TEST

Anti-glomerular basement membrane blood test

A blood test that looks for antibodies linked to kidney and lung inflammation

WHAT IT MEASURES
Antibodies that attack kidney and lung basement membranes

SAMPLE
Blood

FASTING NEEDED?
No

HOW LONG IT TAKES
Usually 5-10 minutes

RESULTS IN
Usually 1-3 days; varies by laboratory

USED FOR
Diagnosis and monitoring

MAIN LIMITATION
A negative result can miss low-level antibodies

Overview

The anti-glomerular basement membrane blood test looks for anti-GBM antibodies. These are immune proteins that mistakenly target a thin supporting layer in the kidneys called the glomerular basement membrane.

The same target is found in the tiny air sacs of the lungs. Anti-GBM antibodies can therefore be associated with inflammation and bleeding in the kidneys, lungs, or both.

The related illness is called anti-GBM disease. It was historically called Goodpasture syndrome, although that term is used less consistently today. The blood test does not diagnose the condition by itself. Symptoms, urine tests, kidney function, imaging, and sometimes a kidney biopsy are also important.

Why the test is ordered

The test is mainly used when a healthcare professional suspects rapidly developing kidney inflammation, bleeding in the lungs, or both.

It may be ordered when other tests show:

The test may be ordered with an ANCA blood test. ANCA antibodies are linked to other conditions that inflame small blood vessels. Some people have both ANCA and anti-GBM antibodies, which can affect treatment and follow-up.

After anti-GBM disease is identified, repeat testing may be used to follow antibody levels during treatment.

- A rapid decline in kidney function
- Blood or protein in the urine
- Red blood cell casts, which are clusters of blood cells seen under a microscope
- Lung bleeding without another clear explanation
- A combination of kidney and breathing problems

Who should have the test

This is not a routine screening test for people who feel well. It is usually ordered because symptoms or other results suggest a specific kidney or lung problem.

You may need the test if you have unexplained kidney injury, blood and protein in your urine, or suspected lung bleeding. Symptoms alone cannot confirm the cause because other conditions can produce similar findings.

Family members do not usually need testing simply because someone in the family has anti-GBM disease. The test detects current antibodies rather than inherited risk.

How to prepare

You do not usually need to fast. You can generally eat, drink water, and have coffee before the blood draw unless another test requires fasting.

Continue your usual medicines unless your healthcare team gives different instructions. Do not delay or stop prescribed treatment to improve the accuracy of this test.

Tell the team if you have started plasma exchange, dialysis, corticosteroids like prednisone or hydrocortisone , or other immune-suppressing treatment. Plasma exchange removes antibodies from the blood, while immune-suppressing medicines can reduce their production. These treatments may lower the result.

When possible, blood is collected before plasma exchange begins. However, urgent treatment

should not be delayed solely to obtain a sample.

What happens during the test

A healthcare professional places a needle into a vein, usually in your arm. A small amount of blood is collected into a tube and sent to a laboratory.

The blood draw usually takes 5 to 10 minutes. You can normally leave straight afterward.

The laboratory separates the liquid part of the blood, called serum, and tests it for antibodies that bind to the glomerular basement membrane.

Understanding your results

Results are commonly reported as negative, positive, or borderline. Some laboratories also provide a number with a laboratory-specific cutoff.

A negative result means the laboratory did not detect anti-GBM antibodies above its cutoff. This makes anti-GBM disease less likely but does not completely rule it out. Some people have antibody levels too low for the blood test to detect.

A positive result means anti-GBM antibodies were detected. In someone with compatible kidney or lung findings, this strongly supports anti-GBM disease. It does not show how much damage has occurred.

A borderline or equivocal result is close to the cutoff. The test may be repeated or checked with another method, especially when the result does not match your symptoms and other findings.

There is no single number interpreted the same way everywhere. Ranges vary by laboratory and testing method, and results must be considered in clinical context. Follow the range printed on your report.

