Vol. 1, JAN 2024

THE V-ATPASE VOICE

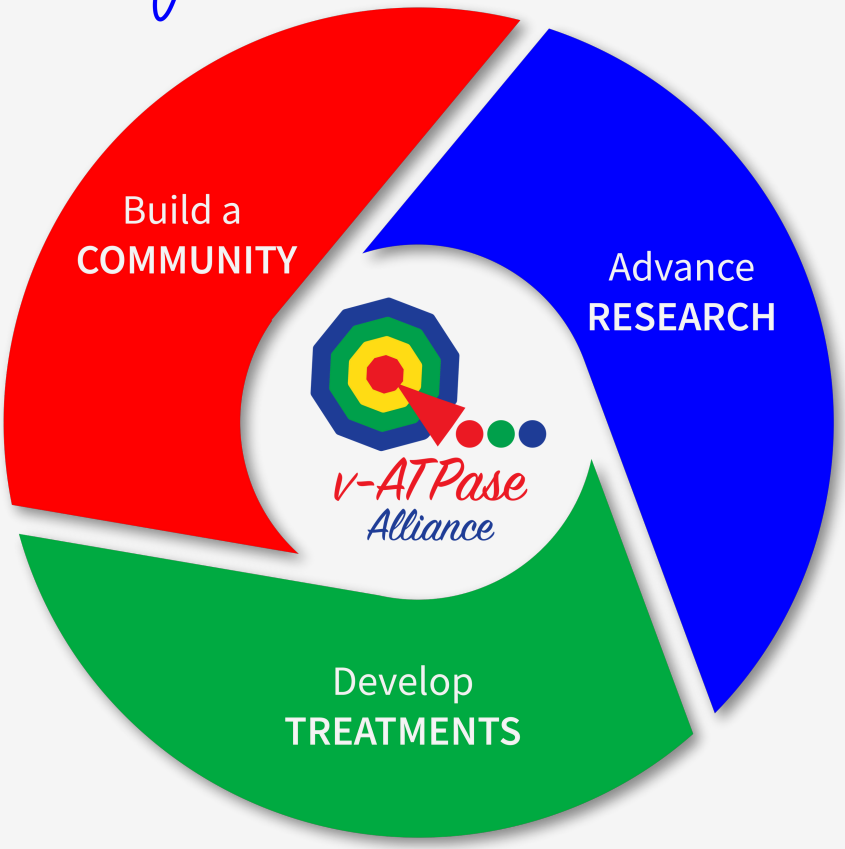
v-ATPase Alliance

2024 - The Year of Action

Ed. 1, JAN 2024

THE V-ATPASE VOICE

Key Priorities:



Build a COMMUNITY
Through sharing we will be able to empower each family with information to discuss with each care team.

Advance RESEARCH
Collect information and seek partnerships and support research to help define disease biology.

Develop TREATMENTS
Foster collaboration among researchers, drug developers and regulators to create tools and resources in therapeutic developments.

We are v-ATPase Alliance

2024 - The Year of Action

THE V-ATPASE VOICE

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Message from the Founders



The Genesis of a Change

From the very beginning when our children started showing the first signs of failure to thrive, we desperately wanted to know what was happening with them. The constant search for answers that doctors didn't have was a dreadful sign that something was seriously not right. It was a lonely start to parenthood as we navigated test after test, medical appointment after medical appointment, with no other families to relate with, and unsure of what the future might look like. When we finally received a diagnosis, we found out just how ultra-rare our children were. And if that wasn't enough, we also realized that medical professionals had little to no understanding of v-ATPase disorders, what to expect, how to manage them, and what the best care plan would be. In fact, the first medical communications reporting the different v-ATPase genes and human conditions were just published in 2018 (ATP6V1A), 2021 (ATP6V0A1), and 2022 (ATP6V0C), and while some knowledge about the biology of these cellular mechanisms is emerging there is much we still don't know and critical gaps to develop treatments remain.

First Medical Publications

ATP6V1A	ATP6V0A1	ATP6V0C
2018	2021	2022

We knew that finding a community in the ultra-rare disease space would be a difficult task, but one more important than ever. We wouldn't wish a v-ATPase diagnosis on anyone, but we're grateful that those of us that have one have found each other through the power of social networks.

