TEST

ACE blood test

An ACE blood test measures an enzyme that may rise with sarcoidosis and some other conditions.

WHAT IT MEASURES
Angiotensin-converting enzyme activity in blood

SAMPLE
Blood

FASTING NEEDED?
No

HOW LONG IT TAKES
Usually under 10 minutes

RESULTS IN
Usually several days, varying by laboratory

USED FOR
Supporting diagnosis and sometimes monitoring sarcoidosis

MAIN LIMITATION
Normal and high results both occur without sarcoidosis

Overview

An ACE blood test measures the activity of angiotensin-converting enzyme, usually shortened to ACE. This enzyme helps control blood pressure by acting on hormones in your blood.

ACE is found throughout the body. It may be produced in larger amounts by granulomas, which are organized clusters of immune cells. Granulomas can develop in sarcoidosis, an inflammatory condition that can affect the lungs, lymph nodes, skin, eyes, and other organs.

An ACE result cannot diagnose sarcoidosis by itself. Some people with active sarcoidosis have a normal result, while people without sarcoidosis can have a high result. The test must be considered alongside your symptoms, examination, scans, and sometimes a tissue biopsy.

Why the test is ordered

Your clinician may order an ACE blood test when your symptoms or imaging results suggest sarcoidosis. For example, a chest X-ray or CT scan may show enlarged lymph nodes or

changes in the lungs.

The result may provide supporting information while other possible causes are investigated. These can include infections, immune conditions, and certain blood or metabolic disorders.

ACE testing is sometimes used during follow-up if your level was high before treatment. However, changes in ACE do not always match changes in sarcoidosis activity. Symptoms, examination findings, imaging, breathing tests, and tests of affected organs may be more informative.

Who should have the test

ACE is not a general screening test for people without symptoms or relevant imaging findings.

You may be offered the test if:

Whether the test is useful depends on your medical history and the question being investigated. It is not needed for every person with suspected or confirmed sarcoidosis.

- Sarcoidosis is one possible explanation for your symptoms or scans
- You have known sarcoidosis and ACE was previously a useful marker
- Your clinician is investigating another condition associated with altered ACE activity

How to prepare

You can usually eat and drink normally before an ACE blood test. Fasting is not generally required, so water and your usual coffee are normally acceptable unless you are having other tests that require fasting.

Tell the person ordering the test about all prescription medicines, over-the-counter medicines, and supplements you take. ACE inhibitor medicines, including lisinopril, ramipril and enalapril, can make ACE activity very low or unmeasurable.

Do not stop an ACE inhibitor or any other medicine unless the clinician who prescribed it tells you to. The laboratory may interpret the result differently or decide that testing while you take an ACE inhibitor like lisinopril or ramipril will not answer the intended question.

What happens during the test

A healthcare professional places a small needle into a vein, usually in your arm. Blood is

collected into a tube and sent to a laboratory.

You may feel a brief scratch or sting. The blood draw usually takes less than 10 minutes, although the full appointment may be longer if you are having other tests.

You can normally return to your usual activities immediately afterward.

Understanding your results

Your report will show your ACE result and the laboratory's reference range. Laboratories may use different testing methods, units, and ranges, so a result should be compared with the range printed on your own report.

Ranges and interpretation can also vary with age, sex, pregnancy status, medicines, and clinical context. Children and teenagers may naturally have higher ACE activity than adults.

A high result can support a diagnosis of sarcoidosis when the symptoms and imaging findings also fit. It does not confirm the condition. Raised ACE activity can also occur with conditions such as Gaucher disease, overactive thyroid, some liver disorders, and certain infections that produce granulomas.

A result within the laboratory range does not rule out sarcoidosis. Some people with active disease have normal ACE activity.

A low result is often related to ACE inhibitor treatment. By itself, a low ACE level usually does not identify a specific illness.

What affects the results

Several factors can change ACE activity without indicating that sarcoidosis has appeared, improved, or worsened:

Eating, drinking coffee, the time of day, and ordinary activity do not usually have a major effect on this test. Recent transfusion is not generally considered an important influence on ACE activity. If results do not fit the rest of your assessment, repeating the test with the same laboratory may make comparison easier.

- ACE inhibitor medicines: These directly block the enzyme and can produce a very low result.
- Steroids and other treatments: Treatment that reduces inflammation may lower ACE, but the change does not always reflect disease activity accurately.

- Age: Children and teenagers often have higher values than adults and need age-appropriate interpretation.
- Pregnancy: ACE activity may be lower during pregnancy, making the usual adult comparison less helpful.
- Inherited differences: Variations in the gene that controls ACE can give people naturally higher or lower baseline levels.
- Other illnesses: Granuloma-forming infections, Gaucher disease, thyroid disease, and some liver conditions can raise ACE.
- Laboratory method: Different methods can produce different values, so results from separate laboratories may not be directly comparable.

Accuracy and limitations

ACE testing misses a meaningful number of people who have sarcoidosis. A normal result therefore cannot safely exclude the condition.

It can also be high when sarcoidosis is not present. This means an abnormal result may lead to further tests without ultimately identifying sarcoidosis. The result is most useful when there is already a reasonable suspicion based on symptoms or imaging.

ACE cannot show which organ is affected or how much damage has occurred. It also does not reliably separate active inflammation from permanent scarring.

Chest imaging, lung function tests, eye examinations, heart tests, and blood or urine tests may be more appropriate for assessing particular organs. When diagnostic certainty is needed, a tissue biopsy may provide stronger evidence by showing granulomas. Even then, infections and other causes must be considered before sarcoidosis is diagnosed.

Risks and complications

The risks are those of a routine blood draw. You may develop a small bruise or mild soreness, and some people feel briefly light-headed or faint.

Serious complications are uncommon. Applying pressure to the area for a few minutes helps reduce bruising.

What happens next

Your clinician will interpret the result with your symptoms, scans, medicines, previous ACE measurements, and other test results.

A high or low ACE result is not usually an emergency. Routine follow-up may involve discussing possible explanations, checking whether medicines affected the result, or arranging imaging, breathing tests, an eye assessment, or a biopsy. A normal result may still require follow-up if other findings suggest sarcoidosis.

Contact your healthcare team promptly if you have worsening breathlessness, new eye pain, or a change in vision, regardless of your ACE result.

Seek emergency medical help for severe difficulty breathing, chest pain, fainting, sudden weakness, or sudden major vision loss. These symptoms need urgent assessment rather than waiting for an ACE result or routine appointment.

Common questions

Can I drink coffee before an ACE blood test?

Usually, yes. The ACE test itself does not require fasting. If other blood tests are being taken at the same time, follow the preparation instructions for those tests.

Does the time of day matter?

There is usually no required testing time. For follow-up measurements, using the same laboratory can be more important than having blood taken at exactly the same hour.

Can I exercise beforehand?

Normal activity is unlikely to meaningfully change the result. There is no standard requirement to avoid exercise, although you should follow any separate instructions for other tests.

Should I stop my blood pressure medicine?

Do not stop it yourself. ACE inhibitors can greatly lower the measured activity, but suddenly changing treatment may be unsafe. Tell your healthcare team and the laboratory which medicines you take.

Does a high result mean I have sarcoidosis?

No. It may support the diagnosis when other findings fit, but several other conditions can raise ACE. Further assessment is usually needed.

Can a normal result rule out sarcoidosis?

No. Many people with sarcoidosis have an ACE result within their laboratory's reference range. Imaging, organ-specific tests, and sometimes a biopsy may still be needed.

Sources

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