What affects the results

Antibody levels may fall after plasma exchange, corticosteroids, or other immune-suppressing treatment. A sample collected after treatment starts may therefore be negative even when antibodies were present earlier.

Very low antibody levels can fall below the laboratory cutoff. Unusual antibodies may also bind to parts of the basement membrane that a particular test is not designed to detect.

Laboratories use different platforms, target proteins, and cutoffs. This can produce different numbers, especially near the borderline range. Results from different methods may not be directly comparable.

Poor sample quality, including marked breakdown of blood cells or heavy fat content, can interfere with some methods. The laboratory may reject the sample or add a caution to the report.

Pregnancy, ordinary exercise, time of day, coffee, and most medicines are not known to meaningfully change the antibody result. A routine red blood cell transfusion is not expected to cause a positive result. Plasma exchange or large-volume plasma treatment is more relevant because it can lower circulating antibodies.

Accuracy and limitations

Modern anti-GBM antibody tests correctly identify most people with typical anti-GBM disease. A positive result that matches kidney or lung findings is usually persuasive.

The test can miss the condition when antibody levels are very low, antibodies have been removed by treatment, or they are mostly attached to kidney tissue rather than circulating in the blood.

A positive result can occasionally be misleading because of non-specific binding or assay interference. If a low positive result does not fit the clinical picture, another method may be used for confirmation.

A kidney biopsy may be the better test when suspicion remains high despite a negative blood result. A small tissue sample is examined for the characteristic smooth, linear pattern of antibodies along the basement membrane.

The blood test cannot measure kidney damage or lung bleeding. Creatinine and estimated glomerular filtration rate assess kidney function, urine tests look for blood and protein, and imaging or other procedures may be needed to assess the lungs.

Risks and complications

The risks are those of a routine blood draw. You may have brief pain, a small bruise, or feel lightheaded; serious complications are uncommon.

What happens next

A negative result may lead to routine follow-up or testing for other causes, depending on your symptoms, kidney function, urine findings, and imaging.

A positive result usually prompts urgent specialist assessment. Additional tests may include repeat kidney blood tests, urine microscopy, ANCA testing, chest imaging, and a kidney biopsy. Repeat anti-GBM measurements may be used during treatment, but the antibody number is not interpreted alone.

Seek urgent medical care if you develop much less urine than usual, rapidly worsening swelling, or new shortness of breath.

Call emergency services for severe difficulty breathing, coughing up more than small streaks of blood, fainting, confusion, or blue or grey lips. These symptoms require immediate assessment regardless of whether your result is available.

Common questions

Can I drink coffee before the test?

Yes. Coffee does not usually affect anti-GBM antibody testing. Follow separate instructions if other blood tests are being collected at the same time.

Do I need to fast?

No. Fasting is not normally required.

Does the time of day matter?

No specific collection time is usually needed. Antibody levels are not known to follow a clinically important daily pattern.

Can I exercise beforehand?

Ordinary exercise should not meaningfully affect the result. If you feel unwell or short of breath, avoid strenuous activity and seek medical advice rather than exercising before the test.

Does a positive result prove I have anti-GBM disease?

Not by itself. A positive result must be considered with your symptoms, urine findings, kidney function, lung tests, and sometimes a kidney biopsy.

Why might the test be repeated?

It may be repeated to confirm a borderline result, check an unexpected result with another method, or monitor antibody levels during treatment.

Sources

- KDIGO 2021 Clinical Practice Guideline for the Management of Glomerular Diseases , Kidney Disease: Improving Global Outcomes, anti-GBM disease chapter
- Anti-Glomerular Basement Membrane Disease , McAdoo SP and Pusey CD, Clinical Journal of the American Society of Nephrology , 2017
- Diagnosis and classification of Goodpasture's disease (anti-GBM) , Hellmark T and Segelmark M, Journal of Autoimmunity , 2014
- Glomerular Basement Membrane Antibodies, IgG, Serum , Mayo Clinic Laboratories test catalog
- Rapidly Progressive Glomerulonephritis , ARUP Consult, laboratory testing guidance