DECEMBER 2025 EDITION

TO ALL CHOPS SYNDROME WARRIORS ACROSS THE GLOBE &

PARENTS, CARERS, SIBLINGS, RELATIVES, FRIENDS

In this newsletter we once again want to bring praise to all the

SIBLINGS

WHO IS MY BROTHER?

(Written by JOE, twin brother of Liam)

My brother, Liam, is a rock star, and his name aptly means "strong-willed warrior" or "resolute protector" and determination. He is also my twin brother, and despite being only 3.9 feet tall at 25, while I stand at 6 feet tall, I have immense admiration for him. His determination is inspiring, as he has fought every day to stay in this world - with a smile on his face.

He has defied the odds all these years, thanks in part to my mom's unwavering support. My brother has a remarkable ability to make people laugh and is quite the charmer with the ladies. He has taught me the value of patience, as I often wonder how he remains unflappable despite the challenges life has presented him. His optimism is remarkable, as he views each day as a gift.

Interestingly, despite his small stature, he has a voracious appetite and can eat more than me on any given day, often prompting my mom to jokingly say, "Kitchen closed, Liam!"

Last year, we thought we were going t lose him due to a severe flu, and he was airlifted to Philadelphia as he struggled to breathe. Even in that difficult moment, he gave us all the thumbs up as he boarded the helicopter. This is why I consider my brother my hero.

We often say that Liam's legacy will be helping other children diagnosed with CHOPS, he was the first boy diagnosed in the world dialed with 2 other girls, and I believe he will indeed make a positive impact on their lives. Perhaps one day, they'll find a cure for this rare syndrome.

I love my twin brother dearly, and he's my best friend. We'll navigate life's challenges together, and I've always said to him.

"He's not heavy, he's my brother," and I'll support him every step of the way.

Harry, 11 years old, writes -

Isla 14 years old - CHOPS …………………….

What's It like having a sister like Isla?

She isn't like a normal sibling, she can't walk so she can't annoy me in my room.

She steals my headphones and sometimes she breaks them.

We have got into the football for free because we took Isla in the wheelchair.

Sometime it annoys me when she puts her music on loud. It's really loud and sometimes annoying.

