Summer 2026 Newsletter

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 past year has been a period of remarkable scientific output and clinical milestones at the Brigham and Women's Hospital AERD Center. Thanks to your partnership and participation in our registry, our team has made groundbreaking discoveries into why alcohol triggers respiratory symptoms, the clinical markers of rapid nasal polyp recurrence, and how emerging tools like AI handle patient education.

While we continue to navigate a changing scientific funding landscape, our commitment to uncovering the mechanisms of AERD and optimizing your daily clinical care remains unwavering. Your shared experiences drive our translational research forward every single day. We are profoundly grateful for your continued trust and collaboration.

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

AERD Awareness Day
September 26th, 2026
Show your support by spreading awareness and learning more at www.samterssociety.org!

By the Numbers

600 Surveyed on Alcohol Sensitivity: Data from our registry helped us discover that respiratory reactions to alcohol are tied to an acquired deficiency of the alcohol-clearing enzyme ALDH2 in AERD airways.

46.9% Report Red Wine as the Top Trigger: Among 471 registry patients, red wine was cited as triggering the most severe, rapid respiratory reactions.

>50% Notice Return of Polyps Within 6 Months: A registry study of 325 post-surgical patients highlighted that nasal polyps return early for more than half of patients.

78 Participants in the NASCENT Study: Our ongoing study evaluating biomarker proteins in nasal fluid to identify specific asthma types has reached 78 enrolled participants out of a planned 125, with 60 samples already sent for laboratory analysis!

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The AERD Center at Brigham and Women's Hospital

AERD Center Publication #1

Respiratory tract ALDH2 deficiency: A key to alcohol-induced respiratory reactions in AERD.

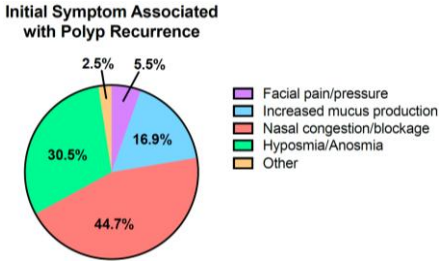
Many patients with AERD experience respiratory reactions after drinking alcohol. Researchers surveyed 600 AERD patients about alcohol-related symptoms and analyzed inflammatory markers. Alcohol-induced upper and lower respiratory symptoms were frequently reported and were associated with more severe sinus disease, worse asthma control, and higher levels of inflammatory markers. Notably, patients with AERD had lower levels of the enzyme ALDH2, which helps to break down alcohol, in their airway tissue. Treatments that target type 2 inflammation, such as dupilumab, improved alcohol-related symptoms and increased ALDH2 expression. These findings suggest that inflammation in AERD may impair alcohol metabolism in the airway, contributing to these reactions.

AERD Center Publication #2

Characteristics associated with rapid nasal polyp recurrence following sinus surgery in AERD.

This study examined how often and how quickly patients with AERD report nasal polyp return after sinus surgery. Researchers analyzed data from 325 patients in the AERD Registry who had previously undergone sinus surgery. Patient reported that nasal polyps commonly returned within 6 months after surgery, with over half of patients reporting recurrence in this timeframe.

The figure below highlights that the most common early signs of recurrence were nasal congestion and loss of smell. Patients who experienced faster recurrence also had worse sinus symptoms and asthma control after the sinus surgery, compared to those with slower or no recurrence. These findings highlight the importance of recognizing early symptoms of recurrence and working closely with your care team to monitor and manage disease after surgery.

