TEST

Factor V assay

A factor V assay measures how well factor V helps your blood clot.

WHAT IT MEASURES
How well clotting factor V works in plasma

SAMPLE
Blood

FASTING NEEDED?
No

HOW LONG IT TAKES
About 5 to 10 minutes

RESULTS IN
Often within several days; timing varies by laboratory

USED FOR
Diagnosing deficiency or an inhibitor; sometimes monitoring treatment

MAIN LIMITATION
Anticoagulants and other clotting problems can falsely lower activity

Overview

A factor V assay is a blood test that measures the activity of factor V, a protein that helps blood clot. Factor V works with other clotting factors to produce fibrin, which strengthens a clot.

The usual test is a factor V activity assay . It measures how well factor V works, rather than simply how much is present. The laboratory adds your plasma-the liquid part of blood-to specially prepared plasma and measures clotting time.

This is not the same as a factor V Leiden test . Factor V Leiden is an inherited gene change associated with increased blood-clot risk. People with it usually have normal factor V activity, so an activity assay cannot reliably detect it.

Why the test is ordered

Your healthcare professional may order this assay after routine tests, such as prothrombin time (PT) and activated partial thromboplastin time (aPTT), show abnormal clotting.

The assay can help investigate:

The result must be interpreted with other tests. A low result does not identify the cause by itself.

- Unexplained or unusually heavy bleeding
- Abnormal bleeding after surgery, dental work or childbirth
- A prolonged PT and aPTT
- Possible inherited factor V deficiency
- An acquired factor V inhibitor
- Reduced clotting-factor production from liver disease
- Clotting-factor consumption, such as disseminated intravascular coagulation
- Response to plasma replacement for known factor V deficiency

Who should have the test

This is not a routine screening test. It is mainly used when your bleeding history or laboratory results suggest a problem involving factor V or several clotting factors.

Testing may also be considered if a close relative has confirmed inherited factor V deficiency, or before a procedure if you have a known deficiency or significant bleeding history.

The assay is not usually used to investigate unexplained blood clots or determine whether you carry factor V Leiden. Those questions require different tests.

How to prepare

You usually do not need to fast. You may eat and drink normally unless other scheduled tests require fasting.

Tell the healthcare professional about all medicines, over-the-counter products and supplements you take, especially heparin, direct oral anticoagulants and other medicines that affect clotting.

Do not stop an anticoagulant like warfarin or apixaban on your own. Stopping it could be harmful, and the sample may instead need to be timed around treatment.

Also report any recent plasma or platelet transfusion, which can temporarily change the result.

What happens during the test

A healthcare professional draws blood from a vein, usually inside your elbow or on the back of your hand. The skin is cleaned, and a small needle is inserted.

Blood is collected into a tube containing sodium citrate, which prevents clotting before analysis. The correct ratio of blood to citrate is important.

The draw usually takes a few minutes. The plasma is separated and may be frozen for transport to a specialist laboratory.

Understanding your results

Results are commonly reported as factor V activity, often as a percentage compared with pooled normal plasma. Use the reference interval on your report because ranges and interpretation vary by laboratory and clinical context.

A low factor V activity means factor V did not support clotting normally in the assay. Possible causes include:

A very low result may support factor V deficiency, but the level does not perfectly predict bleeding severity. Factor V stored in platelets, other clotting factors and the type of injury or procedure also matter.

A result within range makes a substantial deficiency less likely. It does not exclude factor V Leiden, abnormalities hidden by recent transfusion or other causes of bleeding.

High activity usually does not establish a diagnosis by itself. This assay is not generally used alone to assess blood-clot risk.

- Inherited factor V deficiency
- An acquired factor V inhibitor
- Reduced production due to liver disease
- Consumption during a serious clotting disorder
- Interference from a medicine or sample problem

What affects the results

Heparin and some direct oral anticoagulants can slow the clot-based assay and make activity appear low. Lupus anticoagulant may also interfere, although it is usually associated with

clotting rather than bleeding.

Recent plasma transfusion can temporarily raise factor V activity and hide a deficiency. Platelet transfusions and plasma exchange may also change the result.

Collection and handling problems can make results unreliable. These include an underfilled citrate tube, contamination from a heparin-containing line, clotting in the tube, delayed processing or incorrect storage.

People with a very high proportion of red blood cells, called a high hematocrit, may need the amount of citrate adjusted. Without adjustment, activity can appear lower than it is.

Liver disease and widespread clotting-factor consumption can genuinely reduce factor V but usually affect other clotting tests too. Pregnancy, age, medicines and recent treatment may also influence interpretation.

Accuracy and limitations

A properly collected activity assay can identify a marked reduction in plasma factor V. However, one result cannot prove whether the problem is inherited, acquired or caused by another illness.

Anticoagulants, interfering antibodies and collection problems can falsely lower activity. Recent plasma transfusion can hide a deficiency. The assay also measures factor V in plasma, not the factor V stored in platelets, so it cannot fully predict bleeding risk.

If an inhibitor is suspected, a mixing study may be performed by combining your plasma with normal plasma. Improved clotting supports a missing factor; little or no improvement can suggest an inhibitor. A specific inhibitor assay may then be needed.

Genetic testing may help confirm inherited factor V deficiency in selected cases. Factor V Leiden requires genetic testing or an activated protein C resistance test; a standard activity assay is not a substitute.

Risks and complications

The main risks are brief discomfort, a small bruise and feeling light-headed during or after the blood draw. Serious complications from routine venipuncture are uncommon.

What happens next

A normal result may lead to tests for other clotting factors, platelet problems or non-blood causes of bleeding. An unexpected low result is often repeated, particularly if medicine interference or a sample problem is possible.

Further testing may include liver tests, other factor assays, a mixing study, an inhibitor assay or genetic testing. If deficiency is confirmed, follow-up may include planning for surgery, dental procedures, pregnancy or treatment of bleeding.

A low result without active bleeding is usually managed through routine follow-up. Seek urgent medical care for bleeding that will not stop, vomiting blood, black or heavily blood-stained stool, or a sudden severe headache or neurological symptoms. Call emergency services for heavy uncontrolled bleeding, collapse or breathing difficulty.

Common questions

Can I drink coffee before a factor V assay?

Yes. Fasting is not normally required. Follow separate instructions if other tests are being collected.

Does the time of day matter?

Usually not. Timing may matter if you take an anticoagulant that could interfere with the assay.

Can I exercise beforehand?

Ordinary activity is not known to meaningfully alter factor V activity. Resting briefly may make the blood draw easier.

Should I stop my blood thinner first?

No, unless the healthcare professional responsible for it gives specific instructions. Some anticoagulants affect the assay, but stopping treatment without a plan may be unsafe.

Is this a test for factor V Leiden?

No. Factor V Leiden is investigated using a genetic or activated protein C resistance test.

How soon after a transfusion can I be tested?

Recent plasma or platelet transfusion can temporarily change the result. Tell the testing team what you received and when. The best timing depends on why the assay is needed and how urgently the information is required.

Sources

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