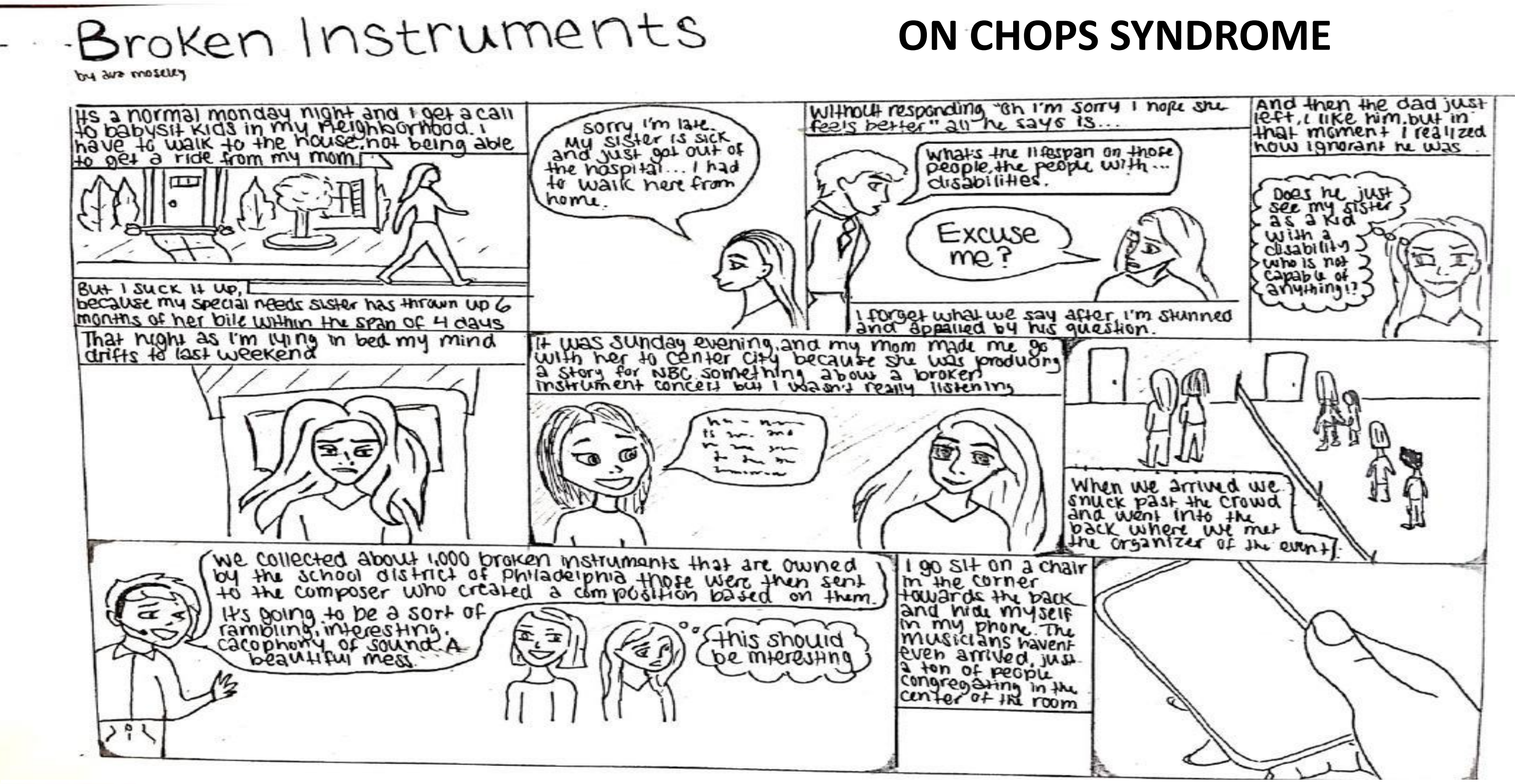
People stare at her in public and I get annoyed if it's older kids; they should know better.