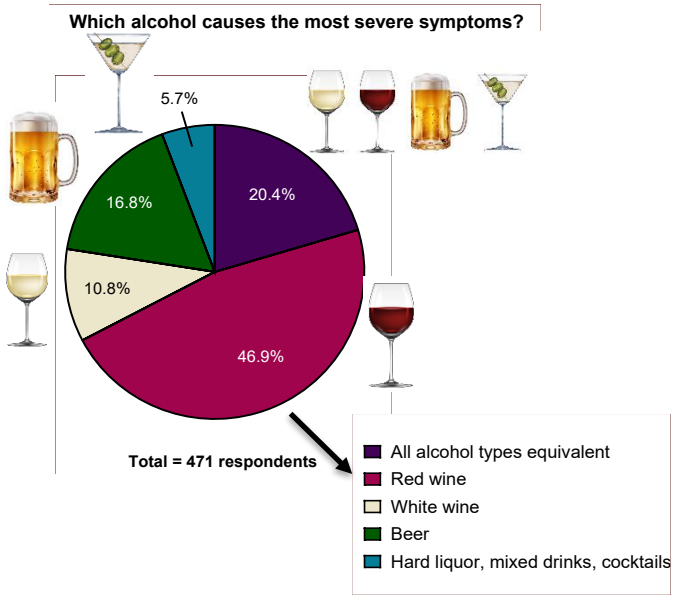


AERD Center Publication #3:

Alcohol sensitivity in AERD: Impact on daily life and why certain drinks may trigger stronger reactions.

This study examined how alcohol sensitivity affects the daily lives and social behaviors of patients with AERD. Researchers surveyed patients in the Brigham and Women's AERD Registry and found that most patients who experience alcohol-related respiratory reactions limit or avoid drinking, and many report avoiding social situations because of these symptoms. Patients with more severe lower respiratory reactions were especially likely to change their behavior and reported a greater social burden. While some participants noted challenges such as fewer social opportunities, others reported health benefits from reducing alcohol use.

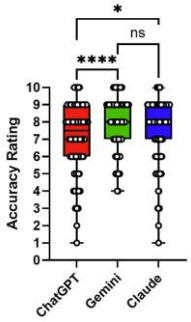
Related work presented at a recent conference further explored which types of alcohol are most likely to trigger symptoms, as shown in the figure below. In that analysis, red wine was most commonly reported to cause the most severe reactions. One possible explanation involves compounds found in red wine, such as quercetin, that may interfere with normal alcohol metabolism. Together, these findings highlight how alcohol sensitivity in AERD not only affects physical symptoms but also plays an important role in patients' social experiences and quality of life.



AERD Center Publication #4:

Patient questions, artificial intelligence answers: evaluating chatbots in AERD.

This study evaluated how well commonly used artificial intelligence (AI) chatbots answer questions about AERD. Researchers asked three chatbots a series of common patient questions and had a panel of AERD specialists evaluate the responses for medical accuracy and readability. The figure depicts the accuracy rating of the three chatbots used.



Overall, the chatbot responses were generally medically accurate, although there was some variability depending on the question asked. However, the responses were consistently written at a very advanced reading level. These findings highlight that while AI tools can provide helpful information about AERD, the way that information is presented may not always be optimized for patient education. Patients should continue to use these tools thoughtfully and discuss questions with their care team when possible.

AERD Center Publication #5:

Beyond type 2 inflammation: An innate-myeloid axis is linked to nasal polyp recurrence.

This study examined why some patients experience rapid return of nasal polyps after sinus surgery. Researchers analyzed nasal polyp tissue and found that, in addition to type 2 inflammation (the type commonly targeted by medications like dupilumab), other inflammatory pathways are also important in driving nasal polyp recurrence.

In particular, markers of what is called "innate" or "myeloid" inflammation were strongly associated with faster polyp recurrence. While dupilumab reduced many type 2 inflammatory signals and improved symptoms, it did not affect several of these other pathways that may contribute to long-term disease. Together, these findings suggest that multiple types of inflammation are involved in AERD and related conditions, which may help explain why symptoms can return over time and why future treatments may need to target more than one pathway for lasting control.

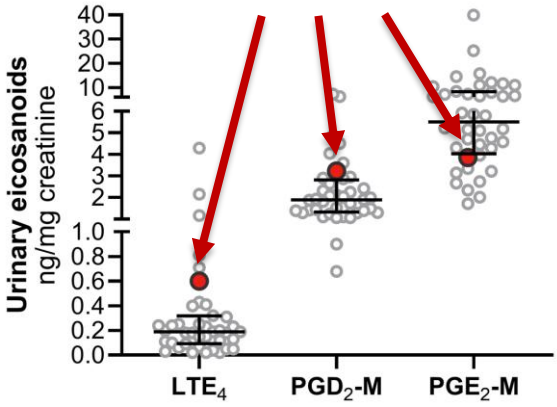
AERD Center Publication #6:

Expanding the spectrum of triggers in aspirin-exacerbated respiratory disease: Sildenafil may cause respiratory symptoms in AERD.

