CONQUERING Sjögren's

September/October 2025

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Letter from Our President & CEO

Janet Church
President & CEO,
Sjögren's Foundation

Dear Member,

One of the most important roles of the Sjögren's Foundation is ensuring that research for our disease is prioritized alongside other autoimmune and chronic conditions. In the November/December 2024 issue of *Conquering Sjögren's*, we shared about the Accelerating Medicines Partnership® Autoimmune and Immune-Mediated Diseases initiative (AMP® AIM). AMP® AIM is a public–private collaboration led by the Foundation for the National Institutes of Health (FNIH) that unites the NIH, industry, and advocacy organizations like ours. The goal of the collaboration is to uncover the root causes of autoimmune and immune-mediated diseases by generating and analyzing large, shared datasets. By being part of AMP® AIM, the Foundation ensures that the patient voice is central to shaping research priorities. We are in year four of this five-year project and data collection is still occurring for the participating diseases of Sjögren's, lupus, rheumatoid arthritis, and psoriatic arthritis.

I am now pleased to share news of another major project with the FNIH that builds on this momentum and focuses specifically on Sjögren's disease. The **Molecular Characterization and Diagnostic Biomarkers of Sjögren's Disease** project is a three-year study that will bring together leading researchers from the National Institute of Dental and Craniofacial Research, academic centers, and industry partners. The goal is to identify new biomarkers that can lead to faster and more accurate diagnosis and help researchers design more effective clinical trials. The Sjögren's Foundation is on the steering committees of both the AMP® AIM and the biomarkers projects!

Why does this matter? As someone who has lived with the pain, fatigue, and uncertainty of Sjögren's disease for years, I know how critical this research is. Too many of us go undiagnosed or misdiagnosed for far too long, and even after diagnosis, we face a lack of effective treatments and care. This project offers real hope—not just for better understanding of the disease, but for a future where patients are seen, heard, and helped with the right care at the right time.

The Sjögren's Foundation is proud to be a funding partner in this initiative. Alongside AMP® AIM, it represents another important step forward in advancing Sjögren's research.

Thank you, Member, for your continued support, which makes it possible for us to be at the table for efforts like these and to ensure the researchers understand the TRUE unmet needs of the Sjögren's patient community. We will keep you updated as this work moves ahead.

You can read more about this project by visiting the news section of our website: sjogrens.org.

Janet Church

Janet Church
President & CEO

Interstitial Lung Disease and Sjögren's Disease

September 10 was **Interstitial Lung Disease (ILD) Awareness Day** — an important reminder of a serious complication that can affect people living with Sjögren's. On this day, the Sjögren's Foundation proudly supported the Pulmonary Fibrosis Foundation (PFF) by promoting their ILD Awareness Day webinar and helping to bring more visibility to the connection between ILD and autoimmune diseases like Sjögren's. Raising awareness is critical, since ILD can be difficult to detect early and many of its symptoms (such as fatigue and dry cough) overlap with Sjögren's. Earlier diagnosis and treatment can lead to better outcomes for patients.

As part of this year's observance, the Foundation also developed new educational resources to help you understand ILD and how it may affect people with Sjögren's.

What is Interstitial Lung Disease?

When viewed by a high-resolution chest CT scan or under a microscope, ILDs can be divided into various subtypes. The most common ILD patterns in Sjögren's include:

- **Non-Specific Interstitial Pneumonia (NSIP)**: the most common type of ILD seen in patients with Sjögren's and is characterized by both inflammation and scarring of the lung tissue.
- **Lymphocytic Interstitial Pneumonitis (LIP)**: more common in Sjögren's than any other autoimmune disease. LIP causes inflammation around the small airways and the surrounding lung tissue, often leading to the formation of air-filled holes (cysts) in the lungs.
- **Organizing pneumonia (OP)**: can cause multiple abnormalities on chest imaging and generally responds well to treatment.
- **Usual Interstitial Pneumonia (UIP)**: primarily causes scarring of the lung tissue and is generally considered the worst prognosis ILD subtype.

It's estimated that 10 to 15 out of 100 people with Sjögren's have ILD.

Symptoms of Interstitial Lung Disease

ILD symptoms usually start out mild and worsen over time. In some cases, you might not notice any ILD symptoms at first. The most common symptoms of ILD include:

- Shortness of breath
- Dry cough
- Fatigue (feeling very tired all the time)
- Chest discomfort

You may have additional symptoms, depending on which form of ILD you have. Some ILD symptoms, like fatigue and a dry cough, are common symptoms of Sjögren's disease, too, so pay close attention to your symptoms and discuss changes with your healthcare provider.

Because ILD doesn't always cause symptoms right away, it's important to ask your doctor to check your lungs regularly if you've been diagnosed with Sjögren's disease. It is important to catch ILD as early as possible for the best treatment.

How Are Interstitial Lung Disease and Sjögren's Related?

Sjögren's disease is a systemic disease that can damage any part of the body — including the lungs. Sjögren's disease and other autoimmune diseases like lupus, scleroderma, and rheumatoid arthritis can all cause ILD.

How Is Interstitial Lung Disease Diagnosed?