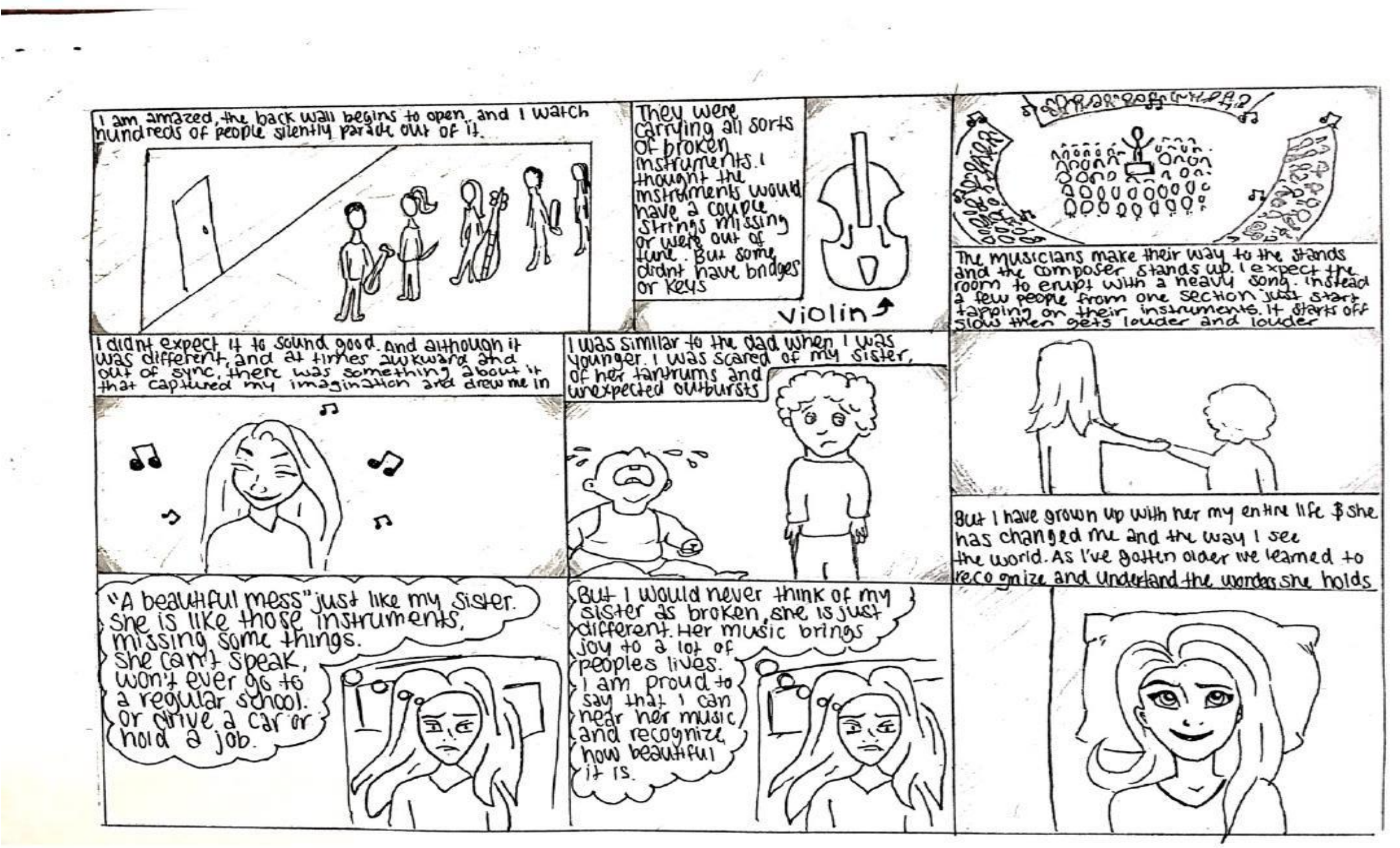
If it's younger kids they are probably looking because they have not seen a kid like Isla before.

She likes to play peek-a-boo and laughs really hard.

She likes to hang out in her bed like a teenager and play on the iPad.

LETA'S SISTER, AVA MOSELEY GAVE HER IMPRESSION ON CHOPS SYNDROME





ARTICLE FROM abc.net.au/news/

Only four people in Australia have been diagnosed with rare genetic disease CHOPS

Isla Steed, who lives in South Australia, is one of four people in the country to have CHOPS syndrome. *(ABC Eyre Peninsula: Duncan Bailey)*

In short:

Isla Steed is one of just four people in Australia and 35 people in the world to be diagnosed with the rare genetic disease CHOPS.CHOPS is an acronym for its signs and symptoms: cognitive impairment and coarse facial features; heart defects; obesity; pulmonary problems; and short stature and skeletal abnormalities.

What's next?

Due to CHOPS' rarity and the fact it was not discovered until 2015, advocates are trying to raise more awareness of the genetic disorder.

Isla Steed is your fairly typical teenager, according to her mum.
The 14-year-old is "a stubborn little person" who loves technology and food, Kylie Steed says.
And she has a favourite word — "no".
But what sets Isla apart from her peers is something she shares with just 34 other people in the world, and just three others in Australia.
Her condition is so extremely rare, when she was born, it had not even been discovered yet.

Kylie Steed says her daughter Isla is the happiest person she knows. *(ABC Eyre Peninsula: Duncan Bailey)*

It is known by its acronym CHOPS, which stands for its signs and symptoms: cognitive impairment and coarse facial features; heart defects; obesity; pulmonary problems; and short stature and skeletal abnormalities.
The condition was not identified by researchers until 2015.
It would take another four years for Isla to be diagnosed, at the age of eight, with the genetic disease.
Up until then, doctors had mistakenly diagnosed her with Cornelia de Lange syndrome, another genetic condition with similar features.
This is a common scenario for children who are later diagnosed with CHOPS, according to advocates for people with the disease.
"When Isla was born, she was quite unhealthy," Isla's mum said.
"She weighed 1,500 grams [1.5 kilograms] and spent the first 147 days in the Women's and Children's [Hospital in Adelaide].

