

# Cystic Fibrosis Research News

## **Title:**

Vitality is associated with systemic inflammation in cystic fibrosis adults on elexacaftor/tezacaftor/ivacaftor

## **Lay Title:**

Lower inflammation is related to greater energy levels in adults with cystic fibrosis on elexacaftor/tezacaftor/ivacaftor

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

We wanted to find out if inflammation was related to energy levels in adults with cystic fibrosis (CF) who are taking elexacaftor/tezacaftor/ivacaftor (ETI).

## **Why is this important?**

Fatigue is a common problem for adults with CF, with many reporting low energy levels that significantly impact their daily lives. Research in other diseases similar to CF has shown that inflammation may be linked to fatigue. While ETI therapy has been shown to reduce inflammation and improve overall health, we do not know if these changes are directly related to improved energy levels in people with CF. Understanding this connection could help develop new strategies to improve quality of life for people living with CF.

## **What did you do?**

We studied 61 adults with CF who started ETI therapy at St. Paul's Hospital in Vancouver, Canada. We measured their levels of inflammation using C-Reactive Protein and their self-reported energy levels using a questionnaire. Participants performed these measurements before starting ETI and then again at 1, 3, 6, and 12 months after beginning treatment. We analyzed the data to see if changes in inflammation were linked to changes in energy levels, while also considering other factors such as age, body weight, and lung function.



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## **What did you find?**

We found that inflammation significantly decreased within one month of starting ETI and remained lower for up to 12 months. At the same time, energy levels significantly improved within the first month and stayed higher at most time points over the year. Importantly, we found that people with lower inflammation levels generally reported having more energy. Our results also indicate that improvements in lung function were not the reason for seeing improvements in energy levels. This suggests that reducing inflammation may help improve energy levels in adults with CF taking ETI therapy.

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

Our study suggests that inflammation may play a role in the fatigue experienced by adults with CF, and that reducing inflammation with ETI therapy may help improve energy levels. While we found a strong link between lower inflammation and better energy levels, other factors such as mental health, sleep, physical activity, and medication side effects may also contribute to fatigue but were not measured in this study. Additionally, we only measured one marker of inflammation (CRP), and other markers could provide a more complete picture of the connection between inflammation and energy. Lastly, the questionnaire we used may capture aspects of quality of life other than fatigue which could affect the interpretation of our results.

## **What's next?**

Future research should examine other inflammatory markers and additional factors like sleep and mental health to better understand what influences fatigue in adults with CF. This could help develop targeted strategies to improve energy levels and overall well-being in this population.

## **Original manuscript citation in PubMed**

<https://pubmed.ncbi.nlm.nih.gov/40074570/>