To diagnose ILD, your doctor will ask about your symptoms and use tests to examine your lungs and check how well they're working. Tests that doctors use to diagnose ILD may include:

- **Pulmonary (lung) function tests (PFTs)**, such as measuring how much air you inhale and exhale, and how much oxygen goes from your lungs to your blood.
- **Imaging tests**, such as an X-ray or CT scan, to check for damage to your lungs.
- **Blood tests**, to check for other conditions that are known to cause ILD.
- **Bronchoscopy**, which means inserting a thin tube with a camera on the end (called a bronchoscope) through the nose or mouth and into the lungs to check your airways and take samples from the lungs.
- **Biopsy**, which is when your doctor takes a small sample of tissue from your lungs and looks at it under a microscope to check for signs of ILD.

If you have Sjögren's disease, it's a good idea for your doctor to regularly check your lungs for signs of ILD or other lung problems.

What Does Having Interstitial Lung Disease and Sjögren's Disease Mean for Me?

If you have ILD and Sjögren's, it's important to get treatment for both conditions and to know the signs of possible complications. Treating both conditions requires multidisciplinary care, usually including a rheumatologist (treating Sjögren's) and pulmonologist (treating lung conditions like ILD).

The type of treatment you need for ILD depends on your symptoms, how much they bother you, and whether your symptoms get worse over time. Your doctor will monitor your condition with lung function tests and imaging to see if your ILD is stable or gets worse over time. Treatments may include:

- Taking medicines to help reduce inflammation and lung scarring
- Using supplemental oxygen, if your oxygen levels drop below a safe range
- Doing physical therapy or breathing exercises to help you breathe stronger and more easily

Having both Sjögren's and ILD can make you more likely to experience certain complications. People with Sjögren's ILD sometimes develop pockets of air within their lungs, called cysts. These cysts increase your risk of a serious problem called pneumothorax (when a lung collapses). It's important to know the symptoms, which include:

- **Shortness of breath that comes on very suddenly**
- **Chest pain that feels worse when you take a deep breath**

Pneumothorax is an emergency and requires immediate treatment. If you have Sjögren's disease and experience these symptoms, get help right away. ■

This is an overview of these resources.

Scan the QR code below to access additional resources around ILD.

Expert reviewed by: Nishant Gupta, MD

You Stood Up: Brian Stallcop's Bike Ride from London to Paris for Sjögren's Disease

In our March–April 2025 issue of *Conquering Sjögren's*, we introduced you to Brian Stallcop's inspiring plan to bike ride from London to Paris in honor of his wife, Shawna. We're excited to share that on July 26, Brian completed the 309-mile journey as part of a fundraising event benefiting the Sjögren's Foundation, raising awareness and critical support for our mission.

After watching Shawna navigate the challenges of delayed diagnosis and the daily realities of the disease, he wanted to do something that would honor her experience while also helping others in the community.

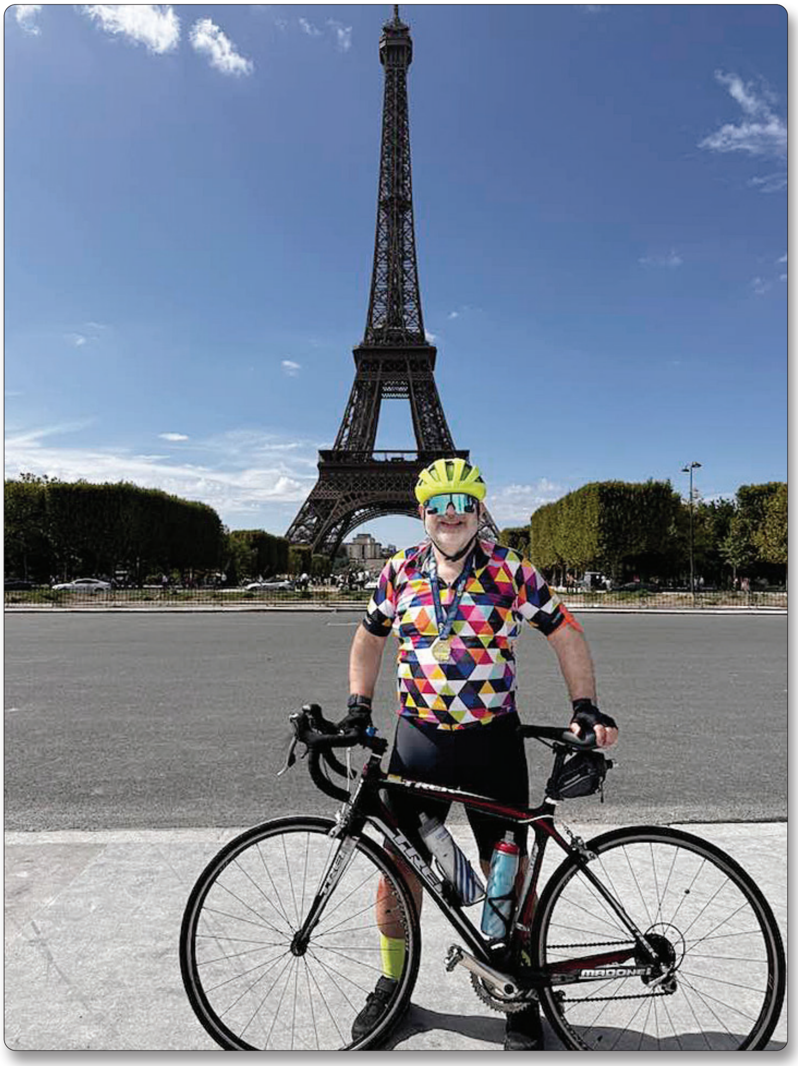
His ride ended in Paris the day before the Tour de France, where he joined fellow cyclists on the famous Champs-Élysées, passed the Arc de Triomphe, and finished at the Eiffel Tower.