Isla required a feeding tube and, at one point, had to be resuscitated through CPR.

"There was no way we would have been able to live here [Port Lincoln] and keep her alive," Ms Steed said.

Isla Steed was not diagnosed with CHOPS syndrome until she was eight years old. *(Supplied: Kylie Steed)*

The family had to temporarily relocate to Adelaide during the early years of Isla's life. But eventually, when Isla was 11 years old, she was deemed well enough for the Steed family to return home to Port Lincoln on South Australia's Eyre Peninsula.

Despite their regional city being under pressure from the same resources and staffing shortfalls as the public health sector throughout regional and rural Australia, Isla has access to a "full repertoire" of support services in Port Lincoln, Ms Steed said.
While she still needs frequent check-ups, her condition is also far more stable now than when she was a child, her mum added.

Connecting through CHOPS

While Isla's disease is rare, she's not alone.
Advocates across the globe have spent years trying to bring CHOPS syndrome into the spotlight and fundraise for research projects.

In Palermo, Italy, astrophysicist Manuela Mallamaci described her son Mario's diagnosis as "a nightmare" in 2023.
"But me and my husband said, 'OK, we need to do something, we cannot cry all the time,'" Ms Mallamaci said.

Manuela Mallamaci felt inspired to advocate for CHOPS syndrome after her son Mario's diagnosis in 2023. *(Supplied: Manuela Mallamaci)*

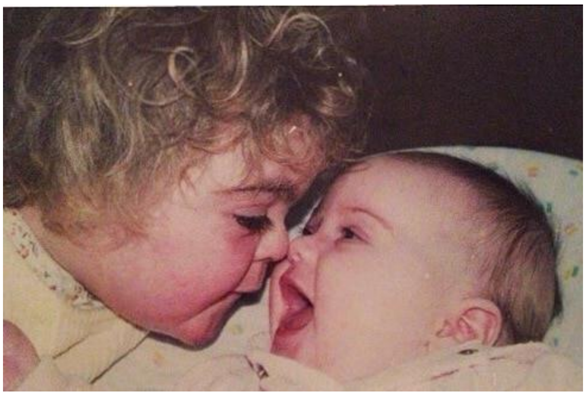
Unbeknown to her, across the ditch in the USA, there was a growing network of CHOPS families.
Lainey Moseley, a journalist in Philadelphia, founded CHOPS Syndrome Global after her daughter Leta became the first in the world to be diagnosed with the disease in 2015.
After the two mothers connected online, Ms Mallamaci realised she could use her research background to try to find scientific answers.
She created Fondazione CHOPS, and began working alongside Ms Moseley's foundation to fundraise for research projects and connect CHOPS families across the world.

Manuela Mallamaci says it is important to know other families affected by rare diseases. *(Supplied: Manuela Mallamaci)*

"It was our starting point, meeting doctors and experts all over the world about this syndrome," Ms Mallamaci said.
"We are just a few people, but it is important to know other families."

Being a 'rare disease parent'

Lainey Moseley's daughter Leta, now 28 years old, was the first in the world to receive the CHOPS syndrome diagnosis.



But that didn't come until 18 years after her birth.

The intervening years were "incredibly isolating", Ms Moseley said, via Zoom from Philadelphia.

Leta Moseley (left) was the first person in the world to be diagnosed with CHOPS syndrome. *(Supplied: Lainey Moseley)*

"But we're not unique, this is the story for thousands and thousands of families [with rare diseases] who are isolated and feeling like they're all alone and forgotten."

Ms Moseley felt she could not sit still after Leta was diagnosed, and spearheaded a campaign to bring CHOPS syndrome into the spotlight for the first time.

