TEST

HLA-B27 antigen

A blood test that checks for HLA-B27, an inherited immune-system marker linked with certain inflammatory conditions.

WHAT IT MEASURES
Presence of the inherited HLA-B27 immune-system marker

SAMPLE
Blood

FASTING NEEDED?
No

HOW LONG IT TAKES
Usually 5 to 10 minutes

RESULTS IN
Usually several days, varying by laboratory

USED FOR
Supporting diagnosis of certain inflammatory conditions

MAIN LIMITATION
A positive result does not prove inflammatory disease

Overview

The HLA-B27 antigen test checks whether you carry HLA-B27. This is an inherited marker found on the surface of white blood cells and many other cells.

HLA stands for human leukocyte antigen. HLA proteins help the immune system tell the body's own cells from substances that may not belong there. HLA-B27 is one version of an HLA protein.

HLA-B27 is associated with several inflammatory conditions, especially axial spondyloarthritis, which mainly affects the spine and the joints connecting the spine to the pelvis. It is also associated with reactive arthritis and some cases of acute anterior uveitis, an inflammation inside the front of the eye.

The association is not the same as a diagnosis. Many people who carry HLA-B27 never develop an associated condition. Some people with these conditions do not carry HLA-B27.

Most laboratories report the result as positive, negative, or occasionally inconclusive. Some test the HLA-B27 protein using white blood cells. Others examine DNA for genetic variants

that produce HLA-B27.

Why the test is ordered

The test may be ordered when your symptoms, examination, family history, imaging, or other blood tests suggest a condition associated with HLA-B27.

For example, it may help assess persistent back pain that has features of inflammation, such as marked morning stiffness or improvement with movement. It can also support an assessment of unexplained joint swelling, pain where tendons attach to bone, or repeated episodes of acute anterior uveitis.

HLA-B27 may be considered when reactive arthritis is suspected. This is joint inflammation that can occur after certain infections. The test cannot show whether you currently have an infection or whether an infection caused your symptoms.

The result is one piece of evidence. It does not measure inflammation, show how active a condition is, or predict exactly what will happen over time.

Who should have the test

HLA-B27 testing is most useful when there is already a clinical reason to consider an associated inflammatory condition. A healthcare professional may recommend it after reviewing your symptoms, medical history, family history, examination, and other results.

It is not normally used to screen people without symptoms. Testing everyone would identify many healthy carriers without showing who will later become unwell.

Testing a healthy relative is not usually enough to predict their future health. Although HLA-B27 can be inherited, other genes and environmental factors also affect whether an associated condition develops.

How to prepare

No fasting is required. You can usually eat, drink water or coffee, take your usual medicines, and follow your normal routine.

Tell the person arranging the test if you have had a recent blood transfusion or a bone marrow or stem cell transplant. These can sometimes affect how a blood-based genetic result is interpreted.

You generally should not stop any medicine for this test unless you have been given specific instructions for another test being collected at the same time.

What happens during the test

A healthcare professional takes a small blood sample, usually from a vein inside your elbow or on the back of your hand.

A band may be placed around your upper arm to make the vein easier to find. The skin is cleaned, and a needle is inserted into the vein. You may feel a brief scratch or sting.

The blood is collected into a tube and sent to a laboratory. The appointment usually takes only a few minutes, although waiting times may make the visit longer.

Understanding your results

A positive result means HLA-B27 was detected. This can make an HLA-B27-associated condition more likely when you also have a fitting pattern of symptoms or examination findings. It does not prove that you have such a condition.

How useful a positive result is partly influenced by your clinical background and ancestry. HLA-B27 is more common in some populations than others. A positive result in someone without relevant symptoms often has limited medical meaning.

A negative result means HLA-B27 was not detected by the laboratory's method. This can make some associated conditions less likely, but it does not rule them out. Axial spondyloarthritis, uveitis, and reactive arthritis can occur in people who are HLA-B27 negative.

An inconclusive or indeterminate result means the laboratory could not clearly classify the sample. A repeat sample or a DNA-based test may be suggested.

