high and low potassium levels can be serious. They can affect your heartbeat. They may cause symptoms such as weak muscles, muscle cramps, pain in your arms or legs and chest discomfort.

Dialysis helps remove extra potassium. Following a healthy diet is also important. Our kidney dietitians can help you with this.

If your potassium level is **6 mmol/L or higher**, you may need more dialysis, changes to your diet, or both.

If your potassium level is **below 4 mmol/L**, it may be a sign that you are not getting enough nutrition. We may ask a kidney dietitian to see you and may suggest more treatment.

- **Test name:** Urea and Electrolytes (U&Es)
- **Blood bottle colour:** Gold
- **How often?** Monthly

Bicarbonate (HCO_3)

Bicarbonate helps keep the right balance of acid in your body (pH balance).

Healthy kidneys help control bicarbonate levels. When the kidneys are not working well, acid can build up in the blood.

Too much acid in the blood can cause tiredness, weakness, changes in breathing and potassium balance.

Dialysis usually helps remove extra acid and improve bicarbonate levels.

Many people with kidney disease take sodium bicarbonate tablets before they start dialysis.

- If you are on **peritoneal dialysis (PD)**, you may still need bicarbonate tablets.
- If you are on **haemodialysis (HD)**, you do not usually need bicarbonate tablets.

A bicarbonate level below **22 mmol/L** is low.

- **Test name:** Bicarbonate
- **Blood bottle colour:** Gold
- **How often?** Monthly

Haemoglobin (Hb)

Ideal range for people on dialysis: 100 to 20 g/L

Haemoglobin is found in red blood cells. It carries oxygen around your body.

Healthy kidneys make a hormone called erythropoietin that helps the body make red blood cells. When the kidneys do not work well, less of this hormone is made. This can lead to anaemia.

Anaemia can cause symptoms such as tiredness, feeling cold, shortness of breath, and problems with focus and concentration

If your haemoglobin level is below 100 g/L, your doctor may start or change treatment with Aranesp® (darbepoetin) to help your body make more red blood cells.

- If you are on PD, this is usually given as an injection under the skin.
- If you are on HD, it can be given through your dialysis line during treatment.

If you would prefer not to have injections because of pain, fear of needles or any other reason, please tell us. We can talk with you about other options.

- **Test name:** Full Blood Count (FBC)
- **Blood bottle colour:** Purple with black ring
- **How often?** Monthly

Ferritin

Ferritin is a protein that shows how much iron is stored in your body.

Iron is needed to make healthy red blood cells. People with kidney disease often need extra iron to help prevent or treat anaemia.

If your ferritin level is low, your doctor may suggest iron treatment as tablets or through a drip into a vein (IV infusion).

If you are:

- **On PD:** An IV iron infusion may be advised if your ferritin is below 100 µg/L.
- **On HD:** An IV iron infusion may be advised if your ferritin is below 200 µg/L.
- **Test name:** Ferritin
- **Blood bottle colour:** Gold

How often do I need to check my iron levels?

PD

- One month after an IV iron infusion, or
- Every 3 months if you have not had a recent infusion and are not taking iron tablets.

HD (Physidia dialysis machine)

- One month after an IV iron infusion, or
- Every 3 months if you have not had a recent infusion and are not taking iron tablets.

HD (B Braun dialysis machine)

- Follow the plan (regime) given by the home dialysis nursing team.

Adjusted Calcium (Adj Ca)

Ideal range: 2.1 to 2.4 mmol/L

Calcium helps keep your bones strong and your muscles working well.

Most calcium is stored in your bones, but a small amount (around 1%) is carried in your blood where it helps many parts of the body work properly.

High or low calcium levels can affect the heart, muscles and nerves.

Symptoms may include muscle cramps, bone pain, broken bones (fractures), muscle twitching, numbness, tingling, changes in mood and finding it hard to concentrate.

Treatment often includes a tablet called **alfacalcidol**, a type of vitamin D.

- **Test name:** Bone Profile
- **Blood bottle colour:** Gold
- **How often?** Monthly

Phosphate (PO₄)

Phosphate is a mineral that helps your body make energy. It also helps keep your muscles, nerves, bones and teeth healthy.

Most phosphate comes from food, especially dairy foods. Nearly all the phosphate in the body (around 70 to 80%) is combined with calcium in our bones. Only a very small amount (around 1%) is in our blood. Healthy kidneys help keep the right amount of phosphate in the blood.

