

# Cystic Fibrosis Research News

**Title:**

ELEXACAFTOR-TEZACAFTOR- IVACAFTOR IMPROVES SINONASAL OUTCOMES IN CYSTIC FIBROSIS

**Lay Title:**

ELEXACAFTOR-TEZACAFTOR- IVACAFTOR IMPROVES SINUS PROBLEMS IN CYSTIC FIBROSIS

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**What was your research question?**

Does the new cystic fibrosis drug elexacaftor/texacaftor/ivacaftor [Trikafta] help sinus problems caused by CF?

**Why is this important?**

About two thirds of people with CF have symptoms of sinus disease that impact their quality of life, and nearly everyone with CF has sinus disease that is detectable on a CT scan. Sinus problems include a stuffed nose, nasal drainage, loss of the ability to smell, and headaches. Nasal polyps (extra tissue growing in the nose) may also be present and severe cases require surgery. Ongoing sinus problems may make lung function worse, and some people tend to have worsening of their sinus symptoms around the time of a pulmonary exacerbation. Finally, sinus problems continue after lung transplant, and bacteria from the sinuses may infect the transplanted lungs.

**What did you do?**

To answer the research question, we did a study with 34 people with CF and sinus problems at the University of Pittsburgh and University of North Carolina in the USA. The study participants were aged

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between 12-60 years and one third of participants were teenagers. Study participants either had two F508 del mutations, or one F508 del mutation and one minimal function mutation. Before starting Trikafta, the study participants had an endoscopy (camera examination of their nose and sinuses) and a CT scan of their sinuses. A scratch and sniff type test was used to determine a participant's ability to smell and a symptom questionnaire was also completed. After 9 months, these measurements were repeated.

## What did you find?

Over time about 90% of people had an improvement in their sinus symptoms, CT scans and endoscopies. The improvement in symptoms started within a week of starting Trikafta and lasted until at least 6 months. About half of the study participants had nasal polyps; however, the polyps shrunk in everyone and disappeared in most participants after starting on Trikafta. The only area where an improvement was not observed was the ability to smell (olfaction).

## What does this mean and reasons for caution?

9 in 10 people who start Trikafta will have fewer sinus problems. About 10% of people in the study did not have improvement in sinus symptoms or endoscopies and the reason for this finding was unknown. It might be that some people have sinus problems driven by allergies or some other cause in addition to CF. Everyone in our study had an improvement in lung function, weight, and sweat chloride measurements, therefore, a lack of improvement in sinus problems does not relate to how other CF symptoms will change with treatment. At this point, we do not know if the general lack of improvement in olfaction might take longer than 9 months, or if Trikafta would protect the ability to smell if started earlier in childhood.

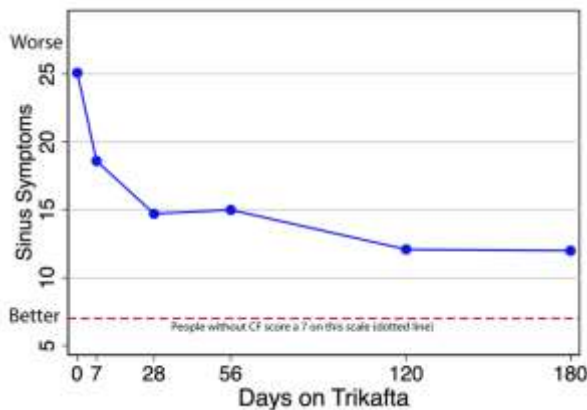
## What's next?

We are currently doing a similar study in a younger group (children aged 6-12 years) who have started Trikafta and we will determine if Trikafta their sinus problems improve. Another group of researchers is following adults for two years to determine if the improvement in sinus symptoms lasts for a longer period after starting Trikafta.

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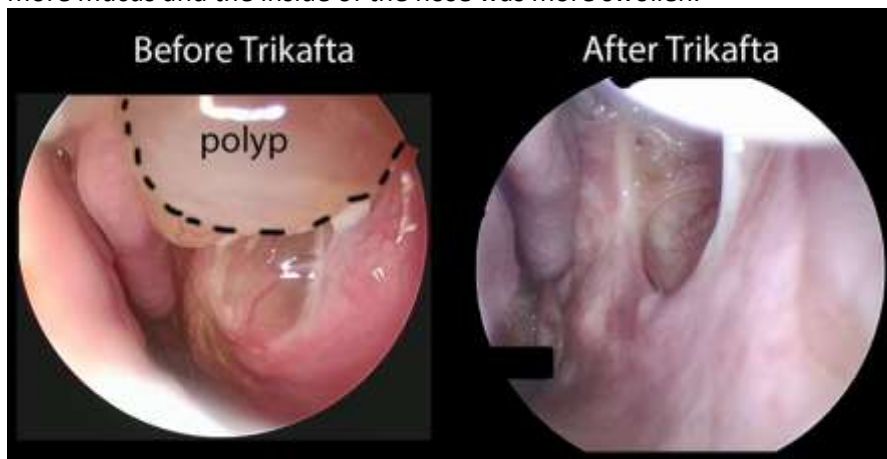
## Optional Figure Caption 1:

People in the study reported their sinus symptoms after starting Trikafta. Higher numbers are worse symptoms. Within a week, people reported fewer symptoms.



## Optional Figure 2

People in the study had pictures taken from inside their nose with a small camera. Before Trikafta, this person had a large polyp that went away after taking Trikafta. Before Trikafta, there was also more mucus and the inside of the nose was more swollen.



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