

# Cystic Fibrosis Research News

**Title:**

Impact of Highly Effective Modulator Therapy on Chronic Rhinosinusitis and Health Status: 2-year Follow-up

**Lay Title:**

Impact of Highly Effective Modulator Therapy on Sinus Disease and Health Status: 2-year Follow-up

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**What was your research question?**

We investigated the impact of elexacaftor/tezacaftor/ivacaftor (ETI) on sinus disease and health status after two years of treatment in adults with cystic fibrosis (CF) using validated surveys and sinus computed tomography (CT) scans.

**Why is this important?**

ETI is highly effective modulator therapy (HEMT) that leads to substantial improvements in pulmonary and extra-pulmonary disease including sinus disease for people with CF. Prior studies demonstrated that ETI leads to near immediate improvements in sinus disease that endure though six months of therapy. However, longer term outcomes after initiation of ETI for sinus disease and other health outcomes continue to be studied.

**What did you do?**

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In this study, which is an extension of prior work, adults with CF and sinus disease who clinically initiated ETI in 2019 enrolled in a prospective, observational study. Outcome measures were obtained before and after six and 24 months of ETI. Endpoints included change in sinus CT opacification scores assessed via machine learning methods (main outcome) and validated patient-reported outcome measures (secondary outcomes).

## What did you find?

Thirty, 28, and 26 participants completed baseline, 6-month, and 2-year data collection, respectively. Compared to baseline, sinus opacification improved by mean 25.4% at 24 months. 22-question SinoNasal Outcome Test (SNOT-22) scores, which measures sinonasal symptoms, improved by mean 13.7 points after two years compared to baseline. Health utility value, a measure of generalized quality of life, improved at 2-year follow-up by 5%. Presenteeism (representing decreased efficiency at work/school), activity impairment, and overall productivity loss improved after 2 years. Across all outcomes, improvements were stable and did not decrease at 2-year follow-up compared to 6-month follow-up.

## What does this mean and reasons for caution?

Findings show that improvements in sinus CT opacification, sinonasal and overall quality of life, and multiple components of productivity loss persist through two years of therapy. These results extend prior findings, which demonstrated that three-to-six months of ETI treatment improved sinus disease and these outcomes. In this study, outcome measures were similar between six months and two years after ETI, suggesting that most CRS-related benefits of ETI occur early after therapy initiation and remain stable through two years of treatment. Given the anticipated lengthening of lifespans for people with CF with new therapies, long-term observation to investigate potential changes in efficacy of highly effective modulator therapy over time remains essential.

## What's next?

While these findings demonstrate substantial improvement in CF-sinus disease after two years of ETI, participants in this study had persistent sinonasal symptoms and sinus CT opacification despite ongoing therapy. Understanding how to optimally manage this residual component of CRS after ETI and treat sinus disease remains critically important.

## Original citation in PubMed

<https://pubmed.ncbi.nlm.nih.gov/37805356/>