With the support of family, friends, and his community, Brian raised over $6,300 to help the Foundation advance research, provide resources for patients and caregivers, and expand education for healthcare providers.

The Sjögren's Foundation is grateful to Brian for his fundraising efforts in support of Sjögren's patients, families, and caregivers. His dedication is a reminder of how personal passions can be turned into meaningful ways to raise awareness and strengthen our community.

Interested in starting your own fundraiser?

Contact us at info@sjogrens.org to learn how you can turn your passion into impact. ■



"I made it to Paris today, full of gratitude for the opportunity to support the Sjögren's Foundation." — Brian Stallcop

2025 Sjögren's Foundation Research Grant Recipients

We are happy to announce our 2025 Sjögren's Foundation Research Grant recipients! The projects funded below will help uncover key gaps in scientific and clinical research for Sjögren's. The Sjögren's Foundation funded one Dynamic Grant, one High Impact Grant, and three Pilot Grants in areas of great need for research.

The funding of our Dynamic Grant will help to generate validated classification criteria for childhood-onset Sjögren's. Currently, there are no classification criteria for children with Sjögren's and, as such, research studies use adult classification criteria, which can create knowledge gaps in these studies.

Our High Impact Grant recipient will focus on how inflammatory signaling factors called cytokines play a role in different cell types of the salivary glands. This work will shed light on how each of the inflammatory signaling factors contribute to the inflammation and damage of salivary gland tissue. This work has implications for future, more tailored therapeutic targets for Sjögren's.

The funded Pilot Grants will focus on using innovative strategies to study key contributing factors to Sjögren's disease. We hope this research will further elucidate the role of the immune system in contributing factors of Sjögren's disease, such as the role of immune cells in corneal damage and salivary gland damage. Other research will focus on further linking Sjögren's with autonomic dysfunction by looking at changes in inflammatory proteins in hopes of explaining how autonomic dysfunction plays a role in worsening symptoms for patients with Sjögren's.

Overall, the hope is that this research will lead to a better understanding of mechanisms underlying the cause of conditions observed in patients with Sjögren's and work toward using that knowledge to improve the quality of life for patients.

Dynamic Grant

Sara Stern, MD
University of Utah

Title
CLassificAtion cRiteria For childhood onsEt sjögRen – CLARIFIER

Abstract

Childhood-onset Sjögren's (cSjD) presents differently than adult-onset disease. Previous studies have shown that the current adult classification criteria perform poorly in children. Therefore, child-centric classification criteria are needed. Classification criteria are vitally important for research since they standardize the population that could fit into research studies. To fill this knowledge gap, we have formed an international collaborative network comprising four of the largest pediatric research groups in the world that will develop and test classification criteria for cSjD. Our project design includes five stages.

Stage 1: Candidate item generation
The goal of Stage 1 is to generate a comprehensive and exhaustive list of all potential items that could be considered for inclusion in criteria.

Stage 2: Candidate item reduction
The objective of this stage is to select the refined candidate items to be used in the classification criteria, to ensure the high sensitivity and specificity for a diagnosis of cSjD.

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"Research Grantees" *continued from page 7* ▼

Stage 3: Criteria definition and weighting
In this stage, the refined criteria items will be organized and finalized for definition and weighting.

Stage 4: Generation of a multi-center derivation cohort of cSjD cases and comparators and refinement of candidate preliminary classification criteria. During this stage, a new large cohort dataset with global representation will be generated.

Stage 5: Validation of the final classification criteria for cSjD

An independent validation dataset from the Childhood Onset Sjögren disease Outcomes Network (CHOSON) study will be used for the validation of the classification criteria developed in stage 4. CHOSON is a primarily prospective observational, long-term international registry for cSjD that started recruiting in 2023 through the generous support by the Sjögren's Foundation and has 70 current participants with a goal of over 200.

High Impact Grant

Ang Cui, PhD

Brigham and Women's Hospital
Department of Anesthesiology

Title

A cytokine dictionary for understanding Sjögren's disease pathophysiology

Abstract

Sjögren's disease (SjD) is a chronic autoimmune disorder in which the immune system attacks the salivary glands, leading to severe dryness and systemic symptoms. Current treatments primarily focus on alleviating symptoms and do not fully address the underlying causes of the disease. One key aspect of SjD is the involvement of cytokines – signaling molecules of the immune system that drive inflammation in SjD. However, we do not yet fully understand how each cytokine impacts different cell types in salivary glands, making it difficult to develop targeted therapies. This research aims to create a cytokine dictionary for salivary glands, providing detailed genomic information on how different cell types respond to key cytokines involved in SjD. Using single-cell sequencing technology, we will examine the cytokine-activated biological pathways in a variety of immune and non-immune cell types in the salivary glands, shedding light on their role in SjD. The work will generate precise insights that could lead to more effective treatments for SjD, helping restore gland function and improve the lives of patients suffering from this debilitating condition.

