



Folia Health

The Leaflet

Learn more about the ins and outs
of Folia and all of its offerings!



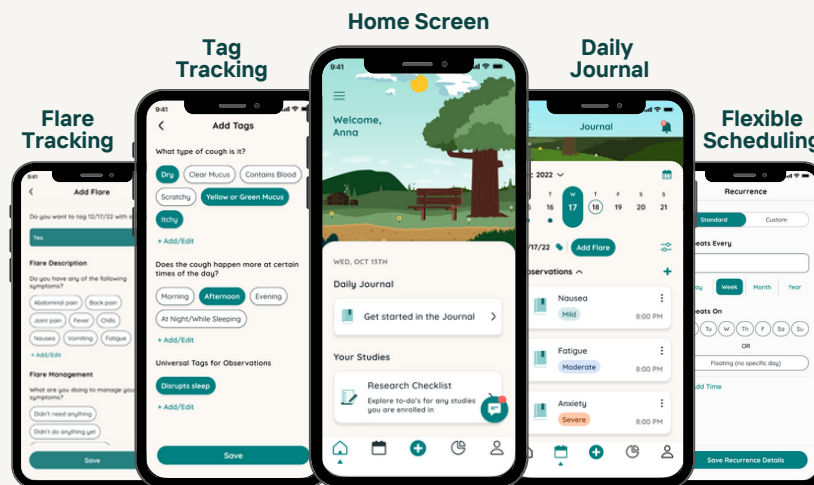
Social Media @foliahealth and @foliacommunity

This Quarter's latest news

Redesign launch

It's been 5 years in the works and we are so excited to share that the new Folia 2.0 is live on all platforms! We've been listening to your feedback and suggestions to make sure we are delivering the best tracking experience yet. Here is what you can expect from our latest update:

- **Home Screen & Daily Journal:** A new look to your home base with everything you need in one place
- **Observation Tracking:** Accurately log your symptoms in great detail in under a minute
- **Treatment Tracking:** Group your treatments together and easily track with a single click
- **Flexible Scheduling:** Set up any schedule you'd like for your treatments
- **Tag Tracking:** Capture important details about your health with consistency via tags
- **Flare Tracking:** Report significant health events with our smart Flare Tracker



We are always open for suggestions from our users as we continue to add new features. If you are unsure or having difficulties navigating the new update, we are here to help! Send us a message in the app or email us at hello@foliahealth.com and the team will reach out as soon as possible.

Exciting new updates and integrations are still to come and you will be the first to learn more about it!

A special shoutout to our Engineering team who has worked tirelessly for the big launch! Check out the **Folia Spotlight** section of this Leaflet to learn more about all our fantastic engineers :)

This Quarter's latest news

Canopy Series wrap up

We kicked off 2023 by asking you what questions you have about how others manage their health. We all experience this world differently. We also all experience our health differently. This is not to say that we don't have similar experiences, and can't learn from each other. By coming together and creating the **Canopy Series**, we collectively created a new approach to understanding the landscape of specific conditions, and what daily life can look like.

Sometimes, asking questions can lead to more questions. So what is next? Creating more reports in more conditions. Knowledge should not be a limited resource, and should instead be shared with the community.

Check out insights from our [Canopy Series](#) on our website!



Strengthening our communities

One of our goals is to create these reports in three specific communities we have been working so hard to build. We have been focusing on building communities with individuals who have or care for someone who has **Multiple Sclerosis**, **Huntington's Disease** and **Myasthenia Gravis**.

These are three different conditions, as Huntington's is an inherited progressive neurodegenerative disease, MS is a disease of the central nervous system, and Myasthenia Gravis is an autoimmune condition. These conditions affect individuals in a wide range of ways, and require the Folia app to be as flexible as possible to make sure individuals capture and are able to understand the data they need. Through the redesign process we have learned so much from individuals in the community, and we look forward to the continued conversations.

If you are or know someone with one of these conditions, please reach out in app or via email to hello@foliahealth.com. We would love to provide a platform to share your story.

User Community Spotlight



Presenting

Jenna

Jenna is a 41 year-old veterinarian technician living in New Jersey. Unlike most cystic fibrosis (CF) patients who are diagnosed either at birth or in their early years of childhood, she was “late to the game” and didn’t receive a proper diagnosis until 12 years old. Jenna was dealing with a lot of medical problems leading up to her medical diagnosis – she frequently had coughing exacerbations, her fingers would turn blue for no reason, and experienced severe asthma allergy attacks. “It felt like I lived at the pediatrician’s office,” Jenna shares. The biggest concern was that she couldn’t maintain any body weight, and so her mom looked up an allergist to take a further look at Jenna’s symptoms. With one look, the allergist said Jenna either had pneumonia or CF. Shortly after, Jenna got her sweat and genetic testing done and was officially diagnosed with CF. That one doctor’s visit changed Jenna’s entire life.

