The Solve CHRONICLE

SUMMER 2024

Solve Leadership Honors Top Immunologist and Presents Solve Together Real-World Data Platform

Solve President and CEO Emily Taylor, Chief Scientific Officer H. Timothy Hsiao, and Director of Advancement Ilise Friedman recently visited Yale School of Medicine's Center for Infection and Immunity (CII) in New Haven, CT. They met with the Center Director, Sterling Professor Akiko Iwasaki, and her research team, as coordinated by Dr. Nicole Darricarrère, CII's Scientific Program Director.

Tim Hsiao, Ilise Friedman, Dr. Akiko Iwasaki and Emily Taylor

The Solve delegation honored Professor Iwasaki with an award to recognize her contributions to the study of infection-associated chronic conditions and illnesses, and delivered an invited talk to the Iwasaki Lab to elaborate the power of the Solve Together Real-World Platform to accelerate biomedical research for post-acute infection syndromes, such as ME/CFS and Long Covid. Watch a video of the presentation here.

Following the formal presentation, the Solve delegation was treated with an informative tour of the Iwasaki Lab. Through interactive dialogues, the Iwasaki Lab and Solve discussed opportunities for collaborative research in the future, especially on improving precision subtyping and harnessing wearable technologies to better include into research people who suffer the most severe forms of ME/CFS or Long Covid.

"Prof. Iwasaki is among the most brilliant and compassionate minds in science of our time. Based on the positive feedback we received from Prof. Iwasaki and her team, we are excited for the prospect of synergizing with the Iwasaki Lab's research excellence through our Solve Together Real-World Data platform to collaboratively enable more comparative studies across conditions and advance precision medicine," said H. Timothy Hsiao, a Yale alum himself.

Dr. Iwasaki was recently named one of the 100 Most Influential People of 2024 by TIME magazine, and is the president of the American Association of Immunologists.

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INSIDE

Swinging for the Fences: Solve M.E.'s Appropriations Efforts for 2024

At Solve M.E., our mission is to drive research and advocacy efforts for ME/CFS, Long Covid, and other infection-associated chronic conditions and illnesses (IACCIs). This year, we have championed three critical appropriations requests to Congress, aiming to secure funding and resources to advance our cause.

Inclusion of ME/CFS in the Peer Reviewed Medical Research Program (PRMRP)

Our first appropriations effort focuses on ensuring the continued inclusion of ME/CFS in the list of Congressionally Directed Topic Areas within the Peer Reviewed Medical Research Program (PRMRP). This program is vital for funding research that addresses the health challenges faced by our military personnel and veterans. While we make this ask every year, it is particularly crucial due to the current political climate as programs which do not have advocates asking for their continuation are getting dropped from the budget.

Funds included in this account are shared with many medical research programs at the discretion of the Department and support research across the full range of science and medicine, with an underlying goal of enhancing the health, care, and well-being of military Service Members, Veterans, retirees, and their family members.

One example of this program's success is the recent funding of $13.1 million for BioVie's research project. Data from their other work with Bezisterim suggests it may be restoring homeostasis via specific genes associated with metabolism and inflammation. Learn more here.

Establishing an Office of Infection-Associated Chronic Conditions and Illnesses (IACCIs) at NIH

Our second request is for $10 million in additional resources to establish an Office of Infection-Associated Chronic Conditions and Illnesses (IACCIs) at the National Institutes of Health (NIH). The $10 million would be for the establishment of the office, which is separate from research funds. This request is happening in tandem with our advocacy week conversations and is one piece of our broader push for legislation and research funding.

The establishment of an Office for IACCIs will enhance the efficiency of research efforts, ensuring that resources are used effectively and that patient and stakeholder engagement is prioritized.

Expanding CDC's Multidisciplinary ME/CFS Programs

Our third request is for $10 million to support and expand the Centers for Disease Control and Prevention's (CDC) work on ME/CFS. The CDC has been a wonderful partner to the ME/CFS community and are dedicated to finding ways to support us. Funding will support ongoing clinical assessments and expand the CDC's ECHO-style education programs, particularly benefiting rural and underserved communities. For reference, the LC&FIRP ECHO Program has been a shining example of what can happen when you bring together medical providers, patients, caregivers, and specialists in the field to find pathways together.

We look forward to reviewing the final versions of these letters as they are circulated among members of Congress and to our continued collaboration with congressional allies who are championing our asks. Our appropriations efforts this year are crucial steps toward advancing research, improving patient care, and reducing the economic burden of ME/CFS and related infection associated chronic conditions and illnesses. We are grateful for the support of our congressional champions and look forward to working together to secure these vital resources. Your continued advocacy and support are essential as we strive to improve the lives of millions affected by these debilitating conditions.

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Solve Leadership Honors Top Immunologist (cont'd)

Solve has previously supported Dr. Iwasaki's collaborators, including Dr. David Putrino's ongoing clinical study (recording of the Solve hosted webinar can be found here), and a Ramsay Research Grant to Aaron Ring, MD, PhD, for the project "Discovery of pathological autoantibodies in ME/CFS and post-acute sequelae of SARS-CoV-2 infection."

The Solve Together Real-World Data platform is the largest of its kind for ME/CFS and Long Covid in the U.S. Anyone above the age of 18 residing in the United States can create an account to join. Learn more and join at: https://solvecfs.org/research/solve-together/.