Last August the three of us connected over the phone for the first time and we realized that we have a community to serve, and that as few as we might be, we can have a voice together and make a difference.

Rare genetic diseases are often referred to as life-long incurable diseases, but things are not as they were before. Previously intractable genetic diseases such as Spinal Muscular Atrophy, Duchenne Muscular Dystrophy, and Sickle Cell Disease have now cutting-edge treatments approved by the FDA and available for those in need.

Message from the Founders



At v-ATPase Alliance our mission is to build on these incredible scientific advancements, and through a strong and supportive community, advance translational research and enable the development of effective treatments for our children. In 2023 we took foundational steps to ensure we have the right organizational structure to support the community. We incorporated the Foundation and are in the process of having our charity status approved by the IRS with the support of a reputable international law firm that has generously helped us making sure all is well and compliant. We introduced our Alliance to the rare disease community in several conferences and connected with multiple researchers around the world. Now, we're excited to announce that we established a partnership with Global Genes to create the first Patient Registry and Natural History Study for v-ATPase disorders. This effort aims to collect and share rare disease patient data with the goal of expediting diagnostics, understanding disease heterogeneity, fueling drug discovery, and advancing development of novel treatments. We will talk much more about this over the next few months.

We are spread across the globe, and we are still tiny in numbers comparatively speaking, but we have a voice, we have a mission, and we have the collective energy to move the needle forward on research and medical knowledge. Our efforts can make a difference for our kids and for every child who comes after. We are grateful to be embarking on this journey with all of you, and to have an Alliance where we can learn from and support one another through both the joys and the challenges our families face. Although we have work to do, we know that we can also have fun along the way and build bonds that will span continents. Thank you for being a part of this, and cheers to a hopeful year ahead.

With Gratitude,

Ana Rita Moreira
Luis Miguel Oliveira
Kristin Anderson

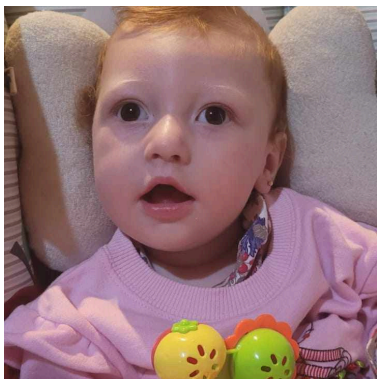
The Heroes Wall

Meet Avril

We Remember...

At v-ATPase Alliance we are bonded together by the challenges and the heartaches of this disease, and we stand together in remembrance and honor of Avril and her family who were her fearless advocates and continue to be champions for those affected by v-ATPase disorders. This tribute is written by her mother, Agustina Mendez, in memory of Avril.

Avril



Apr. 15, 2021
Aug. 29, 2023

The Heroes Wall

Meet Avril

Avril came into our lives on a hot day in April, on April 15, 2021, and left on a very cold day, on August 29, 2023. Avril was and is everything a family wants, a beautiful baby, eyes as big as almonds, red curls that shone in the sun just like her laugh, those few times we were able to hear her.

Avril came into our lives in the company of a condition that we did not understand and it was difficult for us to give it a name. She was the first in our country, Argentina, to be diagnosed with ATP6V1A. And honestly for us they were meaningless letters and numbers. We dreamed a lot of having our baby, and it stayed that way for two years, a baby who little by little grew in her little body and had more needs. Avril was magic and learning for us. Through it we became doctors, nurses, teachers, therapists, builders and drivers. We traveled the country, crossed the borders, met families who were going through the same thing as us thousands of kilometers away, we spoke different languages, we dared to tell their story, to protest for Rare Diseases.

And then came the tracheotomy, the postural chair, the gastrostomy, the orthopedic bed. And the Avril that we dreamed of was increasingly different but the love multiplied, grew and was immeasurable. Avril touched hearts in all parts of the world, and she knew it, Avril knew everything, she had all the wisdom that we did not have. She knew how and when to leave. That August 29th we had to let her go, we had to say goodbye to her. So that it transcends, so that it reaches all the places that it could not be in this world. Avril, our beautiful baby with red curls, the second daughter, second granddaughter, younger sister of a warrior, the first female daughter, the most loved.