There is no universal numerical reference range because this is usually a positive-or-negative test. Laboratory methods and reporting thresholds differ. Interpretation also varies with age, sex, pregnancy status, medicines, ancestry, symptoms, and the wider clinical context, even though these factors usually do not change whether you inherited HLA-B27.

What affects the results

HLA-B27 is inherited and normally stays the same throughout life. Food, coffee, exercise, stress, pregnancy, and the time of day do not change whether you carry it. Routine medicines

also do not alter your inherited HLA type.

A bone marrow or stem cell transplant is an important exception. After a successful transplant, blood cells may carry the donor's HLA type rather than the type you were born with. A blood test may therefore show the donor's HLA-B27 status.

A recent blood transfusion can sometimes complicate DNA testing because donated blood may contain a small number of donor white blood cells. The effect is more relevant after a large or recent transfusion. Tell the laboratory or healthcare professional so the method and timing can be considered.

The testing method also matters. Protein-based tests can occasionally react with similar HLA-B proteins, creating an unclear or falsely positive result. DNA-based testing may be used to clarify it.

Too few usable white blood cells, delayed transport, clotting, or poor sample storage may prevent a reliable result. This usually leads to an inconclusive report rather than a definite positive or negative one.

Accuracy and limitations

There is no single miss rate or false-positive rate that applies to every HLA-B27 test. Accuracy differs by laboratory method, equipment, the genetic variants included in a DNA assay, and how unclear results are handled.

Flow cytometry looks for HLA-B27 protein on white blood cells. It is quick and generally reliable, but antibodies used in the test may react with similar HLA types. DNA testing is often better for confirming an uncertain or unexpected protein-based result.

A technically correct positive result can still be misleading if it is treated as proof of disease. Many HLA-B27-positive people remain healthy. In this sense, the test can appear to "say yes" when the real question is whether inflammation is causing your symptoms.

A negative test can also miss the clinical answer. Not everyone with an associated inflammatory condition carries HLA-B27. If symptoms remain concerning, examination, imaging, or other tests may provide more useful information.

HLA-B27 does not measure current inflammation. Blood tests such as C-reactive protein or erythrocyte sedimentation rate may help assess inflammation, although they can also be normal. MRI or X-rays may be more appropriate for examining the spine and pelvic joints. A slit-lamp eye examination is needed to diagnose anterior uveitis.

Risks and complications

A blood draw may cause a small bruise, brief soreness, or light-headedness. Significant bleeding or infection at the needle site is uncommon.

What happens next

Your result is usually reviewed alongside your symptoms, examination, family history, inflammatory markers, and any imaging. Because HLA-B27 is inherited, repeat testing is rarely useful after a clear result.

A positive result with relevant symptoms may lead to further assessment, such as imaging or referral to a rheumatology or eye specialist. A negative result may redirect the assessment, but it should not automatically end it if symptoms still suggest inflammation.

Discussing a result at a routine follow-up appointment is usually appropriate. The test result itself is not an emergency.

Seek urgent, same-day assessment for a painful red eye, strong sensitivity to light, or new blurred vision, because these can occur with acute anterior uveitis and need an eye examination. Sudden severe loss of vision requires emergency care.

Common questions

Can I drink coffee before the test?

Yes. Coffee does not affect HLA-B27. Follow any separate fasting instructions if other blood tests are being collected at the same appointment.

Does the time of day matter?

No. HLA-B27 is an inherited marker, so morning and afternoon samples should give the same result.

Can I exercise beforehand?

Yes. Exercise does not change whether HLA-B27 is present.

Does a positive result mean I have ankylosing spondylitis?

No. A positive result only shows that you carry HLA-B27. Diagnosis requires an assessment of your symptoms, examination findings, and sometimes imaging or other blood tests.

Can HLA-B27 be passed to my children?

Yes. HLA-B27 can be inherited, but inheriting it does not mean a child will develop an associated condition.

Will I need the test again?

Usually not after a clear result. Repeat or DNA-based testing may be considered if the first result is inconclusive, conflicts with earlier results, or was affected by a stem cell transplant or recent transfusion.

Sources

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