ADVOCACY

Advocacy Week 2024: Leveraging Our Collective Power by Working Together

Advocacy Week is Solve's annual nationwide advocacy effort to connect people with ME/CFS, Long Covid, POTS and other dysautonomias, Chronic Lyme, and other infection-associated chronic conditions and illnesses (IACCIs) to share their unique stories with Congress. The ultimate goal of Advocacy Week is to make ME/CFS, Long Covid, and infection-associated chronic conditions and illnesses (IACCIs) widely understood, diagnosable, and treatable.

This year, 330 advocates from 44 states took 250 meetings with legislators to educate them on the emerging science and community efforts under the umbrella of IACCIs, and help Congress understand the need to establish a coordinating mechanism at the National Institutes of Health (NIH) to address IACCIs.

This coordinating mechanism would convene researchers across specialities, streamline resources, facilitate/require patient engagement, and improve external outreach with a plan to foster collaborative research, including those through clinical trials and sites and EHR (electronic health records) study cohorts. This new coordinating mechanism would be critical to avoid potentially redundant research and ensure related research is cross-pollinating among different centers at the NIH.

As a point of reference, Solve has co-authored a new white paper, "A Home for Infection-Associated Chronic Conditions and Illnesses (IACCIs) at NIH." The co-authors recommend possible policy solutions to this problem, which include the establishment of a dedicated IACCI research entity at NIH.

The hope is that the entity proposed in the white paper would have funding authority and the power to orchestrate NIH-wide research and trials. Solve CEO Emly Taylor told STAT News, "It's unclear what shape or form that final entity will take…I truly believe that if we spent five years at $1 billion a year, we would have treatments for this community."

Reflecting the collaborative nature of our congressional ask, our Advocacy Week 2024 partners in this effort are: #MEAction, Black Covid Survivors Alliance, Center for Lyme Action, Covid-19 Longhauler Advocacy, Project, Pandemic Patients, and Patient-Led Research Collaborative.

While Advocacy Week has concluded, you can still help us #StopTheLongHaul by engaging your elected representatives and online community. Click here to use our Social Media and Virtual Advocacy Action Kits.

"This year we are joining together with many partners because it's critical that we educate Congress about the broader connections between infection-associated chronic conditions and illnesses. Together, we can show Congress there are millions of us suffering the same symptoms, the same underfunding, and the same disbelief. NIH must seek to help all of us equitably."

–Emily Taylor, Solve M.E. President & CEO

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Advocacy Week 2024: Leveraging Our Collective Power by Working Together (cont'd)

EmPOWER M.E.: How to Build and Work with Your Care Team

Advocacy Week concluded with our keystone EmPOWER M.E. event, featuring panels of patient advocates and professionals sharing their expertise on building and working with a care team.

Susannah Fox, author of *Rebel Health: A Field Guide to the Patient-Led Revolution in Medical Care* (MIT Press, 2024), was the keynote speaker. In *Rebel Health*, Fox draws on twenty years of tracking the expert networks of patients, survivors, and caregivers who have come of age between the cracks of the health care system to offer a way forward. Fox was joined by panelists Dale Bolger (clinical social worker/therapist, MSW, ASW, LLMSW), Ashanti Daniel (registered nurse and chronic illness advocate), occupational therapist Amy Mooney, behavioral health specialist Sanna Stella, and Solve M.E. President & CEO Emily Taylor.

A patient advocate who attended the event told us, "Thank you for recognizing and verbalizing professionally how invisible and insignificant some of us feel, and what many of our experiences/situations are."

Watch the recording of **EmPOWER M.E.: How to Build and Work with Your Care Team** here.

Solve Publishes White Paper Calling for NIH to Restructure Funding for ME/CFS, Long Covid, and other IACCIs

Complementing our Advocacy Week 2024 efforts, Solve co-authored a white paper, "A Home for Infection-Associated Chronic Conditions and Illnesses (IACCIs) at NIH." Co-written by Solve President and CEO Emily Taylor, accomplished journalist and filmmaker Ryan Prior, and science and policy researcher Melissa Smallwood, the white paper outlines the economic burden caused by IACCIs and the lack of appropriate NIH funding to meet the needs of those who suffer. The co-authors recommend possible policy solutions to this problem, which includes the establishment of a dedicated IACCI research entity at NIH.

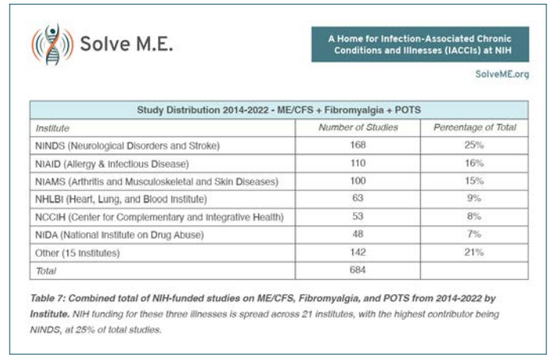
Advocacy Week 2024 participants shared the white paper when meeting with legislators to educate them on the emerging science and community efforts under the umbrella of IACCIs and how a dedicated NIH funding mechanism could make a difference.

