TEST

Antinuclear antibody panel

A blood test that looks for antibodies associated with certain autoimmune diseases

WHAT IT MEASURES
Antibodies reacting with structures inside cell nuclei

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 systemic autoimmune diseases

MAIN LIMITATION
Positive results can occur without systemic autoimmune disease

Overview

An antinuclear antibody panel is a group of blood tests used to look for certain autoantibodies . These are immune proteins that react with parts of your own cells. Antinuclear antibodies, or ANA, react with structures in or around a cell's nucleus.

"ANA panel" does not describe one standard set of tests. A laboratory may perform an ANA screening test followed by more specific tests if the screen is positive, or it may test several antibodies at once.

Specific antibodies may include anti-double-stranded DNA, anti-Smith, anti-RNP, anti-Ro/SSA, anti-La/SSB, anti-centromere and anti-Scl-70. The exact tests should appear on your laboratory report.

An ANA panel can support the diagnosis of systemic autoimmune diseases such as lupus, Sjögren disease, systemic sclerosis and mixed connective tissue disease. It cannot diagnose any condition by itself.

Why the test is ordered

Your clinician may order an ANA panel when your symptoms, examination or other results suggest a systemic autoimmune disease affecting more than one part of the body.

Reasons may include:

ANA testing is not generally useful as broad screening when there are no relevant symptoms or findings. Positive results can occur in people without autoimmune disease.

ANA levels also do not reliably show whether a known disease is becoming more or less active. Symptoms and other blood or urine tests are usually more useful for monitoring.

- Persistent inflammation in several joints
- Certain sun-sensitive or unusual rashes
- Unexplained inflammation around the lungs or heart
- Persistent dry eyes and dry mouth
- Raynaud phenomenon, where fingers change colour in the cold
- Muscle weakness or skin tightening
- Kidney, blood-count or urine abnormalities

Who should have the test

The test is most helpful when there is reasonable concern about a systemic autoimmune condition. Your clinician considers your symptoms, examination, medical history and previous results before ordering it.

Children and adults can have ANA testing. Interpretation must account for factors such as age, sex, pregnancy, medicines and the reason for testing.

If you already have a positive ANA, repeating the same test may add little unless your clinical situation or the required method has changed. New symptoms may call for a more specific antibody test instead.

How to prepare

You do not usually need to fast. You can normally eat, drink water and take your usual medicines before the blood draw.

Tell the clinician or laboratory about prescription medicines, over-the-counter products and

supplements. Do not stop a prescribed medicine unless the prescriber tells you to do so.

Also mention recent infections, pregnancy, immunoglobulin treatment or a recent blood-product transfusion, as these may affect interpretation.

Wear clothing that allows access to your upper arm. If blood tests make you feel faint, tell the person taking the sample so you can lie down if needed.

What happens during the test

A healthcare professional cleans an area of skin, usually inside your elbow, and inserts a needle into a vein. Blood is collected into one or more tubes.

You may feel a brief scratch or sting. The blood draw usually takes only a few minutes.

The sample is sent to a laboratory. Some laboratories use indirect immunofluorescence to examine how antibodies bind to prepared cells. Others use automated methods that test for selected antibodies.

Understanding your results

ANA results may be reported as positive or negative and may include a titre , staining pattern or numerical value.

A titre shows how much the sample can be diluted before antibodies are no longer detected. A higher second number generally means antibodies remained detectable after greater dilution. Methods and thresholds differ, so results from different laboratories may not be directly comparable.

A staining pattern describes where antibodies attached to test cells. Examples include homogeneous, speckled, centromere and nucleolar patterns. Patterns may guide further testing but do not identify a disease by themselves.

Each specific antibody in the panel has its own result. Some are more closely associated with particular diseases than a general ANA result, but they must still be interpreted alongside symptoms and other findings.

A positive result does not necessarily mean you have an autoimmune disease. Low-level ANA can occur in healthy people, particularly with increasing age, and may also occur with infections, medicines or other conditions.

A negative result makes several ANA-associated diseases less likely but does not exclude every autoimmune condition.

What affects the results

The testing method matters. Indirect immunofluorescence exposes antibodies to many cell structures, while solid-phase or multiplex tests detect only selected targets. A person may therefore test positive by one method and negative by another.

Other influences include:

Food, coffee, ordinary activity and time of day do not usually have an important effect. Kidney function does not generally make ANA measurement inaccurate, although kidney and urine tests may affect what the result means.

- Age: ANA becomes more common with increasing age
- Medicines: some can cause ANA or a lupus-like reaction
- Infections: temporary antibody production can cause a positive result
- Immunosuppressive treatment: treatment may reduce detectable levels
- Immunoglobulin infusions: donated antibodies can temporarily affect testing
- Pregnancy: immune changes may affect interpretation
- Recent blood products: plasma-containing products may complicate results
- Laboratory thresholds: cut-offs vary between laboratories

Accuracy and limitations

ANA testing detects antibodies associated with several systemic autoimmune diseases, but it cannot prove that a disease is present. False-positive results are possible.

The test can also miss relevant disease if antibody levels are below the laboratory threshold or an automated panel does not include the antibody involved. Rarely, someone with an ANA-associated condition has a negative result.

Depending on the concern, further tests may include anti-double-stranded DNA, extractable nuclear antigen antibodies, complement levels, blood counts, inflammatory markers and urine testing.

No ANA pattern, titre or specific antibody should be interpreted alone. Accurate assessment combines the result with symptoms, examination and other investigations.

Risks and complications

The risks are those of an ordinary blood draw. You may have brief discomfort, a small bruise or feel light-headed.

Serious complications are uncommon. Applying pressure after the needle is removed helps reduce bruising.

What happens next

Your clinician will review the antibodies tested, their levels or titres, the laboratory method and your symptoms. A positive result may lead to more specific blood tests, urine tests or referral to a rheumatologist.

A negative result may make some diagnoses less likely. Your clinician may investigate other causes or use another test if the original panel did not cover the relevant antibody.

Most results can be discussed at a routine follow-up appointment. Seek urgent medical care for significant new symptoms such as chest pain, severe trouble breathing, confusion, sudden weakness or a major reduction in urine output. These symptoms require assessment based on how you feel, not on the ANA result.

Common questions

Can I drink coffee before an ANA panel?

Yes. Fasting is not normally required unless you are also having another test that requires it.

Does the time of day matter?

Usually not. ANA testing does not need to be performed at a particular time.

Can I exercise beforehand?

Ordinary exercise should not meaningfully affect ANA results, although strenuous exercise can affect other blood tests taken at the same time.

Should I stop my medicines first?

No, unless the prescriber instructs you to. Stopping medicines without advice may be unsafe.

Does a positive ANA mean I have lupus?

No. Positive ANA can occur with lupus, other conditions, medicines, infections or no identifiable disease. Diagnosis depends on clinical findings and other tests.

Will I need the test repeated?

Not always. ANA can remain positive and may not reflect disease activity. More specific blood

or urine tests are often more useful.

Sources

- American College of Rheumatology. Antinuclear Antibodies (ANA) . Patient information
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