



# The Dandy-Walker Alliance Newsletter

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## Dandy-Walker Alliance to collaborate with Bionaut Labs

The Dandy-Walker Alliance is collaborating with Bionaut Labs to educate our constituency about an investigational new treatment for obstructive hydrocephalus associated with Dandy-Walker Syndrome.

Bionaut Labs has developed a “Bionaut™,” a remote-controlled micro-scale robot designed to treat life-threatening central nervous system conditions by delivering treatments to regions of the brain that are otherwise difficult or impossible to access with current interventions. The device is smaller than a grain of rice, measuring about one millimeter in length.

These “Bionauts” may be used to pierce and relieve the obstruction caused by obstructive hydrocephalus cysts in certain Dandy-Walker patients. The procedure is minimally invasive; the Bionaut is injected into the base of the skull and guided by low magnetic forces (1/10 to 1/100 of that used in an MRI). After piercing and draining the cyst, the Bionaut is then removed from the body.

The Dandy-Walker Alliance will help identify and educate patients who meet the criteria and are willing to share their MRIs for the purpose of training the Bionaut devices. Bionaut Labs will use patient MRIs to train the devices on the procedure and automate their recognition of fluid filled cysts in the brain.

These images will help the Bionaut engineering team better identify the different structures associated with this form of obstructive hydrocephalus and



allow them to optimize the Bionauts for clinical procedures going forward.

“We are incredibly excited about this opportunity to partner with Bionaut Labs,” said Dandy-Walker Alliance Founder and President Eric Cole. “This technology has the potential to change the lives of numerous individuals in our Dandy-Walker community, and we look forward to supporting Bionaut Labs as they work to make it a reality.”

“This collaboration is a critical step in developing Bionauts for treatment of obstructive hydrocephalus associated with Dandy-Walker,” said Dr. William Loudon, a veteran neurosurgeon and VP of Neuroscience at Bionaut Labs. “We look forward to working with the Alliance as we pursue our mission of providing better treatment option and quality of life for these patients.”

All images will be kept confidential and will be directly submitted to Bionaut Labs.

You can learn more about the Bionaut technology [here](#).

For any questions about how to get involved and submit images, please contact Dr. William Loudon at [clinical@bionautlabs.com](mailto:clinical@bionautlabs.com).

**Read more about Bionaut Labs on Page 2**

**Welcome to the Dandy-Walker Alliance Newsletter!**  
Each month we'll recap the big Dandy-Walker stories, highlight community members who are making a difference, and give updates on research, events, and more!

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### Join our Contact List!

The Dandy-Walker Alliance Email and Contact List will keep you up to date on all organizational news and updates.

Plus, registering for the contact list allows us to connect you with other Dandy-Walker families so that you can create your own support network right in your home town or state! Register at [www.dandy-walker.org/email](http://www.dandy-walker.org/email) or scan the code below!



# Bionaut Labs develops groundbreaking new treatment for obstructive hydrocephalus

Over the last five years, Bionaut Labs has developed a potentially life-saving micro-robotic technology for which the U.S. Food and Drug Administration (FDA) has granted a Humanitarian Use Device approval to treat *Obstructive Hydrocephalus associated with Dandy-Walker Syndrome*.

This remote-controlled micro-scale robot, called a Bionaut™, can deliver therapies to regions of the brain that are otherwise difficult or impossible to access with current interventions.

To treat obstructive hydrocephalus associated with Dandy-Walker Syndrome, the Bionaut is introduced at the base of the skull using a standard injection technique, much like that used for epidural anesthesia. It is then precisely guided by a computerized external magnetic propulsion system to pierce the cyst, thereby relieving the obstruction and normalizing flow of cerebrospinal fluid. The Bionaut is then removed from the body.

The magnetic energy required for Bionaut guidance does not involve radiation and is less than 10 percent of that used in magnetic resonance imaging (MRI). The procedure is designed to be minimally invasive and is expected to take



**A Bionaut next to a penny for size comparison. Photo courtesy of Bionaut Labs.**

about an hour in a standard neuro-interventional suite.

Bionaut Labs' mission is to improve the lives of individuals with central nervous system conditions such as obstructive hydrocephalus associated with Dandy-Walker Syndrome. Their goal is to reduce the need for highly invasive and complication-prone procedures such as ventriculoperitoneal shunts and third ventriculostomies to bypass cyst-related CSF obstructions. Planning is already underway to conduct clinical trials in leading neurosurgical centers across the United States.

