

# Cystic Fibrosis Research News

**Title:**

Airway Clearance Therapy in the School Environment: Retrospective Analysis of a Cohort of Pediatric Patients with Cystic Fibrosis

**Lay Title:**

The Completion of Airway Clearance Therapy at School in a Group of Pediatric Patients with Cystic Fibrosis

**Authors:**

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**What was your research question?**

In a group of pediatric patients with cystic fibrosis (CF) with poor adherence to airway clearance therapy at home, what is the effect of completing therapy at school on the number of pulmonary exacerbations, days of prescribed antibiotics, hospitalizations and lung function, compared with standard completion of therapy at home?

**Why is this important?**

Adherence to daily airway clearance in children and adolescents with CF can be diminished due to inadequate parental involvement, time management and significant treatment burden. Despite clinical evidence on the effectiveness of airway clearance therapies, adherence among pediatric and adolescent CF patients is reported to be low. Furthermore, inability to sustain daily care therapies has been linked to decreased lung function, increased pulmonary exacerbations and increased hospitalizations. Therefore, adherence to therapy is essential to prevent worsening of cystic fibrosis in the pediatric population.

**What did you do?**

We compared two groups of pediatric patients, the first identified as a case group who were approached by the CF care team to receive airway clearance therapy at school after the patient, caregivers or physician identified that there were challenges at home. The control



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group consisted of similar patients based on age and gender who completed therapy at home. The respiratory therapist ensured proper administration of airway clearance devices through training and follow-up with school nurses. Data was recorded for both groups from one year prior to as well as one year after start of airway clearance therapy at school.

## **What did you find?**

There were significant reductions in the number of pulmonary exacerbations, total number of days of intravenous and oral antibiotic use as well as number of outpatient visits to the CF care center over the one-year period in the case group after initiation of airway clearance therapy at school. When these variables were compared to the control group over the same period of time, they were not significantly different. There were no significant changes in days of hospitalization or lung function in the case group.

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

This is the first study to our knowledge to highlight an initiative between a CF care center and local schools which utilized airway clearance devices in schools to ensure pediatric CF patients received daily therapy. This collaboration resulted in multiple improved health outcomes related to healthcare utilization and provides an innovative solution to help patients sustain daily care. Reasons for caution include a small sample size at a single site which reduces generalizability of our findings. The two groups differed on race and it's possible some of the differences can be attributed to the difference in this variable.

## **What's next?**

It would be ideal if our results were replicated in a larger study that follows patients from multiple centers over time. Additional study is required in health systems where a clinician cannot work closely with the school for educational purposes, which impacts communities not geographically close to a CF center.

## **Original manuscript citation in PubMed**

<https://pubmed.ncbi.nlm.nih.gov/36702656/>