“Navigating life is one thing. Navigating life with a chronic illness is a whole other challenge.” It felt like Jenna was playing catch up – since she went undiagnosed for so long, she had “12 years without any medical treatments or dietary supplements to make up for.” This period also coincided with her teenage years. She’d go through coughing exacerbations during class and would go to school with long sleeves to cover all the IV treatments she was getting in the nurse’s office. “I was so embarrassed, I would feel the need to explain my conditions to everyone.”

Conditions like CF have an added layer of complexity because not all symptoms are visible to others, and sometimes you don’t look the part of a ‘typical patient’. CF patients may qualify for disability benefits due to their lung and pulmonary

User Community Spotlight

symptoms. For example, Jenna has a handicap parking placard that she uses, but rather than easing stress, it can add to the complexities of living with a condition. “The looks that I get when I park at the store or amusement park. They don’t say anything, but you can feel the judgment,” she shares. “People look at you weird. You’re too young, you don’t have a walker, you clearly aren’t a senior citizen.”

It’s a narrative that Jenna battles with herself too. “When I look at myself, I look normal, but inside it’s a jumbled mess.” It’s a strange and complex illness to characterize, since it can vary so much day to day. There are days where Jenna struggles to breathe – a short walk can lead to her heart pounding or her getting wheezy. Then, there are days when Jenna “feels like [she] doesn’t have CF at all, like [she] could run a mile.”

Jenna’s CF journey has had its ups and downs. “I’d get PICC lines every couple years, and a seasonal dose of antibiotics every fall.” Her condition mainly affected her joints, and she was diagnosed with osteoarthritis. Her care team suspects that all the years playing catch up on treatments caused the steroids to affect her joints and bones. Over the years, Jenna wanted a fresh view and a different perspective for her CF care. She found a team close to where she currently resides and called to ask if they were taking new adult CF patients. When they told her yes, Jenna started crying on the phone immediately out of relief.

“My new care team has just been instrumental to my health, both treating my physical symptoms and also keeping me mentally calm.” Jenna’s doctors empathize with her condition, telling her that it’s okay to need steroids or be on antibiotics. The center just opened in 2016 and is up-to-date on the newest treatments and has their own assistance program to help patients advocate for their health insurance. For Jenna, and for most patients getting care in the US, the ongoing financial battle with

User Community Spotlight

health insurance has always been draining. “You fight so hard to wake up everyday, and then you also have to fight to get the medicine to just be able to breathe? I had more fight in me when I was young, but now luckily my care team fights for me.”

It was also through her new CF clinic that Jenna found Folia about 2 years ago. Jenna took part in Folia’s year-long observational study to characterize the day-to-day symptoms of CF patients. She still keeps in touch with some study participants she’s met through the program and checks in with them every so often. “As I get older, I find it so important to be able to have these open-door, light hearted conversations with the people that just get it.” Jenna expresses how refreshing it is to have an outlet to share and connect with people who are going through the same journey that she is.

All throughout Jenna’s life and diagnostic journey, her support system has been a crucial part. “My family has moved heaven and earth to get the best care for me.” In school, her friends and the staff were wonderful and understanding. At work, her coworkers show their support by running a donation drive for CF initiatives every year. Through CF study initiatives and Facebook groups, she is inspired to share her story and connect with others. No one requires Jenna to explain herself or her conditions – they empathize with her struggles, support her during her bad days, and are always willing to learn.

Jenna doesn’t let her condition define her life – “I have so much more to give!” Her work and personal life has started to even out now. She’s a recent homeowner, where she wakes up every day excited to look out the window for deers and play with her four cats. She looks forward to traveling in the near future to see more of the world and to have a “mental and spiritual reset.” Her top destinations are her happy place at Disney, back to the Bahamas to swim with the wild pigs in Exuma Bay, and to check off her life-long bucket list of seeing the Northern Lights.

Folia Spotlight: Engineering Team!



Peter Cerhan

Director of Engineering
End User Applications
Years at Folia: 5+



Peter loves the chance to work on many (very different) projects at Folia. On his days off/weekends, he likes to run and is planning his wedding! If Peter could switch jobs with anyone at Folia for a day, it would be Hiba as he would like to see how we are understanding the tracking data and what we can learn from it. His favorite form of potato is hash browns.



Willy Mello

Senior Software Engineer
Web
Years at Folia: 1+



What Willy enjoys most about working at Folia is that everyone here cares a great deal about the users and doing right by them. Over this past summer, he did four sprint triathlons and a lot of fishing. If Willy could switch jobs for a day with anyone at Folia, it would be Carlos so he could do some mobile development! His favorite form of potato is twice baked.