She left us the legacy of continuing to help, of moving forward so that more people know about this condition. There are many of us throughout the world who today are united so that ATP6V1A and all v-ATPase disorders become visible. And we will continue on that path, for Avril, and for each patient. Thank you Avril for passing through our lives. They were two beautiful, intense, difficult and at the same time wonderful years. Always and forever we will love you. Your family❤️

To see more of Avril's story, follow along on Instagram

v-ATPase Patient Registry

Open Soon

First Patient Registry for v-ATPase Disorders

At v-ATPase Alliance we are committed to raise awareness and advance medical research for v-ATPase disorders. Today we are thrilled to announce a new and exciting partnership with Global Genes, a large non-profit with the mission to generate information and resources to all communities affected by rare diseases, to create the first Patient Registry for v-ATPase patients. This partnership will enable the collection of standardized and research ready information for v-ATPase disorders, and marks a significant milestone in our journey to develop treatments for our children.

v-ATPase Alliance

Global Genes®
Allies in Rare Disease

What is a Patient Registry?

A patient registry is a systematic collection of standardized information about individuals with a specific medical condition. These registries are organized databases that gather and store data on patients who share a common diagnosis or condition. The information collected in patient registries typically includes demographic details, medical history, clinical outcomes, treatments received, and other relevant data.

Why is it important?

- Long-term Tracking
- Research and Clinical Studies
- Feel Empowered to have Informed Discussions
- Assess Safety and Effectiveness of New Drugs or Devices
- Enhance the Quality of Care
- Natural History of the Disease

v-ATPase Patient Registry

Open Soon

Why is it important?

Registries provide valuable data for research and clinical studies, allowing researchers to analyze trends, outcomes, and the effectiveness of treatments. They can help identify patterns and contribute to evidence-based medicine. Registries also allow for the long-term tracking of individuals with specific conditions. This longitudinal data can provide insights into the natural history of the disease, the impact of interventions over time, and the overall health and well-being of the patient population.

Pharmaceutical companies and medical device manufacturers may use patient registries to gather data on the natural history of a disease to assess safety and effectiveness of new drugs or devices. This information is important for regulatory submissions and post-market surveillance.

Similarly, healthcare providers can use patient registries to identify areas for improvement and enhance the quality of care.

And last but not less important, patient registries are tools that we, the community, can leverage to understand more about the disease and feel empowered to have informed discussions with physicians and other health professionals, as well as use them to raise awareness and involve the research community, advocate for policy changes, and enhance overall care.

What this means to all of us?

A patient registry is as valuable as the level of participation and compliance from all the community. The more information and details we can provide, the richer the data set will be. Having a broad participation from the community is even more important in the case of ultra-rare diseases where the numbers are very low to begin with.

We are excited with this novel instrument we're building for the v-ATPase community and hope you'll join us creating the First Patient Registry for v-ATPase Disorders and be a crucial part of advancing medical research and awareness! The study is free for participants; you can conveniently participate from home (It's all ONLINE); your data is YOURS and you can withdraw from the study at any time removing all the data; all data is treated in aggregate form, ensuring complete de-identification (no personal information is shared).

Next Steps

The registry is not ready yet but we're working hard to bring it to you soon. We'll talk much more about it over the next couple of months and will be available to answer all questions you may have.