Pilot Grant

Luye An, PhD

University of California, San Francisco
School of Dentistry, Department of Cell and Tissue Biology

Title

Profiling the immune cells in the autoimmune-induced dry eye disease through spatial multi-omics

Abstract

Sjögren's disease (SjD) is an autoimmune disease where the body's immune system mistakenly attacks its own tissues, including the tear-producing glands. This leads to chronic dry eye, which can cause serious damage to the cornea—the clear, outer layer of the eye. While a lack of tears was once thought to be the main cause, recent research shows that immune cells invading the cornea play a major role in worsening the disease as well. This invasion can lead to nerve damage, disorganized corneal cells, and cloudiness, all of which impair vision.

Our research uses a mouse model that mimics SjD-related dry eye. We have found that, in healthy eyes, immune cells stay in the outer edge of the cornea. However, in SjD, they move into the central cornea, where they interact with important eye cells and nerve fibers, potentially causing more corneal damage and discomfort. Despite these findings, we still don't fully understand which immune cells are involved and how they damage the cornea.

To fill this gap, we will use advanced spatial RNA and protein analysis techniques to map these immune cells and their interactions in the eye. By identifying the specific cells and signals driving corneal damage, we hope to find new treatment targets that can prevent immune cell invasion and protect the cornea. Our goal is to improve therapies for people with SjD-related dry eye and reduce long-term vision problems.

Valeria Manfre, MD

University of Wisconsin-Madison
Division of Rheumatology,
Department of Medicine

Title

Innovative microphysiologic systems recapitulate the salivary gland microenvironment to define pathogenesis by endotype and test novel therapeutic agents in Sjögren's disease

Abstract

Sjögren's disease (SjD) patients suffer from the lack of tears and saliva, due to immune-related infiltration of the glands responsible for their production. Immune cells are attracted to the cells in the gland responsible for making tears and saliva (epithelial cells) causing their lack of function. The relationship between salivary gland epithelium and the immune system is still largely unknown. To date, there are no effective options to treat or prevent these manifestations. Lately, the development of salivary gland organoids (mini "organs" made only of salivary gland epithelial cells) has helped advance our knowledge on the causes of SjD establishment, but they do not allow researchers to simultaneously study the role of the immune cells in SjD. With this project, we want to develop a complex technology to evaluate the relationship between salivary gland organoids together with immune cells, to understand the mechanisms by which they interact. Moreover, with this technology we have the opportunity to study drug efficacy on multiple organ systems simultaneously including the immune cells and epithelial cells. Finally, SjD is highly variable from patient to patient, and we can use this model system to create an individualized "patient" to test how drugs were in SjD patients with different disease characteristics.

R. Hal Scofield, MD
Arthritis and Rheumatology Research Program
Oklahoma Medical Research Foundation

Title

Exploratory Proteomic Analyses in Sjögren's-related dysautonomia

Abstract

Sjögren's Disease (SjD) manifests as dry eyes and dry mouth due to inflammation and damage of the glands that produce tears and saliva. Dryness, joint pain, arthritis, and fatigue severely impact the quality of life of SjD patients. The autoimmune attack extends beyond the joints and glands in a large proportion of patients, and amongst the many organs that can be impacted by SjD is the nervous system. The autonomic nervous system (ANS), which controls involuntary bodily functions such as heart rate, blood pressure, sweating, and movement of the gastrointestinal tract, has been estimated to be affected in up to half of all SjD patients. The most commonly reported symptoms are lightheadedness and dizziness when standing up, fainting, excessive or decreased sweating, blurred vision, nausea, palpitations and weakness. ANS dysfunction also worsens some of the classical SjD symptoms, including decreasing the production of tears and saliva, worsening fatigue, and disrupting the immune response. While research points to strong connections between the nervous and immune systems, little is known about the connection between SjD and autonomic dysfunction. In this study, we will screen a large group of patients with confirmed SjD for symptoms of autonomic neuropathy and evaluate the resulting impact on their quality of life and SjD symptoms. A group of SjD patients with strong symptoms of autonomic dysfunction and a matched group of SjD patients without evidence of autonomic dysfunction will be evaluated in our clinic for heart rate and blood pressure abnormalities. A sample of their tears and blood will be analyzed with cutting-edge technology to identify more than 1000 inflammatory proteins and their relationship to symptoms and quality of life. Our short-term goal is to generate sufficient data to secure additional funding and expand this study with the long-term goal of identifying better diagnostics for SjD-autonomic neuropathy and potential targets for treatment. ■

What Sjögren's Patients Should Know About Workplace Accommodations

Like most people, people living with Sjögren's disease want to be able to work. Working can provide financial security and a sense of purpose. But living with Sjögren's can bring daily challenges that affect your ability to do your job. For example, common Sjögren's symptoms like fatigue (feeling very tired all or most of the time), chronic pain, dryness, and brain fog can sometimes make work feel challenging — or even impossible.