The body keeps phosphate at the right level by:

- changing how much phosphate our gut takes in from the food that we eat
- adjusting how much phosphate our kidneys keep in the body or get rid of in our pee (urine).

When the kidneys do not work well, phosphate levels usually rise.

High phosphate can cause itchy skin, joint pain, weak bones and hardening of blood vessels.

Low phosphate is often linked to poor nutrition.

Dialysis removes some phosphate. You may also need changes to your diet.

If your phosphate level is above **2 mmol/L**, we may prescribe you a medicine called phosphate binder.

Our kidney dietitians can help you follow a lower-phosphate diet.

- **Test name:** Bone Profile
- **Blood bottle colour:** Gold
- **How often?** Monthly

Parathyroid Hormone (PTH)

Parathyroid hormone helps control calcium and phosphate levels in the body.

It is made by four small glands in your neck called the parathyroid glands.

When calcium levels fall, these glands release PTH into the blood. In kidney disease, PTH levels can stay too high.

High PTH levels can, weaken bones, raise phosphate levels, cause joint pain and lead to hardening of the arteries.

Treatment may include:

- increasing your dose of a medicine called alfacalcidol
- starting a medicine called cinacalcet.

Some people may need an operation to remove one or more of the parathyroid glands.

Different labs may use different units when reporting PTH results, so the numbers may vary. We are happy to explain your results.

- **Test name:** PTH
- **Blood bottle colour:** Purple with yellow ring
- **How often?** Every 3 months, or monthly if you are taking cinacalcet

C-Reactive Protein (CRP)

CRP is a protein made by the liver. It rises when there is swelling or irritation (inflammation) somewhere in the body.

This can happen for many reasons such as an infection, an injury or a long-term illness such as arthritis.

CRP does not tell us what is causing the problem, but it can show that something is affecting your health.

People on dialysis may have a slightly raised CRP level. A sudden or large rise may be a sign of an infection or another health problem that needs to be checked.

A CRP level above 30 mg/L may be a cause for concern.

- **Test name:** CRP
- **Blood bottle colour:** Gold
- **How often?** Monthly

Virology (Blood-Borne Virus Screening)

This test checks for infections such as:

- Hepatitis B
- Hepatitis C
- HIV

Because dialysis involves contact with blood, regular testing helps protect both patients and staff. We check virology to:

- help stop infections from spreading
- make sure your immunity stays strong

We also check your protection against hepatitis B. The effect of the vaccine can reduce over time. If your protection falls, you may be offered a booster vaccine.

All dialysis units in the UK follow strict infection control rules. Regular virus testing is an important part of keeping everyone safe.

- **Test name:** Virology / Blood-Borne Virus (BBV) Screen
- **Blood bottle colour:** Gold
- **How often?** Every 3 months (January, April, July and October).

What else do I need to know about my blood tests?

Please **do**:

- **have your blood tests done within the first 2 weeks of each month.** This means:
 - your kidney specialist doctor (renal consultant) can check the results in the 3rd week and make any changes to your medications or dialysis that you need.
 - you get the treatment and care that is right for you when you need it.
- **tell us as soon as you can if you think you may not be able to come for your usual blood test appointment.** We may be able to arrange for you to have your blood test in our unit or, if staffing allows, at your home.
- **email or phone us to let us know whenever you have your blood taken at your GP surgery or hospital.** This is so we can check your results promptly.

Be aware, if you are on HD, do send us 2 lots of blood samples.

These are:

1. **Blood samples taken before your haemodialysis** (pre dialysis samples). This should include the monthly blood tests mentioned above.
2. **Blood samples taken after your haemodialysis** (post-dialysis samples). This should only be Urea and Electrolytes (U&Es) in 1 gold bottle.

Do contact us if:

- you are ever unsure which blood tests you need to send
- you think you have the wrong information on your blood test form (it is for the wrong tests).

We can answer your questions and make sure you have the right blood test form.

Where can I get my monthly blood tests done?