Tanya Bielinski

Software Developer
Android
Years at Folia: 2+



Tanya is currently out on maternity leave right now! We miss her a lot in the office and all hope that Tanya and her growing family are doing well! :)



Carlos Morales III

Software Developer
iOS
Years at Folia: 1+



Carlos enjoys the flexibility while working at Folia. On his days off and weekends, he loves to hike. If Carlos could switch jobs for a day with anyone at Folia, it would be Luke since he likes thinking about, strategizing, and then delivering on a product. His favorite form of potato is russet potatoes.



Peter Virtue

Software Engineer
Full-Stack
Years at Folia: 1+



Peter enjoys getting to see the impact we're able to make on people's lives in real time at Folia. On his days off, he loves to golf and spend time outdoors. If he could switch jobs with anyone, it would be Paula or Jason since their day-to-day is entirely different and he would love to experience that. When asked about favorite form of potatoes, Peter says "it used to be Russet potatoes, however recently it's shifted to smaller Yukon Golden potatoes. I've been obsessed with a smashed potato recipe recently and the smaller Yukon Gold potatoes make for the perfect smashed potato."



Xi Chen

Software Engineer
Integrations
Years at Folia: 1+



Xi enjoys the team environment while working at Folia. Outside of work, you can find her either dropping off or picking up her kids from after school activities. If Xi could switch jobs for a day with anyone at Folia, it would be Hiba. She would love to see how our users are tracking their health everyday and generating so much real-world data! Her favorite form of potato is chili barbecue chips.

Folia Digest - Inverse Vaccines

Our immune system is a vital part of our health. This complex network of organs, cells, and proteins work to detect, defend, and remember foreign bodies. It recognizes infections, fights off viruses and bacteria to protect our body's healthy cells. In the immune system, specialized T cells keep a record of all the pathogens it has fought off for future reference.



Autoimmune diseases occur when our body fails to tell the difference between our own and foreign unhealthy cells and so **our immune system mistakenly attacks itself**. The T cells work to retain a memory of the immune response, so this unintended process can happen even quicker in the future and is hard to control and treat. Currently, treatments for autoimmune diseases generally focus on suppressing the immune system's activity as a whole. While this can mitigate the unintended attacks against our body's healthy cells, it also leaves ourselves vulnerable to actual foreign viruses and bacteria.

What if there was a way for our immune system to stop remembering these false attacks on our own healthy cells? This could be a better way to treat autoimmune diseases – telling our body to **stand down in response to “safe” cells** while still **allowing the immune system to respond to foreign pathogens** at full force. A group of researchers at the University of Chicago are working on an **“inverse vaccine”** that could make this a reality.

Folia Digest - Inverse Vaccines

How does it work?

Traditional vaccines work to introduce foreign antigens into the body to raise a slight alarm and prime our immune system to respond. The so-called inverse vaccine would just do the opposite. Instead of alerting the immune system, it suppresses the immune response by marking these antigens as “safe”.



The inverse vaccine leverages the ability of a special group of cells in our liver specialized to recognize our own healthy cells from foreign viruses and bacteria. The research team identified that tagging molecules with a special sugar called N-acetylgalactosamine (pGal) allows them to mimic this process. The immune system can learn that any antigens coupled with pGal are “safe cells”.

As outlined in the [published paper](#), researchers tested out this hypothesis in the lab on mice with a type of multiple sclerosis, where T cells attack a specific antigen in myelin sheaths of the nervous system. The inverse vaccine tagged this antigen with pGal and was able to reprogram the animal’s immune system to recognize myelin cells as “safe”, suppress the immune attacks, and reverse the disease symptoms in the animal.

So what does this mean?

These findings on the inverse vaccine offer a promising solution for better therapies for autoimmune diseases. However, there is a long road ahead before these therapies are available on the market. There will have to be more research efforts to

Folia Digest - Inverse Vaccines

identify the molecular basis of various autoimmune diseases. Additionally, translating the success from animal models to a diverse and ever-changing human patient population will be tricky. Clinical trials for this type of inverse vaccine have already been launched for multiple sclerosis and celiac disease, and these results will be interesting to follow.

The lead researcher of the aforementioned paper, Jeffrey Hubbell, shares his excitement about what this means for the medical field – “What is so exciting about this work is that we have shown that we can treat diseases like multiple sclerosis after there is already ongoing inflammation, which is more useful in a real-world context.”

Read more about the inverse vaccine here:

<https://pme.uchicago.edu/news/inverse-vaccine-shows-potential-treat-multiple-sclerosis-and-other-autoimmune-diseases>

“Synthetically glycosylated antigens for the antigen-specific suppression of established immune responses,” Tremain et al, Nature Biomedical Engineering, September 7, 2023. DOI: [10.1038/s41551-023-01086-2](https://doi.org/10.1038/s41551-023-01086-2)