If this sounds familiar, you're not alone. Many people with Sjögren's disease experience these challenges with work. But did you know that it's possible for you to request workplace accommodations? Accommodations are changes or supports that help people with certain health conditions or disabilities perform their jobs more comfortably and effectively. Employees have the right to request reasonable workplace accommodations under the Americans with Disabilities Act (ADA).

Educating yourself, knowing your rights, and starting a conversation with your employer about workplace accommodations can help you reduce stress, protect your health, and stay engaged in your work.

What Are Workplace Accommodations?

Workplace accommodations are supports or changes that help make it easier for you to do your job when you have a health condition like Sjögren's. These can range from small changes to your daily routine to bigger adjustments to your responsibilities or workspace. For example, accommodations may include being able to take additional breaks throughout your workday or asking for a chair if your role normally involves standing.

These adjustments can help you to manage Sjögren's and still succeed in your role.

It's important to know that not all cases of Sjögren's qualify you for workplace accommodations — your symptoms need to significantly limit your ability to work for you to be eligible for accommodations under the ADA.

Accommodations for People with Sjögren's to Consider

Not everyone with Sjögren's will need the same accommodations. And sometimes, finding the right accommodations requires some creative thinking. The key is to identify the symptoms that impact your work most and then think about what might help.

Here are some accommodations commonly considered by people with Sjögren's:

- Special equipment or software: For example, an ergonomic mouse and keyboard can reduce pain and strain on your joints, or you might ask for a comfortable, ergonomic chair to use instead of standing. Task management software or a paper planner may help you stay organized, if brain fog makes remembering deadlines or tasks challenging.
- Workspace modifications: This may include special covers for fluorescent lighting, if you have light sensitivity, or adding a humidifier to help with dryness.
- Flexible scheduling: You may be able to adjust your start time, work off-hours, or work from home when your Sjögren's symptoms are especially bothersome. This may help with symptoms like fatigue or brain fog.
- Adjusted job responsibilities: Your employer may be able to reassign certain tasks, extend

deadlines, or adjust your workload during periods when your symptoms are worse.

- Breaks to help you manage your symptoms: You could ask your employer if you can take short breaks to stretch, use eyedrops, or drink water that can make it easier to manage symptoms like dryness and pain.
- Sun protection: If you work outdoors, wearing pants, long sleeves, and a wide brim hat can help protect you from the sun, which some people with Sjögren's are sensitive to. Your employer may also be able to provide shade, such as an umbrella.

Think Accommodations Might Help You? Talk With Your Employer.

Requesting accommodations can feel intimidating. Many people worry about how their employer will react, whether coworkers will notice changes, or if asking will impact their standing at work. Or you might not feel comfortable discussing your health at work. Keep in mind that it's normal to feel nervous — but requesting accommodations is your right, and accommodations can make a big difference in your ability to continue working.

Here are some steps to help you get started:

Think through what you need. Start by identifying which Sjögren's symptoms make it hardest to do your job. Then consider adjustments that could help — like a more flexible schedule, extra breaks, or changes to your workspace.

- **Talk with your doctor**. Share details about your symptoms and job responsibilities. Your doctor may be able to suggest specific accommodations based on your situation. It's also a good idea to ask them to write a letter to your employer explaining how Sjögren's affects your work and outlining possible accommodations. While not required, this documentation can help support your request.
- **Start a conversation with your employer**. Depending on your workplace, you might begin by talking with your direct supervisor or reaching out to human resources (HR).
- **Follow up in writing**. It's a good idea to document your conversation with your employer. Consider sending a follow-up email summarizing what you discussed and what you're requesting. Having a paper trail can make things easier if there are any delays or issues with approval.
- **Get support**. Check out resources that can help you put together your accommodations request, such as the Job Accommodation Network's resources for individuals. Find this resource and others by visiting our website sjogrens.org/workplace.

Asking for accommodations isn't about asking for favors. It's about making sure you have the tools you need to perform your job well. And keep in mind: a supportive employer will want to help you succeed. While starting the conversation can feel daunting, it may lead to solutions that benefit both you and your employer.

The Sjögren's Foundation is Here to Support You

Living with Sjögren's can feel challenging at times, but know that you're not alone. The Sjögren's Foundation is here to support our members — and all Sjögren's patients — by providing them with resources and information to help navigate Sjögren's disease.

Visit the Sjögren's Foundation's website (www.sjogrens.org) to find more information about workplace accommodations, get tips for living well with Sjögren's, connect with a support group, and more.

Read more about workplace accommodations by scanning the QR code to visit our site. ■

Sjögren's FOUNDATION

Continue to Drive Progress for Sjögren's

Become a Monthly Donor Today

The Sjögren's Foundation is making incredible strides by raising awareness, advancing research, supporting patients, educating healthcare professionals, and advocating for those living with this complex and serious disease.

You can help us keep the momentum going by joining our community of monthly donors. Your ongoing support ensures we can continue delivering trusted education, critical resources, and a stronger voice for every person affected by Sjögren's.

Even a small gift each month makes a lasting impact, moving us closer to conquering the complexities of Sjögren's disease together.

Make a monthly gift at **sjogrens.org/givemonthly** or by scanning the QR code below.