This report describes a potential new, non-traditional trigger for respiratory reactions in patients with AERD. Researchers identified two patients who developed symptoms such as nasal congestion, wheezing, and chest tightness shortly after taking sildenafil, a medication commonly used for erectile dysfunction. These reactions closely resembled their prior reactions to aspirin and other NSAIDs and occurred within one hour of taking the medication.

These findings point to a possible link between sildenafil and the same inflammatory pathways involved in AERD, particularly through changes in prostaglandin production. Patients with higher baseline levels of inflammatory markers appeared more susceptible to these reactions. In the figure below, the levels of these inflammatory markers from an AERD patient who experienced a reaction after taking sildenafil are shown. While more research is needed, this work highlights the importance of recognizing medications beyond NSAIDs as possible triggers and discussing new or unexpected symptoms with your care team.

AERD patient who had respiratory symptoms after taking sildenafil



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Come to clinic for an Aspirin or NSAID challenge while on Dupilumab (Dupixent)!

Aspirin or NSAID challenge testing can help determine which medications are safe for you and may open the door to additional pain treatment options. These challenges are done in a controlled clinical setting with close monitoring. For patients on dupilumab (Dupixent), reactions to aspirin, ibuprofen, and other NSAIDs may be milder or completely gone, making this a good time to reconsider evaluation if you have previously avoided these medications. If you are interested, we encourage you to connect with our team to learn more.

Current Research Studies

Nasal fluid proteomics for ASthma ENdoTyping (NASCENT)

Asthma is a disease with many different causes and a variety of symptoms, but the current approach to figuring out which "type" of asthma a patient has relies on a limited set of blood biomarkers: IgE levels and eosinophil numbers in the blood. These markers miss many types of asthma and often do not help us figure out which treatment could be best for each patient. In this NASCENT study, we are evaluating whether biomarker levels within the nasal fluid will be more useful to identify and monitor asthma types compared to the traditional biomarkers in the blood. We are comparing levels of certain proteins in the blood and nasal fluid of patients with asthma to better understand how these markers relate and which ones can help distinguish between different asthma types. We have now enrolled 78 participants (out of a total of 125 planned), and 60 participant samples have been sent for analysis. We are excited to begin analyzing these data and are grateful to all of you who have participated in the NASCENT study so far.

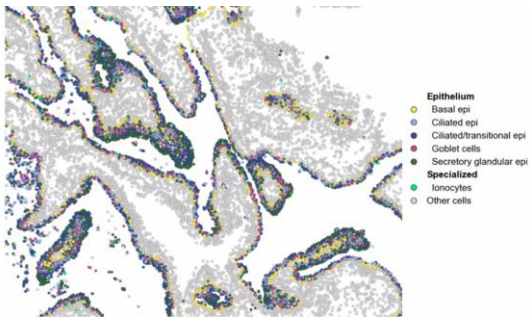
Is AERD a local autoimmune condition?

In this study, we are exploring whether AERD may involve an autoimmune component, where the immune system mistakenly reacts to the body's own proteins. To do this, we are using a research technique that allows us to look at over 10,000 antibodies at once and identify which proteins the immune system may be targeting. By comparing samples from patients with AERD to control groups, we hope to determine whether there are unique antibody patterns within the airway.

This work may help us better understand whether AERD is driven not only by inflammation, but also by targeted autoimmune responses within the sinus tissue. This is an early-stage project, and we are currently working to secure additional funding to continue this research.

Spatial transcriptomics

Spatial transcriptomics is a technique that allows researchers to genetically map out which cells are active in different areas of a tissue sample. By combining gene expression data with location, this work helps identify how inflammatory cells are organized and mapped within the airway in AERD and may point to new treatment targets (see photo below for an example).