IACCIs are a growing, but under-researched, health and economic burden. These illnesses – such as ME/CFS, Long COVID/PASC, POTS/Dysautonomia, fibromyalgia, persistent Lyme disease, MCAS, and more – severely impact patients' quality of life and ability to work and can often cause a lifetime of disability. Following COVID, major IACCIs are now estimated to impact up to 73.3 million Americans. Research into IACCIs is severely underfunded relative to disease burden, and is decades behind illnesses with similar levels of severity due to their nature as complex, multi-systemic illnesses that aren't clearly within the domain of any existing medical specialty.

About the Publication

Our white paper analyzes the distribution of NIH-funded IACCI research over the past 10 years. We found that major IACCIs – in total – receive an average of $5.230 million in NIH research per year, with ME/CFS and Fibromygalgia being the only IACCIs having any record of NIH funding prior to 2020. This research funding is spread across 21 different NIH institutes with little to no central coordination.

Both patients and experts – including at the National Academies and the Federation of American Scientists – have called for more funding and multidisciplinary collaboration for IACCI research, due to extremely high rates of comorbidity between these illnesses and increasing evidence of shared biological underpinnings. The COVID-19 pandemic has further increased the urgency of IACCI research, due to Long COVID affecting up to 56 million Americans (17% of the population) with no established treatments, therapeutics, or research plan off-ramps.


Solve M.E.

A Home for Infection-Associated Chronic Conditions and Illnesses (IACCIs) at NIH

SolveME.org

Study Distribution 2014-2022 - ME/CFS + Fibromyalgia + POTS		
Institute	*Number of Studies*	*Percentage of Total*
NINDS (Neurological Disorders and Stroke)	168	25%
NIAID (Allergy & Infectious Disease)	110	16%
NIAMS (Arthritis and Musculoskeletal and Skin Diseases)	100	15%
NHLBI (Heart, Lung, and Blood Institute)	63	9%
NCCIH (Center for Complementary and Integrative Health)	53	8%
NIDA (National Institute on Drug Abuse)	48	7%
Other (15 Institutes)	142	21%
Total	684	

Table 7: Combined total of NIH-funded studies on ME/CFS, Fibromyalgia, and POTS from 2014-2022 by Institute. *NIH funding for these three illnesses is spread across 21 institutes, with the highest contributor being NINDS, at 25% of total studies.*

Policy Solutions

Our primary call for the 2024 Solve Advocacy Week is to request congressional members' support for the establishment of a dedicated IACCI research entity at NIH. This entity needs to have 1) the authority to direct research funding and 2) the ability to coordinate multi-disciplinary research and bring in expertise from different parts of NIH. Additional responsibilities include

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Solve Publishes White Paper Calling for NIH to Restructure Funding for ME/CFS, Long Covid, and other IACCIs

patient engagement and the establishment of clinical trials. We have identified two different forms that this entity could take, depending on the level of funding and commitment provided by Congress and NIH leadership.

An easier, but less substantial solution is the establishment of a special IACCI program under the Office of the Director, which would serve as a hub to coordinate and direct multi-disciplinary research on IACCIs across NIH. Funding for this program could be provided through the Common Fund, or from a smaller budgetary commitment from Congress. While legislatively a straightforward solution, it would only be temporary and would require future commitments and expansion to actually fulfill its mission.

Solve M.E.

A Home for Infection-Associated Chronic Conditions and Illnesses (IACCIs) at NIH

SolveME.org

Illness	Average NIH funding per year 2014-2024
ME/CFS	$12 million
Fibromyalgia	$13 million
Post Treatment Lyme Disease	$3.2 million (2023)[1], $1 million (pre-2023)
POTS	$3.4 million
Ehlers-Danlos Syndrome	$0
MCAS	$0
Ehlers-Danlos Syndrome (EDS)	66,000
Gulf War Illness	250,000
Total Major IACCI Estimated Cases	*Between 36,316,000 and 73,316,000*

Table 2: Average NIH funding of IACCIs from 2014-2024. *These figures are taken from the NIH RePORT[2], which provides information on the amount of funding given by disease category, as well as a list of studies receiving this funding. Of the eight IACCIs searched for in RePORT, only four (ME/CFS, Fibromyalgia, Lyme Disease, and POTS) had received some amount of NIH funding. EDS and MCAS had no record of NIH funding. Excluded from this analysis were Long COVID and Gulf War Illness, due to these conditions having government research programs outside of the scope of the RePORT.*

[1] U.S. Department of Health and Human Services. (2023b, July 21). NIH Awards will fund Post-Treatment Lyme Disease Syndrome Research. National Institutes of Health. https://www.nih.gov/news-events/news-releases/nih-awards-will-fund-post-treatment-lyme-disease-syndrome-research

[2] U.S. Department of Health and Human Services. (2023, March 31). Estimates of Funding for Various Research, Condition, and Disease Categories (RCDC). National Institutes of Health. https://report.nih.gov/funding/categorical-spending#/

A second solution would go much further in tackling the problems posed by IACCIs is the establishment of a full office for IACCI research. This would require cooperation and budget commitment from Congress, and would advance research into priority areas – such as diagnostics, therapeutics, and clinical trials. Such an entity would also provide a permanent home for research infrastructure developed by the RECOVER Initiative, reducing potential waste and duplication of projects and incentivizing more upcoming researchers and clinicians to specialize in a field that currently has very few dedicated specialists.

We strongly believe that an Office of IACCI Research should be established to accelerate multidisciplinary research into IACCIs. We hope that members of Congress will recognize the importance and urgency of establishing this entity, and lend their support to making this office a reality.