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Epithelial Dysfunction in Sjögren's & the Development of Salivary Gland Organoids:

What This Study Means for Sjögren's Patients

Sjögren's researchers have begun using new 3D models, called organoids, to study how epithelial cells are involved in Sjögren's disease. Epithelial cells are cells that make up tissues that cover the internal and external surfaces in your body, including your glands. Previous research has shown that the epithelial cells, especially in the salivary and lacrimal (tear) glands, are majorly involved in Sjögren's disease.

Organoids are useful for Sjögren's research because they create realistic cell models. They can form cell structures and layers that are very similar to what is found in the actual tissues of the body. Using organoids can help Sjögren's researchers get a better understanding of how epithelium impacts the disease — and what treatments might help.

Dr. Nocturne's team grew organoids using cells taken from the salivary glands on the inner lips of 13 Sjögren's patients and 15 patients with sicca (dryness) not caused by Sjögren's. They found that the organoids from the Sjögren's patients had characteristic signs of Sjögren's disease even without the presence of immune cells.

This finding is important because previous understandings of how Sjögren's disease works suggested that the immune system attacks and damages the epithelial cells in glands to cause Sjögren's signs and symptoms. But this new finding suggests that the epithelial cells themselves play a role in Sjögren's disease processes. Future studies can include immune cells alongside epithelial cells in organoids to better reproduce the gland environment in Sjögren's.

Using organoids in Sjögren's research is an exciting development. There's potential to use them as a way to test new drugs before they go to clinical trials. And in the future, organoids could even make it possible to create personalized Sjögren's treatments.

"Sjögren's Disease as an Autoimmune Epithelitis"

Prof. Gaetane Nocturne, MD, PhD
Bicêtre Hospital- APHP, Paris-Saclay University, INSERM/IDMIT, Le Kremlin-Bicêtre, France

Sjögren's disease (SjD) is often described as an autoimmune epithelitis.[1] This term reflects the now well-established concept that the epithelium—particularly in salivary and lacrimal glands—is both a target and an active participant in the autoimmune process. It appears as though the epithelium acquires immunological properties, becoming an active player capable of sustaining, and possibly even initiating, immune system activation.[2] In this context, developing systems that allow detailed study of the epithelial compartment in SjD is absolutely critical. Understanding the mechanisms underlying epithelial dysfunction is essential not only for advancing our knowledge of disease pathogenesis but also for identifying novel therapeutic targets.

This recognition of the epithelium as a disease driver has been made possible through extensive research by multiple teams worldwide. Much of this work has relied on the analysis of salivary gland biopsies from patients, as well as on primary 2D epithelial cell cultures derived from these biopsies. While these models have been extremely valuable, they come with notable limitations. In standard 2D adherent cultures, epithelial cells grow as monolayers on rigid plastic surfaces. These conditions fail to replicate the

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“Sjögren's Disease” continued from page 13 ▼

complex architecture of native tissue and lack crucial cell-cell and cell-matrix interactions. As a result, cells often undergo morphological changes, lose their apico-basal polarity, and exhibit reduced phenotypic diversity. These changes can profoundly affect cellular organization and secretory function—critical parameters in salivary gland physiology.

To overcome these limitations, researchers have increasingly turned to 3D culture systems, which are more physiologically relevant and better mimic tissue architecture. Among these, organoids—three-dimensional structures derived from stem cells—have emerged as powerful tools to recapitulate both the structure and function of their tissue of origin. Organoid technology is rapidly gaining ground in translational research due to its broad range of applications, including disease modeling and drug screening.

Several research teams have contributed to the development of 3D culture systems in SjD, particularly organoid models. One of the leading groups in this field, led by Dr. S. Pringle, pioneered the use of parotid gland biopsies to generate epithelial organoids.[3] Their studies revealed intrinsic abnormalities in the SjD epithelium, including impaired proliferative capacity and defective organoid formation. Notably, long-term cultures could not be established from SjD samples in these early studies. The prevailing hypothesis is that epithelial stem/progenitor cells in SjD undergo premature senescence as a result of chronic inflammation, leading to a loss of regenerative potential.

What We Did

We, in turn, decided to develop a salivary gland organoid model to better study the origins and consequences of epithelial dysfunction in SjD. This study has been recently published in “Annals of the Rheumatic Diseases”.[4] We successfully generated salivary gland organoids (SGOs) from labial salivary gland biopsies (LSGBs) of 13 SjD patients and 15 sicca controls. These miniaturized, three-dimensional tissue cultures faithfully recapitulate many features of native gland tissue, including the presence of key epithelial cell types—acinar, ductal, and myoepithelial cells—and functional secretory responses.

These SGOs were cultured over several months and cryopreserved for biobanking, with excellent viability and proliferation capacity. Importantly, even in the absence of immune cells, SGOs from SjD patients displayed persistent disease-specific features:

A chronic interferon signature, a hallmark of SjD, was present in long-term culture without exogenous stimulation.

A reduced functional response to pilocarpine, a cholinergic agent used to stimulate salivation in SjD patients. Organoids derived from SjD patients swelled significantly less than those from controls, which is a proxy of the hyposecretion observed in vivo.

