

Scientists develop a simple blood test to quickly diagnose sarcoidosis

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A research project supported by the National Institutes of Health has developed a tool to rapidly and inexpensively diagnose sarcoidosis, a chronic inflammatory disease marked by the growth of tiny lumps called

granulomas in the lungs and other organs in the body. The tool, which uses a simple blood test, could allow for selective use of more invasive diagnostic tests often used to identify the disease. The findings were [published](#) in the *American Journal of Respiratory and Critical Care Medicine*.

"Currently, diagnosing [sarcoidosis](#) isn't a straightforward process and requires tissue removal and testing with additional screenings to rule out other diseases, such as tuberculosis or [lung cancer](#)," said James Kiley, Ph.D., Director of the Division of Lung Diseases at the National Heart, Lung, and Blood Institute, part of NIH. "Using a blood test will help diagnose faster, particularly in those organs that are more challenging to biopsy and with less harm to the patient."

Though the exact cause of sarcoidosis is unknown, researchers suspect it is an immune disorder triggered by a group of specific antigens, which are generally foreign substances that incite an immune response in the body. In the United States, an estimated 8-11 people per 100,000 are affected by sarcoidosis each year, [according to previous research](#).

To identify antigens and determine which might be linked to sarcoidosis, scientists collected lung fluid samples and [blood cells](#) from patients with pulmonary sarcoidosis and then extracted the genetic material. Using a combination of molecular techniques, the researchers homed in on two newly described disease-specific antigen biomarkers that only bind to the antibodies of sarcoidosis-positive patients.

They next designed a highly specific blood test, which only requires a small amount of blood, to determine if they could accurately detect sarcoidosis. To verify the test, researchers compared blood samples from 386 people, which included patients with sarcoidosis, patients with tuberculosis, patients with lung cancer, and healthy individuals. The researchers confirmed that their test was able to differentiate patients

who had sarcoidosis from those with other respiratory diseases.

"More testing needs to be completed before this screening method is ready for [clinical use](#), but it's possible that could be a reality within a few years," said Lobelia Samavati, M.D., of Wayne State University and senior author on the study.

More information: Changya Peng et al, Discovery of Two Novel Immunoepitopes and Development of Peptide-based Sarcoidosis Immunoassay, *American Journal of Respiratory and Critical Care Medicine* (2024). [DOI: 10.1164/rccm.202306-1054OC](https://doi.org/10.1164/rccm.202306-1054OC)

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