

# The AERD Center

at Brigham and Women's Hospital

Information for patients with aspirin-exacerbated respiratory disease (AERD) / Samter's Triad

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## MESSAGE FROM OUR DIRECTORS

This year has been a very busy one, as we try to return to a sense of normalcy and care for our patients as safely as we can. We are continuing to push ahead with new research and new discoveries in AERD with the goal of providing the best possible treatments for our patients.

There are several new medications that have become available for the treatment of AERD over the past few years. In addition to offering them to our patients when appropriate, our research team has also been working hard to make sure that we fully understand how each of these medications works, and with those discoveries, we are starting to better understand what leads to the inflammation that causes AERD.

Dr. Tanya Laidlaw,  
Dr. Kathleen Buchheit  
& Jillian Bensko, PA-C

**AERD Awareness Day**  
**September 26<sup>th</sup>, 2022**  
Show your support by  
spreading awareness and  
learning more at  
[www.samterssociety.org](http://www.samterssociety.org)!

## BY THE NUMBERS

We are continuing to grow our AERD Registry and now have over 2,600 patients enrolled in our registry! As the data in our registry grows, so does our knowledge about AERD.

For example, data from our AERD registry participants showed us that on a scale of 0-5, 22.8% of them ranked their decreased sense of taste/smell as a 4 (severe problem) and 45.5% of patients ranked it as a 5 (problem as bad as it can be). This taught us that as researchers and healthcare providers, we need to pay more attention to the effects of anosmia, or loss of smell, and it inspired us to launch a new study about the potential impacts of smell loss. You can read more about what we learned about the impacts of anosmia on page 2 of the newsletter!



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## PUBLICATION: DUPILUMAB-ASSOCIATED ARTHRALGIA IN AERD PATIENTS

The advent of respiratory biologics for the treatment of CRSwNP and severe asthma for patients with AERD has led to significant improvements in patient quality of life, but post-marketing surveillance has revealed additional possible side effects. In April 2022, we reported a series of eight patients with AERD who developed arthralgias (joint pain) after initiating dupilumab.

At the time of the study, we found 8 AERD patients out of the 160 (5%) who had been prescribed dupilumab at our center developed possible dupilumab-associated arthralgias. Several of the patients underwent extensive rheumatologic work-up, and no cause of the joint symptoms was found. All 8 patients experienced significant improvement in upper and lower respiratory symptoms after starting dupilumab and ultimately decided to continue dupilumab despite the arthralgias. Out of the 8 patients, the joint pain spontaneously resolved in 5 of them. The cause of this dupilumab-associated joint pain is still unknown and we have launched a new research study to learn more (see the GLIDER study on Page 4). We recommend that clinicians caring for patients who encounter this side effect consider close monitoring and continued treatment if the patient is otherwise benefiting from dupilumab. [PMID: 35124224](#)

## PUBLICATION: PEDIATRIC-ONSET AERD

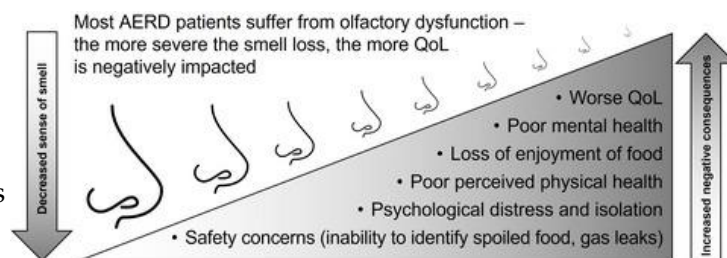
AERD is generally recognized as an adult-onset disease, however; the prevalence of AERD in pediatric patients is not well defined. In May 2022 we described a series of 6 pediatric patients with AERD, and their childhood AERD symptoms were almost identical to those in adults with AERD. In our AERD registry we found that more than 6% of the patients report that their AERD symptoms started before 18 years of age and noted that females tend to develop AERD earlier than males, and that developing AERD as a child is more common for girls than for boys.

