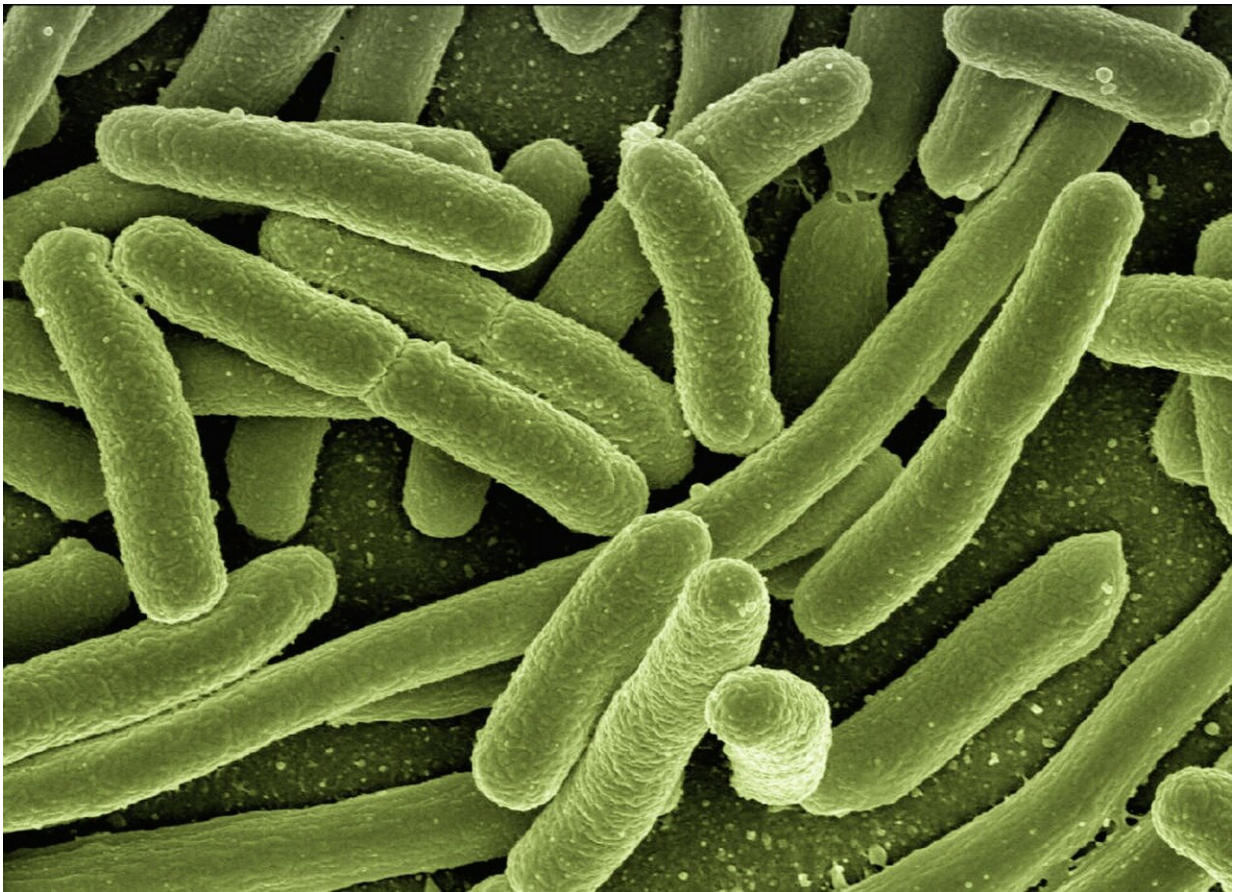


# Bacteria in the mouth linked to pulmonary fibrosis survival

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Bacteria in the mouth may play a role in survival from idiopathic pulmonary fibrosis (IPF), finds a new study led by researchers from the

University of Michigan and the University of Virginia.

The findings come from a larger analysis of the role of the lung microbiome and IPF. Working under the hypothesis that treatment with antibiotics could improve outcomes in patients with the disease, the CleanUP-IPF study includes the collection of cheek swabs and other samples to examine changes in bacterial populations.

David O'Dwyer, M.D., Ph.D., of the Division of Pulmonary and Critical Care Medicine at U-M Medical School, partnering with John Kom, M.D. and Imre Noth, M.D., of the University of Virginia and their team, saw an opportunity also to study the role of the oral microbiome in lung disease, as it is now generally accepted that bacteria from the mouth and throat are a major contributor to the lung [microbiome](#).

Using 16S rRNA analysis and other genetic techniques, the team extracted DNA from the cheek swabs to look for clues.

Surprisingly, they found that one [bacterial species](#), *Streptococcus mitis*, tended to dominate in certain patients with IPF who were not treated with antibiotics. What's more, those patients had better lung function and less severe disease—and, ultimately, were more likely to survive.

To date, research has shown that a more diverse set of bacteria in the lungs and in the gut is reflective of better health. That does not hold true for the mouth, however, noted O'Dwyer. *Streptococcus mitis* tends to act as a gatekeeper toward other bacterial threats, including those that can cause [periodontal disease](#), he said.

The team notably did not find the same protective relationship between oral *Streptococcus mitis* and IPF in patients who had received antibiotics. Future studies aim to further determine the various [bacterial populations](#) within the oral and lung environment in patients with IPF to

understand the link between these microbiomes and disease.

The research is [published](#) in the *American Journal of Respiratory and Critical Care Medicine*.

**More information:** David N. O'Dwyer et al, Commensal Oral Microbiota, Disease Severity and Mortality in Fibrotic Lung Disease, *American Journal of Respiratory and Critical Care Medicine* (2023).  
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