



## Antinuclear Antibodies (ANA)

The immune system makes an abundance of proteins called antibodies. Antibodies are made by white blood cells and they recognize and combat infectious organisms in the body. Sometimes these antibodies make a mistake, identifying normal, naturally-occurring proteins in our bodies as being “foreign” and dangerous. The antibodies that target “normal” proteins within the nucleus of a cell are called antinuclear antibodies (ANA). ANAs could signal the body to begin attacking itself which can lead to autoimmune diseases, including [lupus](#), [scleroderma](#), [Sjögren’s syndrome](#), polymyositis/dermatomyositis, mixed connective tissue disease, drug-induced lupus, and autoimmune hepatitis. A positive ANA can also be seen in [juvenile arthritis](#).

### Fast facts

- A positive ANA test means autoantibodies are present.
- By itself, a positive ANA test does not indicate the presence of an autoimmune disease or the need for therapy.
- Autoimmune diseases can be treated.

### What is an antibody or ANA?

Antibodies develop in our immune system to help the body fight infectious organisms. When an antibody recognizes the foreign proteins of an infectious organism, it recruits other proteins and cells to fight off the infection. This cascade of attack is called inflammation.

Unfortunately, some antibodies make incorrect calls, identifying a naturally-occurring protein (or self protein) as foreign. These autoantibodies start the cascade of inflammation, causing the body to attack itself. Most of us have autoantibodies, but typically in small amounts. The presence of large amount of autoantibodies or ANAs can indicate an autoimmune disease.



### How do you test for antinuclear antibodies?

There are several methods used to test for ANAs. One method is a blood test called the Fluorescent Antinuclear Antibody Test or FANA. This test involves viewing fluorescent-labeled antibodies on a glass slide under the microscope and determining the pattern and intensity of the fluorescence.

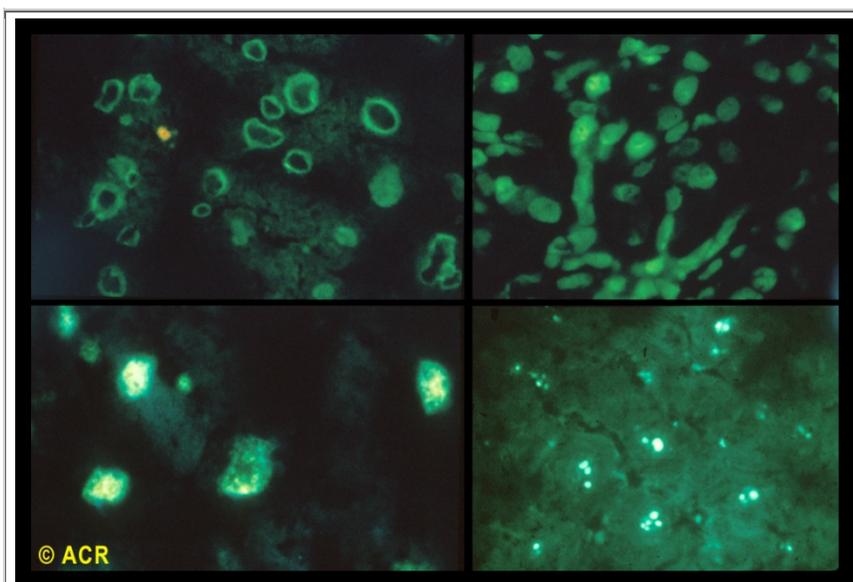
The sensitivity and simplicity of an ANA test makes it extremely popular to screen for lupus in particular. Since most people (more than 95% of individuals) with lupus will test positive, a negative ANA test can be helpful in excluding that diagnosis. **That said, only about 11-13% of persons with a positive ANA test have lupus and up to 15% of completely healthy people have a positive ANA test. Thus a positive ANA test does not automatically translate into a diagnosis of lupus or any autoimmune or connective tissue disease.**

### How are FANA levels measured?

FANA test results are reported in titers and the patterns that the autoantibodies make, e.g., homogeneous, speckled, centromere, etc. This titer reading is determined by adding saline (salt water) to the liquid portion of a person's blood.

For example, 1 part blood is mixed with 40 parts saline to create a 1:40 dilution. The dilution then is taken through a series of additional steps, creating tubes of 1:80, 1:160, 1:320, and 1:640 dilutions, respectively.

Labs vary in their standards for "positive," e.g., some labs will report any titer above 1:160 as positive. Your physician will interpret the ANA results based on the clinical history.



#### Antinuclear antibodies (photomicrographs)

In clockwise order, the peripheral, diffuse, nucleolar and speckled immunofluorescent patterns are presented.



### What does a positive ANA reading mean?

A negative ANA reading means no autoantibodies are present in the body. However, a positive ANA reading alone does not indicate an autoimmune disease. Why?

- The prevalence of ANAs in healthy individuals is about 3-15%. The production of these autoantibodies is strongly age-dependent, and increases to 10-37% in healthy persons over the age of 65. Even healthy people with viral infections can have a positive ANA, albeit for a short time.
- Some medications can cause a positive ANA. It is important to talk with your doctor all the drugs you are taking—prescription, over-the-counter and street.
- Other conditions, such as cancer, can cause a positive ANA.

The positive ANA reading simply tells your doctor to keep looking. In fact, you may have a “false positive” ANA, which means that the evidence is not there to make a diagnosis of lupus or any other autoimmune disease. To make a definite diagnosis, your doctor will need more blood tests along with history of your symptoms and a physical examination.

### How should I handle a positive ANA reading?

Please note a positive ANA does not require immediate treatment. Remember, lab levels vary, some autoantibodies are normal and this may be a false positive result. Your doctor will determine what happens next based on additional exploration. By working with your doctor and asking questions you will get the best care for your particular situation.

Keep in mind, even if your ANA reading does lead to an autoimmune diagnosis, there are treatments for all autoimmune diseases.

### Points to remember

- Some medications cause a positive ANA. Tell your doctor all prescription, over-the-counter and street drugs you take.
- ANA testing can produce a “false positive.” This typically signals the presence of antinuclear antibodies in a healthy individual.
- Talk to your doctor about a positive ANA and best next steps.

### The rheumatologist's role in ANA

Your rheumatologist will interpret your ANA in the context of other laboratory studies and your clinical history, including family history. Remember a single positive ANA does not imply autoimmune disease.

### To find a rheumatologist

For more information about rheumatologists, [click here](#).

For a listing of rheumatologists in your area, [click here](#).



**For more information**

The American College of Rheumatology has compiled this list to give you a starting point for your own additional research. The ACR does not endorse or maintain these Websites, and is not responsible for any information or claims provided on them. It is always best to talk with your rheumatologist for more information and before making any decisions about your care.

Lupus Foundation of America

<http://www.lupus.org/education/labtests.html>

The Arthritis Foundation

<http://www.arthritis.org/conditions/DiseaseCenter/JLupus/tests.asp>

**Updated April 2009**

Written by Joan Marie Von Feldt, MD and reviewed by the American College of Rheumatology Patient Education Task Force.

*This patient fact sheet is provided for general education only. Individuals should consult a qualified health care provider for professional medical advice, diagnoses and treatment of a medical or health condition.*

©2010 American College of Rheumatology