It led to the creation of CHOPS Syndrome Global in 2019.

"Because she was the first diagnosed in the world, I didn't really have a choice," Ms Moseley said.

It wasn't until Leta Moseley was 18 years old that she was diagnosed with CHOPS syndrome. *(Supplied: Lainey Moseley)*

"That's what you do as a rare disease parent when you get a diagnosis and you don't have a community.
"You don't have information about what the gene mutation is, and you can't even call doctors or scientists because they don't know either."

Change in instruction gene

Before CHOPS had a name, Kosuke Izumi was studying a genetic anomaly alongside his former mentor, physician Ian Krantz, in the US.
The research was centred on better understanding Cornelia de Lange syndrome and involved studying hundreds of children.

Of that large number, Dr Izumi recalled three children standing out — and one of them was Leta Moseley.

Kosuke Izumi is one of the leading researchers into CHOPS syndrome. *(Supplied: Kosuke Izumi)*

"We found three children with fairly similar medical problems but we thought they were a bit different with children from Cornelia de Lange syndrome," Dr Izumi said.

"This was around 2012 and we started thinking about whether these children may have a new genetic disorder."

Around that time, a breakthrough in genetic testing called exome sequencing became available.

Dr Izumi said this allowed them to "spellcheck" genetic information in a comprehensive way.

Lainey Moseley believes a treatment for CHOPS syndrome will be found in her lifetime. *(Supplied: Lainey Moseley)*

"To test our hypothesis, which is that these children have a new genetic diagnosis, we used this new approach," he said.

"We identified a change in a gene called AFF4 and named it CHOPS syndrome as an acronym for their medical problem.

"Because this gene plays an important role in directing what kind of function the cell needs to do, as a consequence of dysfunction, children with CHOPS syndrome have many medical problems."

Need for more awareness

Despite the odds against her, Isla's disease has not stopped her from loving people and loving life.

"She's one of the happiest people I know," Ms Steed said.

Today, Isla is able to access most therapeutic services in Port Lincoln, but initially, a lack of awareness about the disease among the health sector made that challenging.

Isla Steed lives in Port Lincoln with her mum Kylie, her dad Matt and her brother, Harry. *(ABC Eyre Peninsula: Duncan Bailey)*

"Therapy services have been tricky to find, we've been on lots of waitlists and finally have a full repertoire of speech [pathologists], occupational therapists and physios [physiotherapists]," Ms Steed said.

"But no-one really knows much about it, so it can be really tricky.

"In terms of having a kid with a disability it can be super complex; your entire life is different to everybody else's and a lot of people don't understand what you go through."

While Isla faces unique challenges in life, Kylie Steed says she loves people and life. *(ABC Eyre Peninsula: Duncan Bailey)*

Ms Mallamaci and Ms Moseley have not lost hope a treatment can one day be found for CHOPS.

"In my lifetime, we will have a treatment for CHOPS syndrome," Ms Moseley said.

"Whether it's a repurposed drug or gene therapy … we will have something to offer families and children who are born with CHOPS syndrome — an immediate treatment option for their child because that's what they deserve."

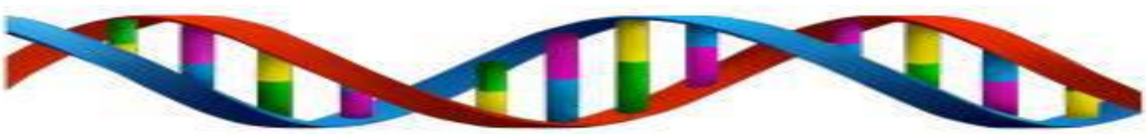
Dr Izumi said he too was hopeful.

"We are using a specialised cell called induced pluripotent stem cell, which can be generated from patient cells," he said.

"That can be differentiated into brain cells or muscle cells which the patient has symptoms on.

"We're trying to find a way to fix this abnormality, and have been using animal models to study what kind of drug could be useful.

"I may be too optimistic but there should be a way to do something."