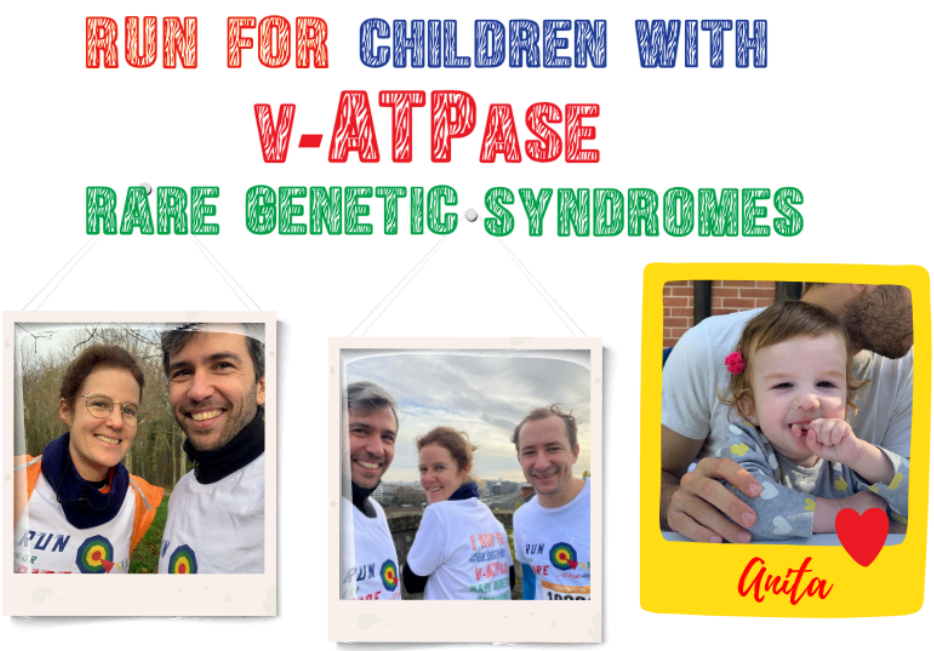
Stay Tuned!!!

Community in Action

Run for Children with v-ATPase Rare Genetic Syndromes

In November, Magda and Damien, parents of Anita, ran a 10k as part of the NordicTrack Cross du Figaro in Paris to raise awareness for their daughter's condition, ATP6V1A, and all the children with v-ATPase Rare Genetic Syndromes.

They were the first family to proudly debut our T-shirts as they took part in the event for AFM Telethon which raises money for rare diseases in France. The entire v-ATPase Alliance applauds their efforts and thanks them for representing each of us around the globe at this exciting event.

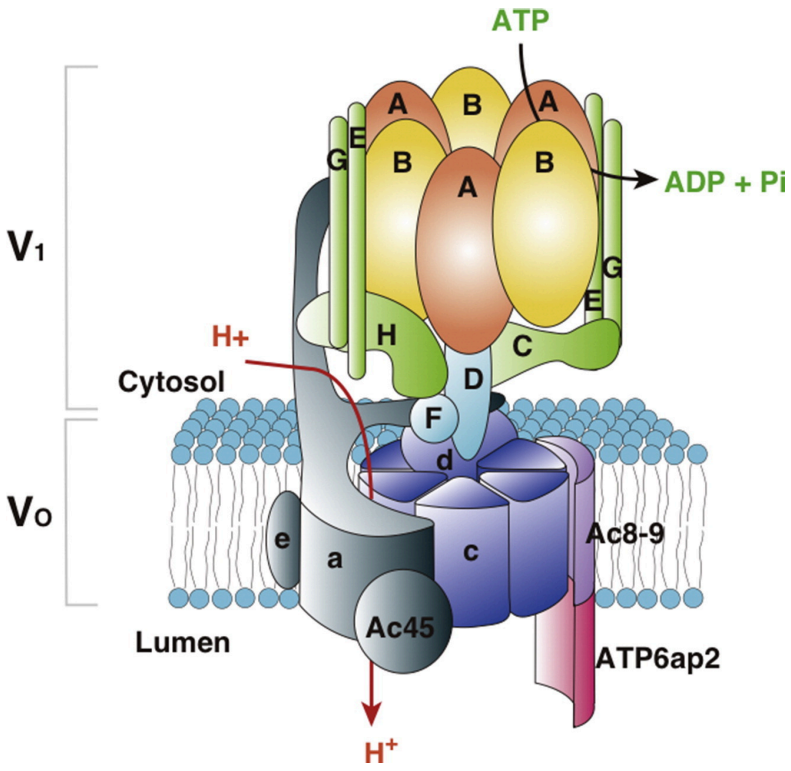


If you have an upcoming run or sporting event and want to help give visibility to the Alliance and v-ATPase disorders, please reach out and we can set you up with game day gear! We can't wait to see our shirts everywhere in the world!

