

# Cystic Fibrosis Research News

## Title:

**High incidence of non-tuberculous mycobacteria-positive cultures among adolescent with cystic fibrosis**

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## What was your research question?

The research question focused on the prevalence of non-tuberculous mycobacteria (NTM)-positive cultures among a large cohort of both pediatric and adult French CF patients. Further, the research sought to review the risk factors associated with NTM-positive cultures and determine the impact of NTM identification on lung function evolution.

## Why is this important?

The prevalence of NTM isolation from sputum within the CF population is rising. Pulmonary disease is absent in some patients with NTM-positive cultures, which makes it challenging to determine the clinical impact of NTM and to clearly identify indicators for initiating treatment. The impact of NTM positivity on the clinical course of CF remains controversial.

## What did you do?

We performed a longitudinal, retrospective case-control study in the CF center of Lyon that included a pediatric (n=297) and an adult (n=350) cohort. All patients with regular follow-up at our CF center between 2009 and 2014 were included. The patients were routinely

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screened at least once a year for NTM. Cases had at least one NTM-positive culture. For each case, we selected two controls with no history of NTM-positive cultures and matched for age and gender. CFTR-related diabetes (CFRD), allergic bronchopulmonary aspergillosis (ABPA), hospitalization in the last 5 years, treatment received in the 12 months preceding the index date, and pulmonary chronic bacterial colonization were compared between the 2 groups.

## What did you find?

48 CF patients with NTM-positive cultures were matched to 96 controls. Young adolescents, ages 13 to 17, had the highest incidence of NTM of all the age groups and *Mycobacterium avium* complex (MAC) positive patients were older than *Mycobacterium abscessus* (MABSC) positive patients. The rate of MAC identified in case of NTM-pulmonary disease was higher than MABSC. Significant associations for NTM positivity were found with *Staphylococcus aureus*, ABPA, corticosteroid and itraconazole. We found neither protective nor predisposing effects of azithromycin on NTM detection. Mean annual FEV1 decline was faster for NTM-positive patients compared to controls.

## What does this mean and reasons for caution?

Young adolescents should benefit from close screening for NTM. In case of *S. aureus* colonization, ABPA, corticosteroid treatment and itraconazole treatment, screening for NTM should be done regularly.

NTM identification does not mean that NTM pulmonary disease will develop and decisions for treatment initiation have to be discussed.

## What's next?

Further studies are needed to understand which factors influence the change from detection of NTM without infection to a diagnosis of NTM pulmonary disease in order to adapt medical monitoring and treatment initiation.

## Original manuscript citation in PubMed

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