Read our white paper in its entirety here.

Other Solve Policy Publications

In February, the IACCPAC Initiative, led by Solve M.E., The Long Covid Alliance, COVID-19 Longhauler Advocacy Project, Dysautonomia International, and Patient-Led Research Collaborative, with support from the CDC Foundation through the Infection Initiated Chronic Conditions Understanding and Engagement (ICUE) program published their summary report, "Infection-Associated Chronic Conditions: Opportunities for Action." You can read that report here.

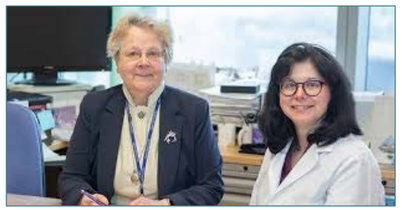
In 2022, Solve co-authored one of the first white papers on the devastating impact of Long Covid. That report, "Long Covid Impact on Adult Americans: Early Indicators Estimating Prevalence and Cost," was cited by major media outlets and referenced by leading economic experts when publicly addressing the prevalence of Long Covid.

In 2020, Solve published the first major policy paper connecting ME/CFS and Long Covid with Dr. Mady Hornig of Columbia University Mailman School of Public Health. "What does COVID-19 portend for ME/CFS?" laid the groundwork for securing over $1 billion for Long Covid research at NIH.

Solve-Funded Research Indicates Potential Biomarker, Treatments for ME/CFS and Long Covid

RAMSAY RESEARCH GRANT PROGRAM

"Identification of CD8 T-cell dysfunction associated with symptoms in myalgic encephalomyelitis/chronic fatigue syndrome (ME/CFS) and Long COVID and treatment with a nebulized antioxidant/anti-pathogen agent in a retrospective case series"



We launched our Ramsay Research Grant program in 2016 with three main objectives:

- Provide seed funding for innovative projects that will generate data to facilitate applications for larger grants.
- Attract researchers to the field of ME/CFS and Long Covid and ensure they stay engaged.
- Add to the cumulative scientific knowledge that informs ME/CFS and Long Covid diagnosis and treatment.

In the years since, we've funded 37 research projects, and our network has grown to nearly 100 scientists across the world. Half of the principal investigators on these projects applied their expertise to study ME/CFS for the first time, and 17 of the projects involved early-career stage researchers.

Multiple Ramsay Research Grant winners have gone on to secure significant follow-on funding for their Ramsay pilot projects. Dr. Jarred Younger (Ramsay Class of 2016) leveraged Solve seed funding to secure an additional $2.9 million from the National Institutes of Health (NIH) to complete a brain imaging study of the inflammatory processes at work in the brains of people with ME/CFS. Drs. Liisa Selin and Anna Gil (Ramsay Class of 2019) received a $2.5 million grant from the NIH to study the role of aberrant T cell responses in the immunopathogenesis of ME/CFS patients.

We're proud of our role in launching and sustaining the careers of many renowned ME/CFS and Long Covid researchers, and we're pleased to share the news of their ongoing research advancements.

Solve Ramsay Research Grant winners (Class of 2019) and UMass Chan Medical School viral immunologists **Liisa Selin, MD, PhD, and Anna Gil, PhD,** recently published promising results from a Solve-funded study in *Brain, Behavior & Immunity Health*. The paper reported two key findings that bear the potential to advance diagnostics and treatments for ME/CFS and Long Covid.

First, the authors observed evidence that CD8 T-cell dysfunction can be a useful biomarker for both diagnosis and health outcome tracking for future treatments or clinical trials.

Second, the authors found that an experimental drug, Inspiritol, which is a treatment that boosts and adjusts the immune system, and fights off pathogens (like bacteria and viruses), appeared to improve health and immune responses for a small group of patients. Further research with larger subject cohorts will be required to validate the predictive power of CD8 T-Cell dysfunction as a biomarker and the effectiveness of Inspiritol as a potential intervention for ME/CFS and Long Covid patients.

Drs. Selin and Gil are two of many Solve researchers who, after their initial pilot studies, have successfully secured substantial follow-on funding to continue significant advancements in the field.

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Solve-Funded Research Indicates Potential Biomarker, Treatments for ME/CFS and Long Covid

In 2021, Selin and Gil were awarded a $2.5 million R01 grant from the National Institutes of Health (NIH) to build upon work on their Solve-funded study, and in 2022 they were one of six Solve Ramsay Grant research teams to receive nearly $5 million in biomedical research awards for Long Covid and associated conditions–including ME/CFS.

> We are personally aware of the devastation that ME/CFS causes and the challenge of surviving each day with this disease. We greatly appreciate Solve supporting us to continue our research."
>
> – **Liisa Selin and Anna Gil** (Ramsay Class of 2019)

"In vitro B cell experiments explore the role of CD24, CD38, and energy metabolism in ME/CFS"

With funding support from Solve, **Jo Cambridge, PhD (Ramsay Class of 2016),** and her team devised an innovative way to compare B cells (a type of regulatory cell in the immune system) from ME/CFS patients with B cells from healthy individuals. Asking how these cells would respond to a simulated attack on the immune system, the team discovered that B cells from patients made much more of two key proteins—CD24 and CD38. This is important because B cells that make too much of these proteins may process energy less efficiently and be less likely to survive an attack. The researchers not only showed this was the case, but also showed that mitochondrial mass in patients' cells was significantly less than it was in healthy cells. These findings break fresh ground in our ongoing work to understand ME/CFS and may inspire new treatments, for example, those boosting energy processing and survival of B cells.