Response to inflammation: When stimulated with inflammatory agents like poly(I:C) or interferon-alpha, SjD-derived SGOs showed appropriate upregulation of key inflammatory mediators, such as BAFF and CXCL10.

Our findings demonstrate that epithelial cells from SjD patients carry intrinsic, long-lasting alterations that do not rely on the presence of immune cells. This challenges the traditional view that glandular dysfunction is secondary to immune infiltration alone. In fact, our organoid model suggests that the epithelial compartment itself is an active driver of disease, both structurally and functionally.

Moreover, we found that treatment with the JAK inhibitor, tofacitinib, improved the swelling capacity of SjD-derived organoids, hinting at the possibility of epithelial-intrinsic therapeutic targets. Although its exact mechanism of action in this context is still under investigation, this result supports the concept of using SGOs as a platform for preclinical drug testing and personalized medicine.

What’s Next

Our current model focuses on the epithelial compartment, but the immune component of SjD remains essential. Ongoing efforts aim to integrate immune cells—such as B cells, T cells, or peripheral blood mononuclear cells—into the organoid system to better reproduce the salivary gland inflammatory niche. Ultimately, we envision co-culture systems that mirror patient-specific immune–epithelial interactions.

Additionally, the ability to test drug response in organoids derived from individual patients opens the door to functional precision medicine in SjD. By correlating in vitro responses (e.g., to pilocarpine or JAK inhibitors) with clinical phenotypes, we may one day tailor therapy based on a patient’s unique glandular biology.

Perspectives

While SGOs will not replace clinical trials, they provide a critical preclinical bridge between molecular insights and therapeutic development. For a disease as heterogeneous as SjD, such patient-specific models are not just technically impressive—they’re urgently needed. We hope that these advances will ultimately translate into more effective, personalized care for patients living with this challenging disease. ■

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Sjögren's
FOUNDATION

PATIENT SEMINAR

The Future of Sjögren's Treatments

A Patient Seminar on Emerging Therapies in Clinical Trials:

There's growing hope on the horizon for people living with Sjögren's. Researchers and clinicians are making real progress in developing new therapies that could bring meaningful relief to patients and several of these treatments are now in clinical trials. Whether newly diagnosed or you have been living with Sjögren's for years, this event is a chance to better understand what's ahead—and how you can be part of shaping the future of treatment.

In this virtual seminar you will hear:

- The latest on emerging therapies and clinical trials in the United States
- Clear explanations of how treatments work in the body
- Insights from top experts in Sjögren's research and care
- Real patient stories from clinical trial participants

Space is limited.
Register now to save your spot
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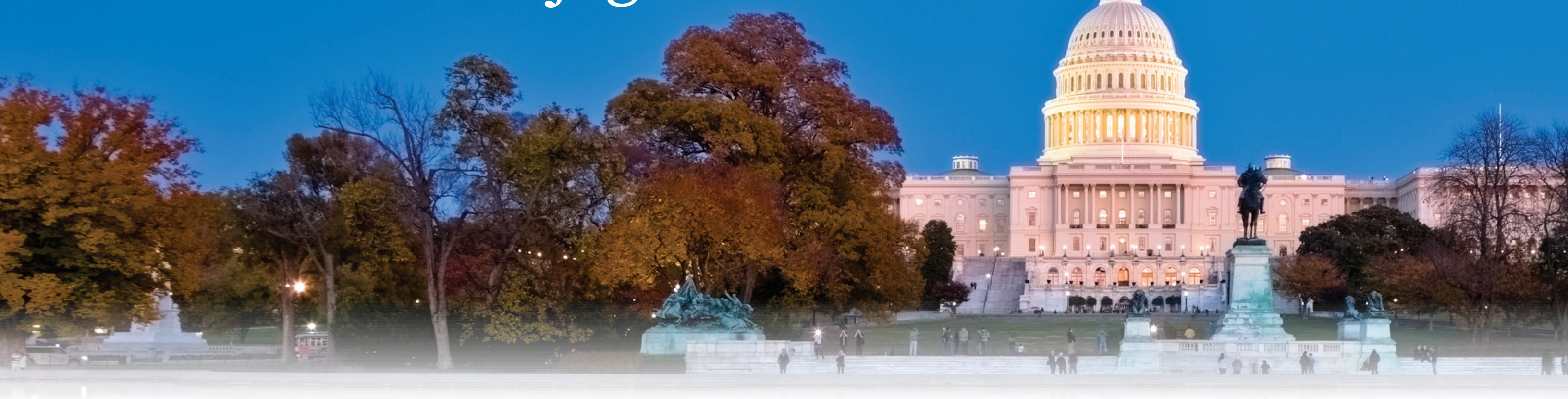
Recent Milestones in Federal Policy and Research for Sjögren's Disease



At the Sjögren's Foundation, we believe public policy plays an important role in improving the lives of people living with Sjögren's disease. Whether advocating for increased research funding or for policies that lower costs and expand access to high-quality health care, we engage to ensure the needs of our community are heard and addressed.

We are committed to taking action on issues that directly impact people living with Sjögren's disease.

Together, these recent milestones highlight the growing national recognition of Sjögren's disease and the Foundation's role in advancing research and awareness through advocacy.

