

# Ground-breaking Research Announced Into Cause of Sarcoidosis, a Rare Autoimmune Condition

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Funding has been awarded for an innovative research project at the University of Manchester which has the potential to unlock key information about sarcoidosis, a rare auto-immune condition with no known cure. Researchers will analyse patient breath samples for clues about an airborne cause of the disease. The £120,000 research grant has been provided by SarcoidosisUK and the British Lung Foundation. SarcoidosisUK are the only UK sarcoidosis charity and are committed to funding research into the condition until a cure has been found.

Sarcoidosis can affect almost every bodily organ but most commonly impacts the lungs, skin and eyes. The condition affects each patient differently and although medication may be used to control symptoms, there is no known cause or cure. While some sarcoidosis patients are able to live reasonably normal lives, many others endure chronic pain and experience poor quality of life. Sarcoidosis is fatal in around 5% of cases, usually when the heart or brain is affected.

Sarcoidosis is thought to be caused by the patient's immune system overreacting to an unknown substance in the air that is breathed in. It is not yet known what this airborne trigger is, but experts have suggested possibilities such as domestic fungus, bacteria that causes acne (*Propionibacterium acnes*) and mycobacteria present in soil and water.

The team at the University of Manchester, headed by Dr Steven Fowler, believe that their breath analysis may be able to identify this airborne trigger and help to answer the critical question about the cause of the disease. If so, it may soon be possible to develop tailored treatments to specifically target sarcoidosis. This will be a vast improvement on the current best treatment option that relies on high-risk drugs working only to suppress the immune system rather than treat the disease.

In addition to investigating an environmental cause, the collected data will be used to shed light on a number of other important issues relating to sarcoidosis. The researchers believe their results can help to better predict disease progression and patients' response to treatments. Dr Fowler, Senior Lecturer and Honorary Consultant in Respiratory Medicine at the University of Manchester, explains: "*We are going to investigate whether we can detect chemical signals in the breath that can give us information about the severity of the disease, the presence of infection and/or inflammation, and perhaps the cause of sarcoidosis in any individual.*"

SarcoidosisUK is the only UK sarcoidosis charity, providing information and support to anyone affected by sarcoidosis. They also raise awareness and fund research into a cure for the condition. They are committed to funding at least one major research project each year until a cure has been found. Their research partnership with the British Lung Foundation has led to over £360,000 being invested into sarcoidosis research since 2015, making them one of the largest sarcoidosis research-funders in the world.

Henry Shelford, SarcoidosisUK Chairperson said: "*We are thrilled to be in a position to fund Dr Fowler's research. The prospect of being able to find out more about possible environmental causes of sarcoidosis from a simple and non-invasive breath analysis is extremely exciting for us and the patients we support. We are very much looking forward to seeing the results that will come from this investment.*"

Sarcoidosis, literally meaning 'condition of the flesh', affects the organ tissue. This means that investigations usually involve taking a tissue sample, a scary and unpleasant experience for patients. Dr Fowler explains why his chosen method of investigation is so innovative: "*The collection procedure for breath samples is very simple, and would offer significant advantages compared to current invasive methods of sampling the lungs, such as lung biopsy.*"

The research project will be conducted over three years by a multidisciplinary team based at Interstitial Lung Disease unit at the University of Manchester. Breath sample and data analysis will then be conducted at Manchester Institute of Biotechnology with the results published in 2021.

[www.sarcoidosisuk.org/](http://www.sarcoidosisuk.org/)

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