"Muscle abnormalities worsen after post-exertional malaise in Long Covid"

Ramsay Research Grant winner **Rob C. I. Wüst, PhD** (Ramsay Class of 2022), published results from a Solve-funded study on post-exertional malaise (PEM) in Nature Communications. In "Muscle abnormalities worsen after post-exertional malaise in Long Covid," Wüst and his co-authors found that people with Long Covid experience abnormalities in muscle structure. Specifically, researchers observed that in Long Covid, patients' skeletal muscle shows signs of severe myopathy (muscle disease) and amyloid deposits (protein accumulations) that worsen after exercise. By revealing new insights into how Long Covid affects the body at a muscular and metabolic level, these findings pave the way for targeted treatment research for Long Covid and similar post-infectious conditions.

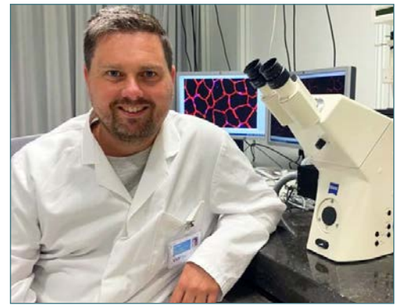
"Augmentation of Anaerobic Pentose Phosphate Pathway Dysregulates Tetrahydrobiopterin Metabolism in Myalgic Encephalomyelitis/ Chronic Fatigue Syndrome (ME/CFS) Patients with Orthostatic Intolerance: A Pilot Study"

A recent pre-print in Research Square co-authored by **Avik Roy, PhD (Ramsay Class of 2022),** explores how a specific metabolic pathway, the Anaerobic Pentose Phosphate Pathway (PPP), is altered in patients with ME/CFS who also suffer from Orthostatic Intolerance (OI). The researchers observed that the PPP pathway's activation disrupts the metabolism of Tetrahydrobiopterin (BH4), a molecule crucial for amino acid metabolism. In these patients, the PPP pathway is overactive, leading to an imbalance in BH4 and its related metabolites. This imbalance could play a role in the symptoms experienced by ME/CFS patients, such as fatigue and pain, by affecting muscle function and contributing to the overall severity of the disease. The findings of this Solve-funded study suggest that understanding and potentially targeting this pathway could offer new avenues for diagnosing and treating ME/CFS, especially for those with OI.

Another researcher who received early support from Solve, **Dr. Jonas Bergquist (Ramsay Class of 2018),** recently published findings from research funded by Open Medicine Foundation (OMF). In "Analysis of tryptophan metabolites and related compounds in human and murine tissue: development and validation of a quantitative and semi-quantitative method using high resolution mass spectrometry," Bergquist and his co-authors investigated the levels of tryptophan metabolites in plasma samples using high-resolution mass spectrometry. By incorporating this methodology into a new study of plasma samples from people with ME/CFS, they hope to uncover potential mechanisms involved in disease development.

You Can Help Turn Research Into Reality!

> Without the support of Solve's Ramsay Grant, we would not have been able to continue our search for the cause of the skeletal muscle-related problems that patients with Long Covid suffer from during their post-exertional malaise. With this funding we add additional fundamental knowledge to the pathophysiology of post-exertional malaise, with the hope that this can result in better therapeutic potentials for patients to alleviate these symptoms. We are sincerely in debt to the support of the donors and patients that support Solve. We know that some patients have lost their jobs and financial security due to this deliberating disease. With this support, we hope to find answers to some of the most pressing questions in the field."
>
> – **Rob C. I. Wüst, PhD** (Ramsay Class of 2022)



Your dollars fuel our efforts to rewrite the rules of medical research and ensure that it is truly patient-driven. And if you make a gift by June 30, your support can make an even greater impact!

Thanks to generous friends of Solve, we are in the final days of a $50,000 match challenge. Your donation now will have a multiplier effect, creating positive change that extends far beyond what any of us could accomplish alone.

Please consider having your gift matched and double your impact today. Your donation fuels groundbreaking discoveries, transforming hope into tangible treatments and cures.

Help us turn research into reality!

GIVE TODAY

Join the Healthcare Revolution: Solve Together Now Enrolling Participants for Pioneering Clinical Studies

Solve Together has over 2,000 ME/CFS and Long Covid patients and healthy participants who are tracking their health status and symptoms, connecting their medical records in a secure repository, setting pacing notifications to prevent post-exertional malaise, and engaging in clinical research.

Solve Together
REAL-WORLD DATA PLATFORM

Solve Together is supporting several exciting research studies.

- Changes in the Gut Microbiome in Long Covid with Vassar College's Dr. David Esteban
- Hydrogen Water Dosing Study: An Interventional Clinical Trial with Stonybrook's Dr. Fred Friedberg
- A Mount Sinai Research Study investigating the long-term symptoms experienced by people with Long COVID
- The Long COVID Wearable Study with Scripps Research's Dr. Julia Moore Vogel to determine whether wearable devices improve management of Long COVID, ME/CFS, and related conditions

To be considered for studies recruited from the Solve Together platform, simply register for Solve Together and sign the sub-study consent form. If you are already a Solve Together participant, the sub-study consent form will appear as a new survey in the app (unless you have already signed it).