- You may be able to get your monthly blood tests done at your GP surgery. Contact them to check whether you can.
- You can have your blood tests in the phlebotomy (blood tests) department of your local hospital. Please use the contact and booking details below:

Central: Brighton and Haywards Heath

You can use the phlebotomy departments in Brighton in the Royal Sussex County Hospital or Princess Royal Hospital, Haywards Heath, sites:

- **Brighton:** Royal Sussex County Hospital Phlebotomy (in the main hospital outpatient department) Royal Sussex County Hospital Outpatient department, Eastern Road, Kemptown, Brighton, BN2 5BE
- **Haywards Heath:** Princess Royal Hospital Phlebotomy: Princess Royal Hospital, Lewes Road, Haywards Heath, RH16 4EX

For appointments at either hospital you can:

Book by email

uhsussex.east.phlebotomy@nhs.net

Book by phone

01273 092907

Book online: UHSx-Blood tests

www.uhsussex.nhs.uk/services/blood-tests/blood-tests-at-royal-sussex-county-princess-royal-and-alex-childrens-hospital

East: Eastbourne, Bexhill and Hastings

There are 3 phlebotomy departments where you can have blood tests:

- **Eastbourne** Phlebotomy: Eastbourne District Hospital, Kings Drive, Eastbourne, BN21 2UD
- **Bexhill** Phlebotomy: Bexhill CDC, 16 Beeching Road, Bexhill-on-Sea, TN39 3LJ
- **Hastings** (St Leonards) Conquest Phlebotomy, Conquest Hospital, The Ridge, St Leonards-on-Sea, TN37 7RD

For appointments at any of these you can:

Book by phone

0300 131 5560

Monday to Friday

8.30am to 4.30pm

Book online: [Swiftqueue](https://www.swiftqueue.co.uk)

www.swiftqueue.co.uk

West: Shoreham, Worthing and Chichester

There are 3 phlebotomy departments where you can have your blood tests:

- **Chichester** St Richards Hospital Phlebotomy: St Richards Hospital, St Richards Pathology Department, 1st Floor, South Wing (Orange Zone), Spitalfield Lane, Chichester PO19 6SE
- **Worthing** Hospital Phlebotomy: Worthing Hospital, Worthing Pathology Department, 1st Floor, North Wing (Pink Zone), Lyndhurst Road, Worthing BN11 2DH
- **Shoreham** Southlands Phlebotomy: Southlands Hospital, Bay 4, Southlands Hospital Outpatients Department, Upper Shoreham Road, Shoreham-by-Sea BN43 6TQ

For appointments at any of these you can:

Book by phone

01903 285149

Monday to Friday

9.00am to 4.00pm

Book online: UHSx Blood Tests

www.uhsussex.nhs.uk/services/blood-tests/blood-tests-at-royal-sussex-county-princess-royal-and-alex-childrens-hospital

North: Crawley, Horsham and Redhill

There are 3 phlebotomy departments where you can have your blood tests:

- **Crawley** Hospital, West Green Drive, Crawley, RH11 7DH
- **Horsham** Hospital, Hurst Road, Horsham, RH12 2DR
- **Redhill** East Surrey Hospital, Canada Ave, Redhill RH1 5RH

Be aware, there is no longer a walk-in phlebotomy service at these sites, and you must book in advance.

Book by phone

0300 613 4117

Book online: Swiftqueue

www.swiftqueue.co.uk

Who should I contact if I need further information or support after I have read this information?

Contact the Home Dialysis Unit:

Royal Sussex County Hospital, Level 9 – Sussex Kidney Unit

01273 696955 Ext. 64037, 67574, 67584 8.00am to 5.00pm

uhsussex.homedialysis@nhs.net

Where can I access and manage my health information online?

‘Patients Know Best’ app

The Patients Know Best (PKB) app provides a secure way for you to access and manage your health information online. Use it to view your appointments, test results, and medical messages and letters. Please see following registration link and QR code.



Patients Know Best www.patientsknowbest.com

Where can I find further information about kidney conditions and dialysis?

National Kidney Federation (NKF)

www.kidney.org.uk

The National Kidney Federation provides information on kidney disease, including guidance on dialysis and how to understand your test results. They also offer helpful resources for dialysis patients, such as the “Know Your Numbers” toolkit.

Kidney Care UK

www.kidneycareuk.org

‘Kidney Care UK’ patient charity provides support, financial assistance and valuable information for peoples living with kidney disease.

This leaflet is intended for patients receiving care in Brighton & Hove or Haywards Heath

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