Thank you: New study on smell loss in AERD completed

Earlier this summer, we conducted a survey to better understand changes in sense of smell among patients with AERD. The survey asked about participants' experiences over time and how their sense of smell responded to treatments such as sinus surgery, oral steroids, and biologic therapies. One of the key goals of this study is to determine whether improvement in smell while taking oral steroids may help predict how a patient's sense of smell will respond to other treatments. Findings from this research may help us better understand patterns of smell loss and recovery in AERD and guide future treatment decisions. We would like to sincerely thank everyone who took the time to complete the survey. Your participation is invaluable and helps advance research aimed at improving care for patients with AERD.

Patient Testimonials

"I would just like to thank your team for helping me recover my sense of smell. Your research has truly changed my life. Thank you!"
- Patient T

"My journey with AERD has been long and difficult, filled with repeated surgeries and too many setbacks. Finding the Brigham & Women's research and care team significantly improved my health over the years."
- Patient D

"This treatment dramatically improved my quality of life (particularly my sense of smell and ability to enjoy the smells of my husband's skin, herbs cooking and flowers blooming) and was completely out of proportion with how simple and inexpensive it was."
- Patient M

Patient Education Programs

Asthma and Allergy Foundation of America

The Asthma and Allergy Foundation of America (AAFA) worked in collaboration with Drs. Tanya Laidlaw, Kathleen Buchheit, Stella Lee, and others to create the Patient-Centered Education and Care for Nasal Polyps (PEACE-NP) program. PEACE-NP offers a free video series and a sinus visit checklist to give you the tools to work with your doctor and manage nasal polyps. To view the educational content and other information offered, please visit https://aafa.org/. AAFA also now offers a Sinus Visit Checklist for patients with nasal polyps to share with their provider. To learn more, visit https://aafa.org/programs/collaborations/peace-np/

Webinar Programs Offered thus far:

- **Part 1: Nasal Polyp Basics** (learn what nasal polyps are, how they develop, and how they are diagnosed) https://www.youtube.com/watch?v=yuhPrqBZmPM
- **Part 2: Standard Treatment Options for Nasal Polyps** (learn what to expect from each option, including benefits and potential side effects) https://www.youtube.com/watch?v=JHzAfpGGUXg
- **Part 3: Biologic Treatment Options** for **Nasal Polyps** (learn how biologics work and who may be a candidate for these options) https://www.youtube.com/watch?v=TNgcYBRzNjk
- **Part 4: Home Remedies, Fact or Fiction** (learn about the evidence behind nasal polyp home remedies, diets, and treatment myths) https://www.youtube.com/watch?v=WjLKZtCOR60

And more to come!

New Staff/Members



Andrew Supron, MD

Andrew is a second-year fellow in Allergy & Clinical Immunology at Brigham and Women's Hospital. He completed his undergraduate degrees in Classical Studies and Chemistry at Rice University before entering medical school at Johns Hopkins. He moved to Boston in 2022 for internal medicine residency and has been based at Brigham and Women's since. His translational research involves the use of proteomic analysis to identify novel biomarkers for asthma and phage immunoprecipitation to explore the role of autoantibodies in the pathophysiology of chronic rhinosinusitis. In his free time, Andrew enjoys unwinding with his greyhounds, playing the piano, and learning languages.



Francesca Azevedo

Francesca is a rising senior at Trinity College. She is majoring in Biochemistry and plans to attend medical school in the future. She is now working in the Division of Allergy & Clinical Immunology for the summer as a Clinical Research Intern. In her free time, she enjoys reading and spending time at the beach.

The BWH AERD team members on AERD Awareness Day 2025!



Noah Braunstein
AERD Research Coordinator
P: 617-525-3826
nbraunstein@bwh.harvard.edu

Alisa Pham
AERD Research Coordinator
P: 617-525-3825
apham11@bwh.harvard.edu

Carter Segal
AERD Research Coordinator
P: 617-525-3824
cjsegal@bwh.harvard.edu

BWH Allergy Clinic
P: 617-732-9850
850 Boylston Street
Chestnut Hill, MA 02467