

Testing

Ensuring the Welsh Blood Service provides safe blood to patients



welshblood.org.uk
0800 252266

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Tests on your blood

Each time you give a blood donation we take blood samples. Your samples are used in our safety checks back in our laboratory. These safety tests are mandatory and we carry them out on every single blood donation. These mandatory tests may also be done if you give just a blood sample for another test (e.g. for T-cruzi, see later). Very occasionally, this mandatory testing is not carried out. For instance, if we only take a sample to check whether you are anaemic or if we were unable to obtain any samples because of an incomplete donation.

Testing is very important to ensure we provide safe blood to patients. We check your blood group and test for infections that can be passed from donor to patient through blood transfusion.

Tests are carried out mainly by computer controlled, automated machines, which can test many samples, both quickly and easily. Any donation that fails the tests cannot be used.

All samples which react in these tests are sent to a second laboratory to confirm our test results. If the result is likely to be significant to your health we will let you know and tell you what you should do next. (See also “False Reactions”).

Mandatory tests

As well as checking your blood group, we always test for the following:

- **Syphilis:** Syphilis is caused by a bacterium called *Treponema pallidum*. It belongs to a family of infectious bacteria that cause yaws and pinta as well as syphilis. Syphilis is usually sexually transmitted and if untreated, can cause serious disease. Yaws and pinta are tropical diseases, which cause skin and joint problems. All three diseases are fully treatable with antibiotics. The tests we use to screen for syphilis look for antibodies, which are substances the body produces to fight infection. These antibodies can often be found in a person's blood long after the infection has gone. A positive test for syphilis usually relates to an infection that has been treated, but if the test remains positive we are not able to use your blood.

- **Hepatitis B Virus (HBV):** This is a virus, which infects the liver. It can cause inflammation of the liver (hepatitis) and liver damage. HBV is very common in some parts of the world where it is often transmitted from mother to child at birth. Our screening test looks for a substance called Hepatitis B Surface Antigen, which is part of the ‘coat’ of the virus. Most of the donors we identify are long term carriers of the virus who feel completely well. Acute HBV infection is uncommon in blood donors. Occasionally we get a reaction because the donor has recently had an immunisation against HBV and not because infection is present.
- **Human Immunodeficiency Virus (HIV):** This virus causes Acquired Immune Deficiency Syndrome (AIDS). Once an individual becomes infected with HIV then the virus remains in the body and can cause destruction of the immune system. It is mainly transmitted sexually, or from mother to baby, or by injecting drug use. A person who has HIV does not necessarily have AIDS. One of our tests looks for antibodies to the virus, and another looks for the virus itself.
- **Hepatitis C Virus (HCV):** This virus infects the liver and can cause inflammation and liver damage. It is commonly transmitted by injecting drug use as a result of sharing equipment. We have two kinds of test; a test for antibodies and a test for the virus. The test for the virus is an extra safety test and can tell us whether a donor with antibodies is infected or not. Most of the donors we identify with HCV are long-term carriers of the virus who feel completely well.
- **Human T-lymphotropic Virus (HTLV):** This virus infects white blood cells called T-lymphocytes, and can rarely cause a neurological disorder called Tropical Spastic Paraparesis. It can also cause Adult T cell Lymphoma. It is relatively common in some areas of the world and is transmitted mainly from mother to child at birth and by breast-feeding. It can also be transmitted sexually. The test is for antibodies and a positive test means the individual is infected with the virus. Few infected individuals become ill and most carriers feel completely well.

Supplementary tests

Supplementary tests are performed on some but not all donations. They are done to provide specifically tested blood for particular patients or they may be required because of the donor's travel history and some other circumstances.

- **Cytomegalovirus (CMV):** This is a very common virus, which causes a mild ‘flu-like’ illness. People in good health make a full recovery and are only aware of having had “a virus”.
- We test for antibodies and a positive result indicates that the person has had CMV infection and may still be carrying the virus. 50% of the population have had CMV by the age of 50 and we do not tell you about this test result as it is of no significance to your health.

In patients with a poor immune system, however, (bone marrow recipients or small babies) CMV can be a dangerous illness which is why we have to ensure that they receive blood which does not have the virus.
- **T-cruzi:** This is a parasite called *Trypanosoma cruzi*. It is found in certain parts of Central and South America and is transmitted by biting insects or from mother to baby at the time of birth or through blood transfusion received in this part of the world. Carriers of the parasite are at risk of developing Chagas' Disease, which can cause destruction of the muscles of the heart and intestines. Not all carriers become ill.

Our test looks for antibodies to the infection. A donor's place of birth, their mother's place of birth, the donor's travel history or history of transfusion in certain parts of Central and South America determines whether the test is required.

Retention of samples

After testing, a small quantity of each sample is frozen and stored long-term in our laboratory in case any problems subsequently arise in the donor or the patient who has received the blood.

- **Malaria:** People who have lived in or visited a tropical area may be at risk of being infected with malaria, which is transmitted by mosquitoes. People who have had malaria produce antibodies to the parasite. These antibodies usually disappear on recovery from the disease. However, some people who appear to have recovered, are still able to carry the parasite and therefore continue to produce antibodies. We have introduced a test that looks for malaria antibodies. A positive result means that at sometime in the past that person has been infected with malaria and may still be carrying the parasite.

False reactions

All laboratory tests can produce ‘unclear results’ or false reactions. This is usually a weak reaction in the test, which, when the sample is tested at the second laboratory confirms the result is negative. False reactions are a recognized complication of all biological tests. They are of no significance for the health of the donor.

We hope that you have found this leaflet helpful. If you would like any further information please speak to one of our staff at the blood donation session or ring 01443 622126 during normal working hours Monday to Friday and ask to speak to someone in our Medical Department.



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