CHOPS Rare Diseases Foundation announces scientific collaboration with Rare Disease Translational Center at Jackson Lab

News Provided By
[Fondazione CHOPS Malattie Rare Ente del Terzo Settore]
December 04, 2025, 00:24 GMT
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The Jackson Laboratory's Bar Harbor campus, home to the Rare Disease Translational Center (RDTC).

A new project is launched to develop targeted therapies for CHOPS syndrome and AFF4 gene mutations through Antisense Oligonucleotide (ASO) technology.

This collaboration represents a decisive step toward targeted therapies for CHOPS syndrome and strengthens our global effort to accelerate research for this ultra-rare condition."
— *Manuela Mallamaci, Founder and President, CHOPS Foundation*
PALERMO AND BAR HARBOR, MAINE, ITALY - US, ITALY, December 3, 2025 /EINPresswire.com/ -- The Fondazione CHOPS Malattie Rare ETS (CHOPS Rare Diseases Foundation), the only organization in the world dedicated exclusively to CHOPS syndrome, is proud to announce the launch of a scientific collaboration with the Rare Disease Translational Center (RDTC) at The Jackson Laboratory (JAX), one of the world's leading institutions in genetics and translational medicine.

The partnership focuses on the design and in vitro testing of ASOs, an advanced technology based on synthetic molecules designed to modulate or correct AFF4 gene expression. Mutations in AFF4 are responsible for CHOPS syndrome, a severe neurodevelopmental and multi-organ disorder with fewer than 40 cases diagnosed worldwide.
CHOPS syndrome takes its name from the acronym describing its major clinical features: Cognitive impairment and Coarse facies, Heart defects, Obesity, Pulmonary involvement, Short stature and Skeletal dysplasia.

The AFF4 gene plays a vital regulatory role in gene expression, acting as a molecular "timer" that determines when key developmental genes are switched on. In CHOPS, this mechanism becomes dysregulated, triggering widespread effects on growth, development, and organ function.
The project will be carried out at the RDTC at JAX in Bar Harbor, Maine, USA with financial support from the CHOPS Foundation.
ASOs represent one of the most promising technologies in genetic medicine: short synthetic DNA sequences capable of "switching off," correcting, or modulating faulty genetic messages. The aim is to intervene directly at the biological root of the disease, paving the way for personalized and potentially transformative treatments.

"Our strategy is to activate multiple lines of high-level research in parallel, accelerating the path toward a targeted therapy for CHOPS syndrome," says Manuela Mallamaci, Founder and President of the CHOPS Rare Diseases Foundation ETS and researcher at the University of Palermo, Italy. "This collaboration with the RDTC represents the third line of research we are launching: after basic research, essential for understanding the molecular mechanisms of the disease, and after our drug repurposing program, which aims to identify existing medications with potential therapeutic benefit for CHOPS, this ASO project marks another decisive step toward highly innovative, targeted therapeutic approaches. Partnering with the RDTC allows us to combine the strength of our global network with the expertise of a scientific institution of outstanding international standing."

Jennifer SanMiguel, lead scientist at the RDTC, comments, "We are thrilled to join forces with the CHOPS Foundation on this groundbreaking initiative. Starting at the cellular level enables us to identify ASOs that demonstrate strong target engagement, a critical first step before advancing to studies that assess safety and efficacy. This work forms part of a broader, multi-pronged approach led by the CHOPS Rare Diseases Foundation to explore diverse therapeutic strategies for CHOPS syndrome. Our contribution focuses on building a solid foundation for future possibilities with the shared goal of moving science forward for this ultra-rare condition."

"Developing an ASO therapy for CHOPS exemplifies our commitment to accelerate precision medicine for rare genetic disorders. This collaboration reflects the RDTC's core goals: to transform cutting-edge research into tangible therapeutic solutions, foster strategic partnerships, and deliver hope to patients and families affected by conditions with no current treatment options," says Konstantinos Vanezis, scientific investigator at the RDTC.
"Working closely with CHOPS strengthens our ability to translate scientific innovation into meaningful impact for the rare disease community."

