

Resource

## Understanding your RA blood tests

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Blood tests are frequently used to help in the diagnosis of rheumatoid arthritis (RA) but also to assess any potential problems with the various drugs that are used to treat RA.? Routine blood tests that are frequently undertaken include a full blood count, urea and electrolytes (measuring kidney function) and a variety of liver function tests. This article covers the blood tests used for diagnosis and general monitoring of RA.

## Which blood tests would normally be used for diagnosis of RA?

RF, ESR, CRP and anti-CCP (ACPA) tests are commonly used (see below for information on each of these tests).

### The erythrocyte sedimentation rate (ESR)

The ESR measures the degree of inflammation in the joints. Blood is taken and placed in a small, thin tube, and the distance the red cells settle in one hour is measured. The more rapidly the red cells settle the more inflammation in the joints. One of the aims of treatment is to reduce the ESR to normal levels.?

### The C reactive protein (CRP)

The CRP also measures the degree of inflammation in the joints. The CRP is a protein produced in the liver when there is inflammation anywhere in the body. Special techniques have to be used to measure the CRP. The more inflammation in the joints, the higher the CRP. The CRP is a more sensitive measure of inflammation than the ESR. This is because, in the normal situation, there is very little if any CRP in the blood.?

### The rheumatoid factor (RF)

The RF is an auto-antibody (a type of protein made by the immune system that acts against the person's own body tissue) found in the blood of patients with rheumatoid arthritis. It can also be found in the blood of patients with other inflammatory diseases and also in some other individuals, particularly the elderly. Thus, the presence of RF does not necessarily indicate the presence of rheumatoid arthritis. (Equally, you can be diagnosed with rheumatoid arthritis and not have the RF factor present in your blood – i.e. seronegative rheumatoid arthritis). Under some circumstances, healthy individuals with rheumatoid factor may go on, after a variable number of years which may be as long as 20, to develop rheumatoid arthritis. There is no way of predicting whether an individual who has RF in their blood will or will not go on to develop rheumatoid arthritis. Furthermore, there is no way of preventing this from happening.?

### Antibodies to CCP

Patients with rheumatoid arthritis can also have in their blood auto-antibodies to proteins altered by inflammation called 'anti-CCP antibodies'. These antibodies can be detected by a special test and are rarely found in patients without rheumatoid arthritis. However, only about 60 percent of patients with rheumatoid arthritis have these antibodies in their circulation. Thus, although they are very specific for rheumatoid arthritis, they are not conclusive because not all patients with rheumatoid arthritis have them. More recently, it has been found that healthy individuals with antibodies to CCP in their blood may go on, after many years, to develop rheumatoid arthritis. This is similar to the situation with rheumatoid factor.?

### Should RF and anti-CCP antibodies be tested if you have joint pains?

Not necessarily. The diagnosis of rheumatoid arthritis depends on the number of joints involved, the

amount of inflammation and the presence of distinctive signs of joint damage on x-ray. The diagnosis of rheumatoid arthritis is not made merely on the presence of RF or antibodies to CCP in the circulation. Self-diagnosis merely on the basis of these tests is not to be recommended. If your GP suspects rheumatoid arthritis after running laboratory tests, early referral to a rheumatologist is important to confirm the diagnosis.

## Which tests are used in the on-going monitoring of RA?

In addition to CRP and ESR, the following may also be used in the continued monitoring of your RA:

### A full blood count

This includes the haemoglobin (Hb), which will indicate whether or not you are anaemic. A slightly low Hb is not uncommon in patients with active RA, but a low Hb could also indicate other problems such as bleeding or a shortage of iron and/or other vitamins (vitamin B12, folate and folic acid in particular). These possibilities will be investigated as necessary by your doctor.

### Kidney function tests

Kidney function is important because many of the drugs used to treat RA can affect kidney function, including anti-inflammatory drugs and also some disease modifying anti-rheumatic drugs (DMARDs). Because many drugs are excreted through the kidneys, it is important to know that kidney function is normal because any evidence of kidney failure can lead to a build-up of drugs and may require a reduction in dosage. ?

### Liver function tests

Liver function abnormalities are also a common feature of drug toxicity/allergy as well as indicating how healthy the liver is in dealing with drugs. Most drugs are broken down in the liver, and abnormalities of the liver can lead to problems with the handling of the drug in the circulation once it has been absorbed. ?

## Which blood tests would normally be used for monitoring when on DMARDs?

Depending on the drug prescribed, tests and frequency may vary, but will commonly include: ESR, CRP, FBC (Full Blood Count: covering red cells, white cells and platelets) and blood chemistry (monitoring effects on the kidney and liver).

For information on what the reference ranges for blood tests mean and how they are determined, please [click here](#) for information from the Lab Tests Online site.

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