EMBRACE
A newsletter for anyone touched by the rare genetic disease CADASIL

The mission of CureCADASIL/CADASIL Association is to raise awareness of CADASIL, ensuring it will be universally recognized and understood by the medical community, enabling patients to be correctly diagnosed. We are dedicated to helping patients, families, caregivers, and other supporters touched by CADASIL. We aim to unite patients and the medical community toward the common goal of treatments and ultimately a cure for this rare genetic disease, by promoting Communication, Advocacy, Research, and Education.

Please remember cureCADASIL in your end-of-year or New Year gift giving. You can help fund vital research!

Donations may be made via check or PayPal.

cadasilassociation.org/donate

December 2015 - Issue 8
Part 2

Too much news for just one 2015 issue! Be sure to see Part 1!

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Want to tell your story? Have a question for the doctor? Planning an event? Upcoming newsletters will feature CADASIL patients and their loved ones sharing personal stories of living with CADASIL or caring for someone with this rare genetic disease. We welcome your submissions of stories, questions, news, memorials, and events. Please email them to: info@cadasilassociation.org
PHOTOS & NEWS

Photos from conferences, meetings, and awareness events attended by cureCADASIL trustees and members in 2015

Please share what you are doing so we can include you in EMBRACE! Email us at: info@cadasilassociation.org

NORD NEWS:
cureCADASIL Vice President Nancy Maurer continues to communicate with NORD (National Organization for Rare Diseases). Some highlights from Nancy's efforts with NORD in 2015 include:

- Having the cureCADASIL Family Registry profiled in NORD’s August 2015 e-newsletter;
- Securing CADASIL as NORD’s “Rare Disease of the Day” on November 3rd, 2015;
- Working with a NORD representative to have the cureCADASIL Family Registry featured in other NORD publications;
- The possibility of highlighting one of our cureCADASIL Fellows (an awardee of a cureCADASIL research scholarship) in an upcoming issue of their new medical student newsletter.

cureCADASIL Trustees Anne McGuinness and Ronnie Bradbury participated in RDLA’s (Rare Disease Legislative Advocates) In-District Lobby Days in August. They met with Congresswoman Bonnie Watson Coleman, 12th District, New Jersey, to advocate for CADASIL and all rare diseases. Congresswoman Bonnie Watson Coleman joined the Rare Disease Caucus.

Trustees Ronnie Bradbury and Anne McGuinness attended the NINDS Nonprofit Forum in September.
PHOTOS & NEWS

At the same time during the Rare Patient Advocacy Summit, hundreds of people in the rare disease community used their cell phones and Twitter accounts to ask their US State Senators to support the 21st Century Cures Act – for Innovations for Healthier Americans. cureCADASIL.org supports this Act.

During the Summit, Janet Mills was interviewed by Dr. James Radke with the Rare Disease Report about her journey to diagnosis with CADASIL and discussed many of the symptoms that CADASIL patients experience. This video may be shared. [https://www.youtube.com/watch?v=lcfUfxssf0ow](https://www.youtube.com/watch?v=lcfUfxssf0ow)

Global Genes Events in Huntington Beach, California during September 2015

cureCADASIL members and trustees met up during the Summit in Southern California. L-R: Don Whitehouse, Kim Whitehouse, Janice Ragazzo, and Janet Mills

cureCADASIL trustees Janice Ragazzo and Janet Mills shared information about CADASIL at the Summit while networking with other rare disease patient organizations

CADASIL patients Pam Scott and Janet Mills attended the Global Genes’ Gala on Saturday night during the event.
PHOTOS & NEWS

To our delight, the Rare Disease Report recently announced its Top 10 Rare Disease Interviews for 2015, and Dr. Swati Sathe, a scientific advisor for cureCADASIL.org, was chosen as #8! This is a huge honor for her and a major step toward awareness of CADASIL in the medical community. In the interview, she discusses the typical symptoms that occur through a CADASIL patient's life.

Congratulations and thank you for your dedication to CADASIL, Dr. Sathe!

You can watch her interview at this link: raredr.com/news/top-10-rare-disease-report-interviews

cureCADASIL.org arranged for this interview. We are proud to have Dr. Sathe on our Scientific Advisory Board. cureCADASIL has also been working with her on educational programs for medical professionals. In November, Dr. Sathe and Anne McGuinness presented a webinar on CADASIL. This webinar was arranged through the partnership between cureCADASIL and NYMAC (New York Mid Atlantic Consortium) for Genetic and Newborn Screening Services. This program was recorded and will be posted when it becomes available. Stay tuned!

Cure CADASIL/CADASIL Association was one of 700 groups to sign on as supporters of the 21st Century Cures Act before the US Congress in 2015.