Did you know?

Solve Together can link to:

- Apple Watch
- Fitbit
- Garmin
- Oura Ring
- Withings
- Any device that links to Apple Health or Google Fit

Learn More About Current Clinical Studies with the Solve Together Webinar Series

Solve has hosted several webinars featuring investigators from studies that are supported by Solve Together.

- Dr. David Putrino and Dr. Jamie Wood of the Icahn School of Medicine at Mount Sinai presented, "Comparing immunological signatures between Long Covid and ME/CFS." Watch it here.
- Julia Moore Vogel, PhD, (Senior Program Director at Scripps Research and Principal Investigator of the Long Covid Wearable Study) presented, "Symptom Management and Patient Empowerment Through The Long Covid Wearable Study." Watch it here.
- Dr. Fred Friedberg (Research Professor at Stony Brook University School of Medicine) presented, "Hydrogen Water Dosing Study for ME/CFS: A New Clinical Trial." Watch it here.
- Solve Ramsay Research Grant winner David Esteban, PhD, (Assoc. Professor of Biology, Vassar College) presented, Changes in the Gut in ME/CFS and Long Covid." Watch it here.

Watch other Solve Together-related webinars here, and check our Events page for upcoming webinar announcements.

Solve Together, designed by patients for patients, is endorsed by researchers.

"Solve [Together] is expediting the time between starting a study and having results."
—Dr. David Esteban

Study Using Solve Real-World Data (RWD) Examines Joint Hypermobility in People with ME/CFS

A study recently published in the Autonomic Disorders section of Frontiers in Neurology uses data collected by Solve to identify a possible ME/CFS disease subgroup.

"Do People with ME/CFS and Joint Hypermobility Represent a Disease Subgroup? An Analysis Using Registry Data," by Kathleen Mudie, Allison Ramiller, Sadie Whittaker, and Leslie E. Phillips, is the first publication using data from Solve's You+ME registry.

In this study of 815 individuals with ME/CFS, Solve researchers explored the connection between ME/CFS and joint hypermobility using Solve's You+ME participant data platform, where patients report their health experiences. They found that some people with ME/CFS also have joint hypermobility, a condition in which joints easily move beyond their normal ranges. In multiple domains, those with joint hypermobility experienced more severe ME/CFS symptoms, including worse physical function and more pain, highlighting a potential subgroup within ME/CFS patients that may benefit from special attention.

The findings from this study are crucial for several reasons:

Personalized Care:
Understanding that joint hypermobility may be correlated with the severity of ME/CFS means doctors might start looking for this condition more carefully, offering more personalized and effective treatment plans.

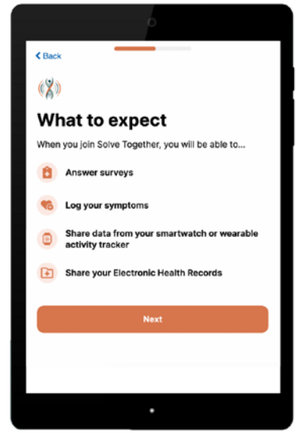
Improved Diagnosis:
This research points to the need for comprehensive assessments for ME/CFS patients, potentially leading to quicker and more accurate diagnoses for those with joint hypermobility.

Future Treatments:
By identifying subgroups within ME/CFS patients, researchers can target these groups in future studies, potentially leading to new, more precise, and effective treatments.

Interestingly, the COVID Symptom Study Biobank in the UK recently found that individuals with hypermobile joints are 30% more likely to experience a prolonged recovery from COVID-19, highlighting an additional association of joint hypermobility with infection-associated chronic conditions and illnesses, such as Long Covid.

Transforming Your Data Into Clinical Breakthroughs with Solve Together

Your data is a unique and powerful tool that allows researchers to uncover subtle patterns and connections, offering hope for better understanding, diagnosing, and treating conditions like ME/CFS, Long Covid, and other infection-associated chronic conditions and illnesses.



Solve Together is not just a traditional registry, but a dynamic, patient-centered platform that integrates multiple data sources designed to speed up the discovery of treatments and cures. We make data on infection-associated chronic conditions and illnesses accessible to researchers, expediting the identification of diagnostic and therapeutic targets.

Patients can use Solve Together to create reports for their doctors, sync health-tracking wearables, and discern their distinct symptoms and health trends. Solve Together will also enable Solve to connect researchers with individuals interested in participating in clinical research studies.

Click here to learn more about and join Solve Together so you can contribute your data to the RWD platform to help Solve drive future breakthroughs in post-infectious disease research.

Findings From the NIH Intramural ME/CFS Clinical Study: The Good, the Bad, and the Complicated

Findings from the National Institutes of Health (NIH) Intramural ME/CFS Clinical Study were published in Nature Communications in March to mixed reception by the patient advocate community. Co-written by 75 experts from 15 of the 27 NIH institutes, "Deep phenotyping of post-infectious myalgic encephalomyelitis/chronic fatigue syndrome" highlights results of the study, including differences in brain activity, immune abnormalities, and other abnormalities in 17 people with ME/CFS compared with 21 healthy participants. Solve helped recruit for the study and encouraged our community to participate.

Begun in 2016, the eight-year study cost more than $8 million. Researchers faced recruitment challenges, and only enrolled patients whose symptoms developed after a viral or bacterial illness, and had been sick five years or less. They excluded patients with other medical conditions that might confound the results.