Additionally, all 6 adolescent patients in this series had severe enough disease symptoms that they were prescribed dupilumab as a treatment option, and all of them had good responses to dupilumab with improvements in both asthma and sinus symptoms. Therefore, we recommend that for adolescents with poorly controlled symptoms of AERD the potential benefit of treatment with dupilumab should be considered. [PMID: 35643277](#)

## PUBLICATION: ANOSMIA IN AERD

A common problem for AERD patients is loss of sense of smell, or anosmia, but its impact on patients' quality of life, mental health, and physical wellbeing has been poorly studied. We developed a new questionnaire about the consequences of anosmia, which, along with several other quality-of-life questionnaires was sent to all our Registry patients. Eighty-five percent of the 853 patients who answered the questionnaires (Thank you!) reported diminished sense of smell and/or taste, and we learned that their loss of smell severely impacts their physical, emotional, and mental health. Many patients with diminished smell responded that they could not identify spoiled food (86%), did not enjoy food (71%), felt unsafe (63%), and had encountered dangerous situations (51%) because of their poor smell (see Figure below).

We think that the importance of sense of smell and the relevance of anosmia to patients' lives should be acknowledged and evaluated by clinicians caring for these patients. [PMID: 35506180](#)





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## CURRENT RESEARCH

### ONGOING STUDY 1: Global immune effect of dupilumab on arthralgia

GLIDER is a new study examining how blockade of IL-4Ra with dupilumab affects AERD patients' immune systems. In particular, we want to understand why some patients develop joint pain as a side effect of dupilumab, while most others do not. We are evaluating changes in specific cells and inflammatory pathways of the immune system in patients who do or do not develop joint pain while on dupilumab. If you have AERD and take dupilumab and have developed new knee or other joint pain, please let us know. We are interested in finding out more about why this happens.

### ONGOING STUDY 4: INVESTIGATING IL-5

IL-5 acts on eosinophils and basophils to stimulate maturation by binding to IL-5 receptors known as IL-5R $\alpha$ . It has been shown that inhibiting IL-5 can provide therapeutic benefits for patients with AERD, whose IL-5R $\alpha$  are overexpressed. Thus, specifically investigating how nasal epithelial cells produce IL-5R $\alpha$  in various points of their maturation timeline and respond to IL-5 stimulation allows us to understand how various diseases affect these cells and what genes are expressed when they are stimulated with IL-5. We do this by growing nasal epithelial cells through air-liquid interfaces (ALI). These ALIs allow us to replicate the nasal airway structure, so that we are able to observe epithelium growth and many of the features that happen inside our noses before stimulating with IL-5. Overall, these laboratory studies will help us understand the relevance of IL-5 in nasal epithelial cells in a more realistic way.

### ONGOING STUDY 2: 2-Year follow up of AERD Registry ("2-FAR")

2-FAR is a 24-month long study that examines the symptoms and progression of disease in patients with AERD. We reached our goal of having 100 participants from the AERD Registry enrolled in this study and will complete the final 24-month set of surveys in the fall of 2022.

### ONGOING STUDY 3: Analyzing Ifetroban

We have completed the enrollment for our trial of ifetroban, where we investigated whether taking the drug ifetroban, which blocks a receptor called the TP receptor, can block aspirin-induced reactions and may help treat AERD. We are still looking through all of our data for analysis and hope to have it finished for a publication by the end of 2022. Many thanks to all who participated!

## NEW STAFF

### Laura Cho, BA

Laura graduated from Wellesley College in May 2022, where she majored in Chemistry. She now works as a research technician in the Laidlaw Lab and AERD Center and is planning to go to medical school in the future.



### Chongjia Chen, MD

Dr. Chen is a second-year fellow in Allergy/Immunology at the Brigham & Women's Hospital. Dr. Chen's research focuses on the impacts of dupilumab on the immune system in general, and she will be leading the new GLIDER study.



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