The 6th Annual CADASIL Awareness Day on November 16th, 2015. The first CADASIL Awareness Day was marked on the CADASIL Support Facebook page on November 16th, 2010.

cureCADASIL participated for the first time in Giving Tuesday on December 1st, 2015. We received donations from several sources that day through our Razoo Giving Day fundraising page and by purchases of Bravelets “Be Brave” jewelry. We plan to participate again in December of 2016!
**CADASIL RESEARCH UPDATES**

On June 13th, cureCADASIL Board members met with Joseph Arboleda-Velasquez, M.D., Ph.D. and other medical research professionals and students in Boston, Massachusetts to go over current CADASIL research. Speakers included: Carlos Restrepo, Ms.C., M.D., Ph.D. student; Daniel Oh, B.A., M.A., M.D. student; Jeantine Lunshof, Ph.D.; Yakeel Quiroz, Ph.D.; Arturo Machuca-Parra, Ph.D.; Diana Sanchez-Palencia, Ph.D., Alexander Bigger-Allen, B.A.; Vincent Primo, B.S., Ph.D. student; Mark Graham, B.S., cureCADASIL Fellow 2014; Sam Scott, and cureCADASIL Fellow 2015. Attendees were given the opportunity to tour Dr. Joe’s lab after the meeting.

Sam Scott, working in the laboratory of Dr. Joseph Arboleda at Harvard Medical School, was awarded cureCADASIL’s 2015 Summer Research Scholarship for $5000.00. Please read about Sam’s work on our website at: [http://www.cadasilassociation.org/grant](http://www.cadasilassociation.org/grant)

Mark Graham received the 2014 Summer Research Scholarship. His work was highlighted in a previous edition of EMBRACE Newsletter. The document is also available at the link above.

Please note that we offer the scholarship to a number of researchers and their students each year. Dr. Arboleda's students have been the only ones, to date, to apply for this opportunity. cureCADASIL will offer the scholarship again in 2016.
“CADASIL, Notch 3 and all that” by Phil Jones (with thanks to a geneticist friend who provided some of the material, particularly the mechanical analogy)

A brief, simplified genetic insight to the condition....

It may be helpful, though not essential, to explain the meaning of a few terms that often crop up when discussing CADASIL:

Amino acid: An amino acid is a simple chemical compound containing both a carboxyl (—COOH) and an amino (—NH2) group. Amino acids are used in cells of the human body in order to make proteins. The amino acid involved in most CADASIL patients is called cysteine.

Protein: A protein is a compound comprising one or more chains of amino acids. They are an essential component of living organisms, notably as structural components of tissues such as muscle, hair, etc.

Folding: Protein folding is the process by which a protein structure assumes its functional shape.

Gene: A gene is part of the DNA that controls an individual’s development, inherited from parents.

Notch3: NOTCH3 is a member of a specific gene “family.” The NOTCH3 gene provides instructions for producing proteins located on the surface of muscle cells around arteries (vascular smooth muscle cells). The protein is specific to arteries, and is not present in veins. Disruption of Notch3 functioning can lead to the self-destruction of these cells (1), a process that is thought to cause the recurrent strokes and other symptoms typical of CADASIL.

Exon4: Exon 4 is a location within the human genome most frequently affected in CADASIL. Within human DNA (or RNA) an Exon is a piece of genetic material that contains coding information for making amino acids.

Firstly, it is important to recognise that genetic illnesses depend on the genetic background of the patient, not just on the gene involved. This is the reason for the variable degrees of severity of such illnesses. Other genes can often act as “back-up” – not quite as good as the “real thing” but better than a systems failure! The life-style of the person affected will also play a role, which serves to emphasise the importance of maintaining a healthy diet and lifestyle wherever possible.

CADASIL is a condition caused by a fault – a mutation – in the Notch3 protein found in cell membranes and, in particular, in the smooth muscle cells in blood vessel walls. These muscle cells give vessels their elasticity, an important aspect given that blood is continuously pumped through them. This is especially so in the brain, as leakages from blood vessels here can cause damage to the surrounding tissue; giving rise to the symptoms that may eventually lead to a CADASIL diagnosis.

The mutation that causes this fault is often found in the part of the gene (Exon4) thought to be ultimately involved with the correct folding of the relevant protein. Although the protein is not able to fold properly, it can still function, but with a lower efficiency, and so may not make its presence felt for some time. As mentioned previously, an individual’s genetic background may manage to “mask” this fault for a period of time (which, obviously, will vary from person to person). This can best be illustrated by the following model. (Please see next page)
Phil Jones, continued

Consider that the protein is a small cog in a machine. The cog has been made with a fault but there is so much tolerance in the machine as a whole that the machine can still function properly. The machine is carefully treated and it continues to work well. As the machine ages, however, a certain amount of wear and tear occur to its other parts so that it can no longer tolerate the faulty cog as well as it has done in the past...and a mis-function becomes apparent. This mis-function “repairs” itself over time (your recovery). Indeed, the cog can continue to be tolerated provided that the machine continues to be well tended (exercise/medical check-ups) and, now, additionally oiled (by medication).