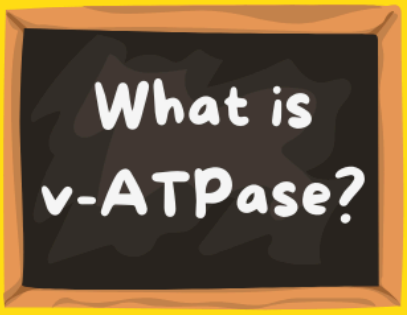
What is v-ATPase and all these genes... ATP6V0A1, ATP6V0C, ATP6V1A, and ATP6AP2?

Our cells are crowded factories working 24/7 to ensure our organs are functioning well and supporting life. As any factory, cells have various compartments (or areas) for specific functions, but instead of walls, these compartments (or organelles) are limited by membranes. Several of these compartments, including lysosomes, endosomes, Golgi apparatus, and secretory vesicles (these are all cellular structures) need an acidic environment to be functional. The v-ATPase, also known as vacuolar-type ATPase, is a tiny pump that uses energy to move protons (H+) across the membranes. This makes the compartments more acidic, enabling their function.

ATP6V0A1, ATP6V0C, and ATP6V1A are some of the genes that make parts of the v-ATPase machinery, and ATP6AP2 although not technically part of v-ATPase, makes an accessory protein that is responsible for assembling the v-ATPase pump.



v-ATPase Classroom



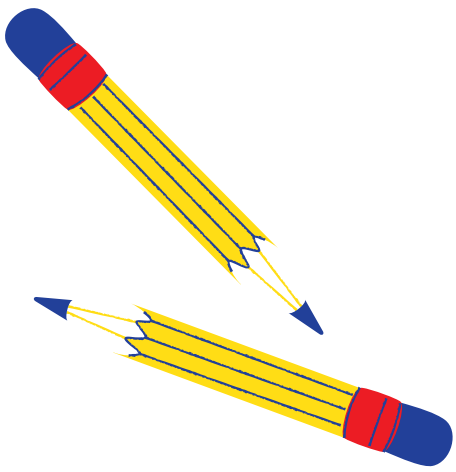
The v-ATPase is composed of two main parts: the V1 domain, located in the outer part of the membrane, and the V0 domain, embedded in the membrane. ATP6V1A is part of the V1 domain and is the engine that uses energy to capture and support the transport of the protons. ATP6V0A1 is responsible for transporting the protons, and multiple ATP6V0C units form a channel that opens the membrane so that the protons can move inside the organelles. All these genes/proteins work in sync as an alliance to keep the pH balanced inside the cell.

This acidic environment is essential for a variety of cellular processes. In lysosomes, the cell's recycling centers, the acidity activates enzymes that break down cellular waste, like worn-out organelles and damaged structures. In synaptic vesicles, the tiny packages used by neurons to communicate with one another, the acidity enables the storage and accumulation of neurotransmitters until they need to be released, sending signals between nerve cells. The v-ATPase also plays a crucial role in protein processing and trafficking, aiding in the journey of proteins through the secretory pathway, where they receive their final touches before being dispatched to various destinations within or outside the cell.

Deficiencies in v-ATPase genes lead to pH gradient imbalances disrupting all these essential cellular activities. Lysosomes cannot efficiently recycle cellular waste, preventing the cells to operate and develop seamlessly, and the synaptic vesicles used for neuronal communication are likely poorly filled with neurotransmitters potentially contributing to the learning disabilities and seizure activity.

Restoring the pH gradient in cells would likely have therapeutic benefits for patients with v-ATPase disorders.

Learn More



Our Mission

Get involved with our Mission:

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2024 is the #YearOfAction. Want to be involved? Here is a short list of quick actions you can take, that will help us grow and work towards our goals:

Email to 20+ friends

Our handle is @vatpasealliance across all platforms: Facebook, Instagram, LinkedIn, X (Twitter), Threads.

Unite Families

Advance Scientific Research

Raise Awareness

CONTACT US

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