

# Cystic Fibrosis Research News

## **Title:**

Antibody response against Mycobacterium avium complex in cystic fibrosis patients measured by a novel IgG ELISA test

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## **What was your research question?**

Can we improve the detection of a group of CF bacteria known as MAC by developing a new antibody test? Antibodies are found in the bloodstream and are produced by the immune system. Each type of antibody is unique to a certain threat, like a bacteria, the body has previously been exposed to.

## **Why is this important?**

The bacteria MAC is difficult to detect because symptoms are subtle and special laboratory methods are needed with culture results taking up to eight weeks to be completed.

## **What did you do?**

We developed a new method and used it to measure antibody levels against MAC in blood collected from three-hundred and five individuals with CF from the Copenhagen CF Center in Denmark. We also thawed frozen blood from the period 1984-2015 and used the same method to see what happens to antibody levels before and after a person with CF gets the bacteria.

## **What did you find?**

Four individuals had active infection with MAC in 2015 and their antibody levels were on average 22 times higher than individuals with no history of infection. In the historical blood analysis we observed that in many cases antibody levels rose years before the infection was detected suggesting that diagnosis is often delayed.



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## **What does this mean and reasons for caution?**

The test was not suited to replace bacterial culture, because several people without the bacteria also had high antibody levels. This could be because these bacteria are common in the environment and people have been exposed previously. Having low antibody levels, however, meant that the risk of active MAC infection was very low. Ruling out infection was thus the tests strength.

## **What's next?**

Confirmation in a larger study is needed to see whether dividing a CF population into high- and low-risk groups based on antibody levels may help CF doctors identify patients in need of more frequent culture.

## **Original manuscript citation in PubMed**

<https://www.ncbi.nlm.nih.gov/pubmed/?term=Antibody+response+against+Mycobacterium+avium+complex+in+cystic+fibrosis+patients+measured+by+a+novel+IgG+ELISA+test>