The precise function of NOTCH3 seems to be not fully understood, but it is obviously important as it occurs even in the fruit fly, Drosophila. The important thing is to continue to do all the right things – bodily and mental exercise, and positive thinking.

(1) Self-destruction of cells is usually referred to as “apoptosis”.

November 2015
**CADASIL MEET-UPS**

Interested in meeting others in the global CADASIL Community? Let us know where you are in the world, and we will try to find others who are also interested in your area. You can start the process by emailing us with your location and the contact details you are comfortable sharing. (Your contact info will not be made public without your permission.) We will do our best to help make it happen!

Email us at: info@cadasilassociation.org or contact Janet Mills at: imills@cadasilassociation.org

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Left: Freddie Schilling and Janet Mills in Seattle, Washington, USA.

Right: Janet Mills with Rick and Michele Mock in Fresno, California, USA.

Right: Janet Mills and Colleen Shields in Brisbane, Queensland, Australia in October 2015.

Left: Andy and Janet Mills with the Shields family in Brisbane, Queensland, Australia in October 2015.

The late Jack Shields (not pictured) was one of the first CADASIL patient pioneers who was committed to helping his fellow patients. His descendants continue to raise awareness for CADASIL.
UPCOMING EVENTS

February 16, 2016 at 7pm:
Our second New Jersey Devils
NHL Hockey Fundraising Event
features the New Jersey Devils
vs. the Philadelphia Flyers

Every ticket purchased helps
cureCADASIL!

We need patients and/or family members to represent CADASIL on Capitol Hill Feb 29-Mar 3. Travel stipends are given to one person attending per state. Read more about this great opportunity for patients and families here: http://rareadvocates.org/rdw

Rare Disease Week on Capitol Hill: February 29 – March 3, 2016:
Mark your calendars and join us in Washington, DC in 2016 for Rare Disease Week on Capitol Hill. The week will kick off with Rare Disease Day at the National Institutes of Health (NIH) on February 29, 2016. This will be followed by a week-long series of events that aim to educate, motivate, and bring the voice of rare disease advocates to the halls of Congress. For a complete schedule of Rare Disease Week on Capitol Hill events, visit the event page shown above.

February 29, 2016: Rare Disease Day at Saint Peter's University Hospital in New Brunswick, New Jersey.

“Rare New Jersey” will also have an event on Rare Disease Day.
RNJ Facebook page: facebook.com/rarenewjersey

Want to do something in YOUR state or country for CADASIL on Rare Disease Day? Please share your events with us and we can highlight them in an upcoming issue of EMBRACE Newsletter!

USA info: rarediseaseday.us  Global info: rarediseaseday.org
MORE UPCOMING EVENTS

March 29-30, 2016: Alzheimer’s Disease-Related Dementias Summit 2016 at the Natcher Conference Center National Institutes of Health in Bethesda, Maryland.

For more info, go to: https://meetings.ninds.nih.gov/meetings/ADRelatedDementias2016

Description: Join leading neuroscientists, physicians, and public and private stakeholders to provide input on key challenges and special opportunities in research on Alzheimer’s disease-related dementias (ADRDs). This summit is convened under the National Plan to Address Alzheimer’s Disease to review progress on, refine, and add to ADRD 2013 research recommendations based on recent scientific discoveries in frontotemporal, Lewy body, mixed, and vascular dementias. Health disparities and collaborative engagements with non-government organizations will be discussed in the context of the National Plan and ADRDs. This summit is open to the scientific community and to the public.

May 7, 2016 (date tentative at this time):
2nd Annual Soaring Above the Storm 5K Run and 1 Mile Walk for CADASIL will be held at Johnson’s Park in New Brunswick, New Jersey.

Virtual runs and walks are a fun way to join us if you cannot be at the actual event!

Sign up now at: tinyurl.com/CADASIL5k

Check out the Soaring Above the Storm Facebook page for updated information as it becomes available:

facebook.com/Soaring-Above-the-Storm-5K-Run-1-Mile-Walk-for-Cadasil-682865465101761

Future date uncertain: The diagnosis for CADASIL is going to be included in the upcoming ICD-11 Code. Janice Ragazzo and Barbara Hunt have been working to see this happen.
PARTICIPATE

Opportunities for you to help cureCADASIL!