In the NIH press release, National Institute of Neurological Disorders and Stroke (NINDS) director Walter Koroshetz stated, "People with ME/CFS have very real and disabling symptoms, but uncovering their biological basis has been extremely difficult. This in-depth study of a small group of people found a number of factors that likely contribute to their ME/CFS. Now researchers can test whether these findings apply to a larger patient group and move towards identifying treatments that target core drivers of the disease."

Multiple major news outlets tapped members of Solve's extensive network of experts, including multiple scientists from Solve's Ramsay Research Grant Program, to share their big takeaways from the study.

Our response to the publication of this long-awaited and costly study is mixed.

The Good

On a positive note, the study underscores the commitment of the NIH to understanding ME/CFS, highlighting that patients are often neglected or ignored. Researchers discovered other biological differences between ME/CFS patients and healthy controls, including elevated heart rates and blood pressure normalization after exertion. The researchers also discovered that several patients were living with other undiagnosed health issues, making clear we need to see improvements in how patients get diagnosed, nationwide.

The study has also brought much-needed visibility to ME/CFS by garnering the attention of mainstream media. Millions of readers across the world will be educated and the publicity will be a vital tool to share with skeptical medical providers, political leaders, and family members.

In *Science*, Dr. Nancy Klimas found it notable that, "This is a disease of the brain…The inability to sustain energy was coming from that organ." Solve Research Advisory Council (RAC) member Dr. Anthony Komaroff echoed this in *The New York Times*, stating that NIH researchers "speculate that the chronic immune stimulation that they found and the changes in the gut microbiome that they found could lead to these brain changes, which then leads to symptoms."

Dr. Katherine Seton (Ramsay Class of 2022) told the *Science Media Centre*, "Historically, studies investigating ME/CFS have often focussed on singular aspects of the disease, largely due to inadequate funding for this disease. These fragmented studies merely offer isolated pieces of a larger jigsaw puzzle. However, the current paper stands out with its extensive author list, featuring experts from diverse disciplines collaborating to assemble these pieces and reveal a more complete picture. This interdisciplinary approach is crucial for advancing our understanding of this disease."

Perhaps most importantly, the study reveals the dire need for even more research on ME/CFS and other infection-associated conditions. Solve RAC member Dr. Maureen Hanson told *STAT News*, "We need to know at the molecular and biochemical level, how similar are pre-pandemic ME/CFS patients to people with long Covid? We don't know that. There's an assumption that they're the same."

The Complicated

We're concerned that the study:

- Failed to adequately address post-exertional malaise (PEM)
- Claimed that an outsized portion of the participants recovered spontaneously
- Does not account for remission periods for people with ME/CFS
- Used highly problematic and controversial language regarding "effort preference"

The Bad

"For this kind of time, money, and expertise, I was expecting more," shared Solve CEO Emily Taylor. "We've been watching and waiting for these results for eight years and when we finally got them, they didn't address the needs of patients. I can't help but imagine what amazing advancements these resources could have yielded if the NIH had collaborated instead with researchers who were already familiar with this patient population, like our Solve Ramsay Research Grant scientists, instead. At the very least, the topic of post-exertional malaise would have been handled appropriately."

Perhaps most importantly, the glaring absence of patient voices at all stages of this project reflects a huge missed opportunity and contributed to the lackluster outcomes of the study."

Dr. Carmen Scheibenbogen (Ramsay Class of 2016) noted in *The New York Times*, "They selected rather healthy patients. I think there are a lot of interesting findings, it's just disappointing because that was such a major approach and they selected patients which are not very representative."

The publication of the study has raised many questions, including:

- What was the patient engagement process in this study?
- What follow-up or long-term study is planned?
- What did this paper contribute to the field?
- Are the paper authors open to amending the paper to remove the confusing and misleading term of "effort preference"? If they do not, they risk future researchers following their lead and taking the field down the wrong path for years to come.

Solve Chief Scientific Officer Tim Hsiao, PhD, wrote of the study:

"I am also somewhat concerned about the use of the metric 'effort preference' and what this term might communicate to the lay, general audience. The authors didn't say so in this report, but, just as a precaution, I want to make it super clear to the general audience that the concept of 'effort preference' does not and should not mean that people with ME/CFS simply do not want to apply effort or work on effortful tasks. On the contrary, many people with ME/CFS are hard-working and continually seeking higher levels of independence. Many people with ME/CFS, from time to time, actually risk applying too much effort and pushing themselves too hard, as they desire to support and/or relieve their family members and loved ones, and the result is a worsening of their symptoms, known as PEM."

Read the NIH press release on the study here.

You Can Make a Difference with DIY Fundraising for Solve

Solve community members and donors David Hull, Rebecca Groble and their son, Gabe, recently hosted a DIY (Do It Yourself) fundraiser for Solve. Gabe has suffered from ME/CFS for five years, and in celebration of Gabe's 25th birthday, his friends and family raised over $7,000 to support Solve and the fight against ME/CFS, Long Covid, and other infection-associated chronic conditions. Gabe's motto is "Together, we will finally see the end of ME/CFS."

Gabe sent the letter at right to the people in his network.

Like Gabe and his friends and family, YOU can inspire hope AND get us one step closer to finding solutions when you harness the power of your community!