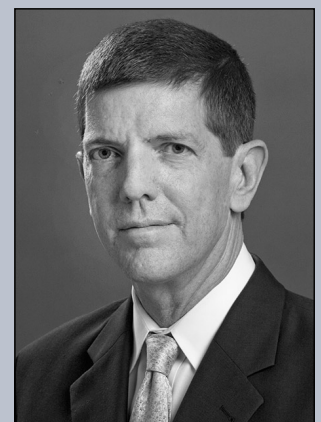
## Your MRI Can Help Train the Bionauts!

In order to develop the Bionaut system, Bionaut Labs needs images of cranial cysts associated with Dandy-Walker Syndrome where obstructive hydrocephalus is present. These can either be MRIs or CT scans for their engineering team to better understand the cyst anatomy that occurs in patients who meet the criteria.

If you or your loved one meet these criteria and are willing to share any head MRI or CT image sets, you will be supporting the development of a promising groundbreaking therapeutic platform that could significantly improve the lives of patients with obstructive hydrocephalus associated with Dandy-Walker Syndrome and those with other serious central nervous system conditions.

Images will be securely maintained in a highly confidential manner, and only shared with the U.S. FDA regulators and the scientific community in an anonymized fashion. Should you be interested in helping, Bionaut Labs will send a simple consent form for your review and signature.

**Get involved today! Email Dr. William Loudon at [clinical@bionautlabs.com](mailto:clinical@bionautlabs.com).**



**Bionaut Labs  
VP of Neuroscience  
Dr. William Loudon**

# Support the Dandy-Walker Alliance while you shop!

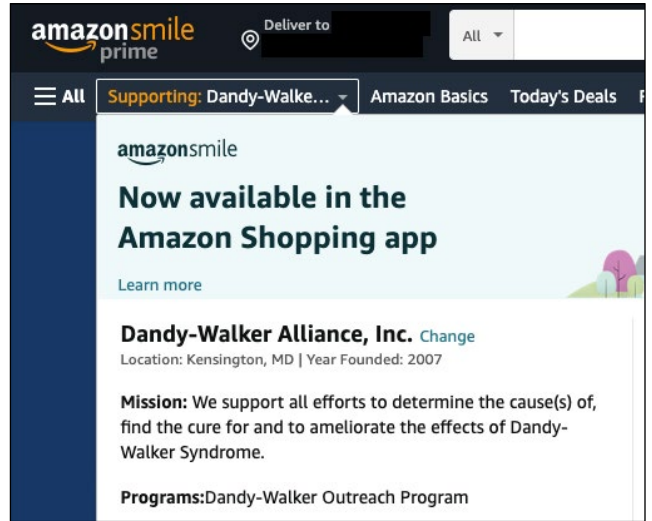
Holiday season is right around the corner, and many people are starting to think about gifts for their loved ones.

As you make your list and start shopping, make sure you sign up to support the Dandy-Walker Alliance through Amazon Smile!

It's easy. Go to [smile.amazon.com](https://smile.amazon.com) and sign into your Amazon account. Then, select "Dandy-Walker Alliance, Inc." as your charity of choice. Then, start shopping!

A portion of each purchase made through smile.amazon.com will go to the Dandy-Walker Alliance to support families around the world, raise awareness, and fund research into the genetic causes of Dandy-Walker.

It's a win-win! You can give your loved ones gifts they'll really enjoy and make a difference in the lives of people affected by Dandy-Walker worldwide. Visit [smile.amazon.com](https://smile.amazon.com) to get started today!



## How Can the Dandy-Walker Alliance Support You?

*The Dandy-Walker Alliance is dedicated to supporting individuals and families around the world affected by Dandy-Walker on a daily basis.*

We regularly update our resources page with new information that can help both those new to the diagnosis as well as those who continue to need support along their journeys.

But, we want your input. Is there something else you would like to see on the Dandy-Walker website? Let us know, so we can add it to our site and continue to support families like yours around the world!

Email [chris.rogers@dandy-walker.org](mailto:chris.rogers@dandy-walker.org) today to start the conversation!



## Thank You, Corporate Partners!