Tax-exempt donations are always appreciated and acknowledged by cureCADASIL Association. Some ways this organization has used and is planning to use funds raised and donated in the near future include:

Developing educational materials for patients, caregivers, and healthcare professionals that are accurate, comprehensive and current. We have a full-color tri-fold brochure printed and available for distribution. Other items are also available. Please request materials from: info@cadasilassociation.org

Sponsoring college graduate students for CADASIL research projects. During the summers of 2014 and 2015, cureCADASIL Association provided financial scholarships to assist Dr. Josep Arboleda in his laboratory at Schepens Institute at Harvard Medical School. (To date, only students in Dr. Joe’s program have applied. Please note that other researchers have been offered the same opportunity.) It takes $16,000-$20,000 to sponsor one undergraduate student for a year. cureCADASIL plans to sponsor another student in 2016.

Providing awareness materials to anyone interested in helping educate the public about CADASIL. We have banners to loan for events, business cards and denim ribbons to hand out, informational letters, and donation request letters available. Please contact us about any of these items.

A penny saved is a penny earned.
~ Benjamin Franklin
Please join cureCADASIL Association! The link again: www.cadasilassociation.org/join-us

Looking for ideas on how to help raise money for cureCADASIL toward our goals and mission? Here are some suggestions. We welcome yours, so please share them with us and we may publish them in an upcoming newsletter.

**Gifts:** Looking for the perfect gift for someone on your list? Making a donation to cureCADASIL in honor of someone touched by this disease is a loving gesture.

**Cans for CADASIL:** Does your state have deposits on containers? Have a “Cans for CADASIL” Drive! Ask your friends, family, schools, churches, social clubs, etc. to collect their cans and other recyclables and donate the money to cureCADASIL Association.

**Make Change for Charity:** Toss that spare change from your pocket or purse into a container. Once every few months, locate a coin machine at your local grocery or discount store and donate the cash you receive back to cureCADASIL Association. This would work well in a school setting as well.

**One Thing I can Do:** Your days are busy, and if you have CADASIL or care for someone with this condition, it may be difficult to fit everything in that you need to do. Instead of thinking of all the many ways you can help make a difference, pick *just one* and follow through on it. One person doing one thing can help toward awareness and ultimately funding toward a cure.

**Know someone who owns a business?** Make a call today and ask if the business could host an event to benefit cureCADASIL Association. Many businesses in our communities are willing to partner with a good cause. One example: An ice cream shop allowed a charity to display their sign next to a receipt fishbowl by the cash register for one day. Patrons “donated” their receipt. The charity was given 5% of total receipts for the day! Another example: A friend who sells products through home parties donated a percentage of sales at a party organized by a member of the charity. Make that call today!

**Garage sale:** Clean out those closets and pick a date for a garage or yard sale! Enlist friends and neighbors who may want to help, and have fun together while supporting cureCADASIL Association.

Donations are always appreciated at: www.cadasilassociation.org/donate
WEB LINKS

These website links may be new, recently discovered, or information we wish to share with the CADASIL community again. Please let us know if you find some!

Delayed Diagnosis of CADASIL in a Patient with Hemiplegic Migraine
http://jnnp.bmj.com/content/86/11/e4.172.short

Documentary on Huntington’s Disease: The Lion’s Mouth Opens
Marianna Palka was a guest speaker at Global Genes Patient Advocacy Summit and Gala in September 2015. Her documentary was aired at the event, and afterwards she and other guests talked to the audience. Attendee and cureCADASIL patient trustee Janet Mills found many similarities in Marianna’s story about the process of being diagnosed with a rare and serious genetic disease. It resonated with her as a CADASIL patient, and she recommends the documentary.

From the website: “In the acclaimed documentary THE LION'S MOUTH OPENS, two-time Academy Award® nominee Lucy Walker (HBO's Emmy®-winning “The Crash Reel”) follows courageous young filmmaker and actress Marianna Palka as she gathers her friends to find out if she has inherited Huntington’s from her father. Featuring interviews with Palka, her mother and her friends, including actors Jason Ritter and Bryce Dallas Howard, as well as home movies from her childhood, haunting videos of people suffering from the illness, and footage of the moments before, during, and after she gets the news, THE LION’S MOUTH OPENS chronicles one woman’s decision to face her demons and receive this potentially life-altering information.”
http://www.hbo.com/documentaries/the-lions-mouth-opens

L-R: Actors Bryce Dallas Howard, Jason Ritter, Melanie Lynskey, and Marianna Palka

The Impact of the Human Genome Project, 25 Years from its Launch
https://www.youtube.com/watch?v=D_xhkEtlBkQ

18 Things You Should Never Ever Say to a Person with Migraine
https://migraine.com/infographic/18-things-not-to-say
THANK YOU FOR READING OUR NEWSLETTER!

EMBRACE is created and edited by members of cureCADASIL ASSOCIATION

We welcome your submissions of personal stories, questions, news, events, doctor profiles (with permission from the doctor), suggestions for fundraisers, funny or touching creative work, and memorials. We would also love to hear from you with feedback about this newsletter and its contents.

Please email us at: info@cadasilassociation.org

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