This collaboration adds to the projects already underway with UT Southwestern Medical Center and Baylor College of Medicine (Texas), University of Essen (Germany), Children's Hospital of Philadelphia (Pennsylvania), Unravel Bioscience (Massachusetts).
To date, the CHOPS Foundation has funded six international research projects, investing over $400,000 and establishing the first patient-specific biobank dedicated to CHOPS syndrome.

The CHOPS Foundation was established in 2023 following the personal experience of Manuela Mallamaci and Giovanni Zampella, parents of Mario, now 4 years old, one of the very few children in Italy diagnosed with CHOPS.
"Our battle is both scientific and deeply human, combining science, ethics, and long-term

vision," Manuela adds. "Research on ultra-rare diseases is not only of vital importance for my son's life, it is a driver of innovation for global health: what we discover in CHOPS can illuminate therapeutic pathways relevant to many other conditions. Every new partnership brings us closer to a cure and strengthens a commitment that affects us all".

Manuela Mallamaci
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UNDERSTANDING AFF 4 ULTRA RARE GENE ANOMALY, CHOPS SYNDROME

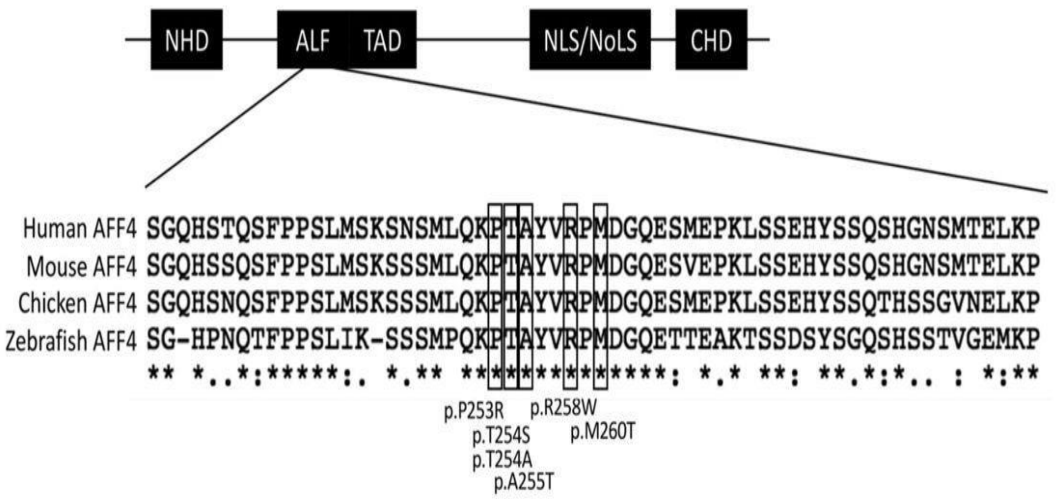

FIGURE 5 Locations of *AFF4* mutations identified in individuals with CHOPS syndrome. All of the missense mutations were de novo, and mapped to the evolutionally highly conserved ALF homology domain of *AFF4*. NHD, N-terminal homology domain; TAD, transactivation domain; NLS, nuclear localization signal; NoLS, nucleolar localization signal; CHD, C-terminal homology domain. Human AFF4 protein sequence is NP_055238.1, mouse AFF4 protein sequence is NP_291043.1, chicken AFF4 protein sequence is XP_015149549.1, and zebrafish AFF4 sequence is XP_005173956.1

SIMPOSIUM PLANNED FOR
29 JUNE – 1 JULY 2026
@
UNIVERSITY of MILAN ITALY

RESEARCH PROJECTS ARE EXPANDING
A cure for CHOPS SYNDROME is possible!

We still need much more funds to enable further research to make it happen.


All donations go directly to the CHOPS Foundation and help us continue our mission.

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Una tantum	Mensile	Annuale

Donation amount * EUR €

10,00 €

25,00 €

50,00 €

100,00 €

250,00 €

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