Sjögren's Disease Update Requested in FY26 House Appropriations Committee Report

For the first time, the FY26 House Labor and Health and Human Services Appropriations committee report includes language on Sjögren's disease! While report language is not binding like the appropriations laws themselves, agencies are generally expected to follow the report's directives.

This is a major step forward in raising awareness and encouraging more research on Sjögren's disease. The committee is asking the National Institutes of Health (NIH) to report next year on its research and activities related to diagnosing and treating Sjögren's disease. We hope this update will be included in the Administration's budget request for FY27 and help guide future research efforts. You can read the complete report language below:

> *Sjögren's Disease. —Recognizing that research into Sjögren's disease can lead to improved care for those living with this disease, the Committee requests an update in the fiscal year 2027 congressional justification on NIH research and other activities related to the diagnosis and treatment of Sjögren's disease.*

Sjögren's Foundation Celebrates Release of First-Ever National Institutes of Health Strategic Plan for Autoimmune Disease Research

The Sjögren's Foundation has been engaged throughout the creation of the NIH Office of Autoimmune Disease Research (OADR) and the development of this strategic plan. Our advocacy, input, and partnerships have helped ensure that the voices and needs of Sjögren's patients and families are included in this national research agenda.

In partnership with OADR, we worked to ensure that Sjögren's disease is fully understood and embedded within their mission, strengthening recognition of the disease's systemic nature and its inclusion across NIH priorities.

What's in the NIH Strategic Plan?

The NIH-Wide Strategic Plan for Autoimmune Disease Research is a comprehensive blueprint designed to address the growing crisis of autoimmune diseases in the United States. With up to 50 million Americans living with one or more autoimmune diseases, and more than 140 distinct conditions identified—including Sjögren's—the need for a unified, robust research strategy has never been greater.

The plan is built around five strategic priorities, each with specific objectives:

- **Accelerate Scientific Discovery in Diagnosis, Treatment, Prevention, and Cure of Autoimmune Diseases**

The plan calls for increased investment in basic science to better understand the mechanisms that drive autoimmune diseases, including the triggers of disease onset, and symptoms.

It emphasizes the need for improved research models, and the integration of genetic, environmental, and biological data to identify risk factors and potential therapeutic targets.

- **Promote Research Focused on Enhancing Health for People Living with and At Risk of Autoimmune Diseases**

  Recognizing the challenges of delayed diagnosis and limited treatment options, the plan prioritizes research into early detection, novel diagnostics, and more effective, accessible therapies. There is a strong focus on the preclinical phase of autoimmunity, with the goal of identifying and intervening before irreversible tissue damage occurs.

- **Support Research to Understand the Full Complexity of Autoimmune Diseases**

  The plan highlights the importance of studying diverse patient cohorts over time to understand disease progression, complications, and the impact of co-occurring conditions. It calls for research that will facilitate clinical trial designs for autoimmune diseases, which will enable more meaningful recruitment and actionable results from clinical trials.

- **Build and Maintain Capacity for Autoimmune Disease Research**

  To ensure sustained progress, the plan outlines the need for expanded research infrastructure, integrated clinical trial networks, and advanced data science tools.

  It also addresses the critical shortage of specialists and researchers in the field, calling for new training and workforce development initiatives.

- **Build and Strengthen Partnerships and Interdisciplinary Collaboration Across the Autoimmune Disease Community**

  The plan recognizes that progress depends on collaboration across the autoimmune disease community—patients, advocates, researchers, clinicians, industry, and government.

  It commits to ongoing engagement with patient organizations, ensuring that research remains person-centered and responsive to community needs.

What Does This Mean for the Sjögren's Disease Community?

With the release of the strategic plan, OADR furthers the Foundation's efforts to formalize the renaming of the disease to "Sjögren's disease," dropping "syndrome" from its name. Sjögren's disease is a serious and systemic disease, and we've been working closely with OADR and NIH who have already been adopting the new name, to help the public and health practitioners better understand and recognize the symptoms of Sjögren's disease.

What Are the Next Steps?

With the release of the strategic plan, NIH will begin implementing its recommendations, engaging with key institutes and centers across the research agency, guided by ongoing input from the autoimmune disease community. The Office of Autoimmune Disease Research will coordinate these efforts, monitor progress, and identify research and data needed to advance this strategic plan.

The Sjögren's Foundation will continue to be an active partner in this process—advocating for increased research funding for Sjögren's and autoimmune diseases at NIH, for grants to institutions that have strong Sjögren's research programs and ensuring that the needs of our community are addressed at every stage. This plan reinforces the critical and irreplaceable role of the NIH in driving scientific discoveries and medical breakthroughs.

Keep the Momentum Going

We encourage all members to stay informed and involved as we continue advancing advocacy, awareness, and research efforts. Visit sjogrens.org/advocacy or scan the QR code right to learn more about our current priorities and engagements. ■

Pictured (L–R): Janet Church, Sjögren's Foundation; Dr. Stacie Bell, Lupus Therapeutics; Dr. Dan Wallace; and Dr. Vicki Shanmugam, NIH Office of Autoimmune Disease Research.

IN MEMORIAM

In Memory of Gerald D. Allie
Jayn Carson

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In Honor of My Granddaughter, Tegan
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"Sjögren's Disease" *continued from page 14* ▼

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