For those of us who are able, DIY fundraising is an incredible gift and a great way to be a catalyst for change. By mobilizing and engaging your family, friends and colleagues, you multiply the impact of your giving. YOUR story, YOUR 'Why,' YOUR voice are powerful tools in the progress we can make together.

Access all the resources you need here and launch your fundraiser today!

Dear Friends,

As I approach my 25th birthday, it strikes me that I soon will have spent a fifth of my life severely ill with Myalgic Encephalomyelitis/ Chronic Fatigue Syndrome (ME/CFS). That is, quite simply, far too long.

For five years now, this awful illness has forced me to live less than half a life. I've long forgotten the last time I was so blessed as to leave my room—let alone go downstairs—let alone go outside and breathe clean air and feel the green grass below my feet.

It is quite easy to view severe illness like this as sad yet distant—something that only happens to other people. But that's exactly what I thought before I got sick. While ME/CFS has never been a rare disease, one's risk of developing it has never been greater: the CDC estimates 7% of people who get COVID will go on to develop Long COVID, and around half of those patients meet diagnostic criteria for ME/CFS! That's millions and millions of people. In short, the likelihood that you or someone you love dearly might develop this horrid condition is far, far higher than you might imagine.

And what is the prognosis for those who go on to develop ME/CFS? Not great. I'm quite fortunate to have one of the best ME/CFS specialists in the world and receive the most cutting-edge treatments and yet I am still so very, very ill. This is for a simple reason: decades of medical neglect and research underfunding. We simply haven't put in the time and money necessary to make clear the pathology of the disease, let alone treat it.

I hope you will join me in supporting Solve ME in celebration of my birthday. Solve has made significant strides towards finding treatments and cures for post-infection diseases like ME/CFS and Long Covid. These include securing over $1 billion in congressional funding for research, building a global network of researchers, and educating pharmaceutical companies about the unmet needs of our community. Together, we can finally see the end of ME/CFS.

My sincere thanks,

Gabe

NEWS AND UPDATES

Letter from Solve President and CEO Emily Taylor

Dear Solve M.E. Community,

As the new CEO of Solve M.E., I am filled with gratitude and pride as I step into this role. I am here thanks to my family, especially my mom. Thank you for teaching me, inspiring me, and showing me what bravery really is.

I also want to express my heartfelt thanks to each one of you. Your support, your impactful contributions, your generous gifts, and, most importantly, your willingness to share your voices and experiences have been the driving force behind our organization's achievements. To those who have bravely put their bodies on the line for science, sharing your personal journeys with health and recovery, push and crash, ***you*** are the true heroes in this fight. It is your strength and dedication that inspire us every day and fuel our mission to find solutions for ME/CFS and related conditions.

Your ongoing support is invaluable, and it's because of you that we have made significant strides in understanding and combating these complex conditions. Yet there's more work to be done, and with your continued engagement, we will push the boundaries of research, advocacy, and care.

The path forward is filled with promise and potential. As we embark on this journey together, I am eager to listen, learn, and collaborate with you all. The road ahead is one of shared goals, shared struggles, and shared triumphs. With your continued support, we will not only confront the challenges of today but also lay the groundwork for a future where everyone affected by ME/CFS and related conditions can live fuller, healthier lives.

Together, we will solve ME/CFS, Long COVID, and other IACCIs.

With deepest gratitude and commitment,

Emily Taylor

Emily Taylor
President & CEO
Solve M.E.

Commemorating ME Awareness Month With a "Bid for Hope"

In honor and recognition of May as ME Awareness Month, Solve hosted our inaugural online auction, Bid for Hope, raising over $6,000 for continued research and advocacy.

Auction items included:

- A 15-minute Zoom with author Meghan O'Rourke and a copy of her bestselling book, *The Invisible Kingdom: Reimagining Chronic Illness* (2022).
- Two nights at a vacation home in Sunriver, Oregon.
- Three nights at a luxury apartment on Lake Placid.
- Meet and greet with Olympic Gold Medalist and Friend of Solve Pam Shriver, and tickets to the U.S. Open in New York City this summer.
- One night at the Luxe Hotel in Los Angeles.
- Bidding wars with numerous bids placed!

Thanks to all of you who helped make our first online auction a big success!

Pam Shriver, Olympic Gold Medalist and Friend of Solve

"Solve M.E. is an organization close to my heart. I know how debilitating ME/CFS, Long Covid and other post-infection illnesses can be, and how education and public awareness are vital to finding answers. That's why I'm donating a unique experience for Solve's inaugural online auction in honor of ME Awareness Month."

STAY IN TOUCH!

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YouTube: youtube.com/SolveME

Solve M.E. Chronicle archive:
SolveME.org/news-and-insights

Humans of Chronic Illness:
HumansofChronicIllness.org

Solve Together:
SolveME.org/solve-together

SUMMER 2024

Solve ME/CFS Initiative (Solve M.E.) is a catalyst for critical research into diagnostics, treatments, and cures for myalgic encephalomyelitis/chronic fatigue syndrome (ME/CFS), Long Covid and other infection-associated chronic condtions and illnesses (IACCIs). Our work lays the foundation for breakthroughs that can improve the lives of millions who suffer from various "long haul" diseases.

Photo by Linus Nylund on Unsplash

CHARITY NAVIGATOR
★★★★
Four Star Charity

SUPPORT SOLVE M.E. SolveME.org/DONATE