ME/CFS NEWSLETTER

INTRODUCTION

This newsletter provides updates and information about myalgic encephalomyelitis/chronic fatigue syndrome (ME/CFS) research news, ME/CFS Collaborative Research Network (MECFSnet) news, and new and ongoing activities at NIH related to ME/CFS.

Do you have suggestions for our newsletter? Please send them to info@mecfsnet.org.

2025 MECFSnet PUBLICATIONS

Network researchers have published six papers this year. Each publication is the result of hard work, innovation, and commitment to improve the diagnosis and treatment of ME/CFS.

Here is a complete list of network papers that were published to date in 2025:

- Circulating Levels of SMPDL3B Define Metabolic Endophenotypes and Subclinical Kidney Alterations in Myalgic Encephalomyelitis
  Rostami-Afshari B, Elremaly W, McGregor NR, Huang KJK, Armstrong CW, Franco A, Godbout C, Elbakry M, Abdelli R, Moreau A

- A Perspective on the Role of Metformin in Treating Encephalomyelitis/Chronic Fatigue Syndrome (ME/CFS) and Long COVID
  Fineberg D, Moreau A, Schneider-Futschik E, Armstrong CW

- Heightened Innate Immunity May Trigger Chronic Inflammation, Fatigue and Post-Exertional Malaise in ME/CFS
  Che X, Ranjan A, Guo C, Zhang K, Goldsmith R, Levine S, Moneghetti KJ, Zhai Y, Ge L, Mishra N, Hornig M, Bateman L, Klimas NG, Montoya JG, Peterson DL, Klein SL, Fiehn O, Komaroff AL, Lipkin WI

- Haptoglobin Phenotypes and Structural Variants Associate with Post-Exertional Malaise and Cognitive Dysfunction in Myalgic Encephalomyelitis
  Moezzi A, Ushenkina A, Widgren A, Bergquist J, Li P, Xiao W, Rostami-Afshari B, Leveau C, Elremaly W, Caraus I, Franco A, Godbout C, Nepotchatykh O, Moreau A

- Circulating Cell-Free RNA Signatures for the Characterization and Diagnosis of Myalgic Encephalomyelitis/Chronic Fatigue Syndrome
  Gardella AE, Eweis-LaBolle D, Loy CJ, Belcher ED, Lenz JS, Franconi CJ, Scofield SY, Grimson A, Hanson MR, De Vlaminck

- Circulating FGF-21 as a Disease-Modifying Factor Associated with Distinct Symptoms and Cognitive Profiles in Myalgic Encephalomyelitis and Fibromyalgia
  Azimi G, Elremaly W, Elbakry M, Franco A, Godbout C, Moreau A

- AI-Driven Multi-Omics Modeling of Myalgic Encephalomyelitis/Chronic Fatigue Syndrome
  Xiong R, Aiken E, Caldwell R, Vernon SD, Kozhaya L, Gunter C, Bateman L, Unutmaz D, Oh J

- Skeletal Muscle Adaptations and Post-Exertional Malaise in Long COVID
  Charlton BT, Goulding RP, Jaspers RT, Appelman B, van Vugt M, Wüst RCI

- SMPDL3B a Novel Biomarker and Therapeutic Target in Myalgic Encephalomyelitis
  Rostami-Afshari B, Elremaly W, Franco A, Elbakry M, Akoume MY, Boufaied I, Moezzi A, Leveau C, Rompré P, Godbout C, Mella O, Fluge Ø, Moreau A

- Extracellular Vesicle Proteomics Uncovers Energy Metabolism, Complement System, and Endoplasmic Reticulum Stress Response Dysregulation Postexercise in Males with Myalgic Encephalomyelitis/Chronic Fatigue Syndrome
  Glass KA, Giloteaux L, Zhang S, Hanson MR

- An In-Depth Exploration of the Autoantibody Immune Profile in ME/CFS Using Novel Antigen Profiling Techniques
  Germain A, Jaycox JR, Emig CJ, Ring AM, Hanson MR

NETWORK NEWS

2025 ME/CFS Investigator Meeting: Virtual Research Update

The MECFSnet convened the 2025 ME/CFS Investigator Meeting on August 4. The virtual meeting was attended by 68 participants, including members from NIH and each research center—Columbia's Center for Solutions for ME/CFS, Cornell's ME/CFS Collaborative Research Center, the Interdisciplinary Canadian Collaborative ME Research Network, and RTI International's Data Management and Coordinating Center. The NINDS director Dr. Walter Koroshetz and the NIAID Acting Director Dr. Jeffrey Taubenberger provided key updates from NIH. Participants heard research updates from more than 20 speakers on how they are advancing ME/CFS research through innovation and science.

The Center for Solutions team, led by Dr. Ian Lipkin, introduced three research projects, and presented updates on the following research:

- Molecular correlates of symptom severity, using a mobile app and real-time sampling during symptom flares
- Genetic variants between people with ME/CFS and healthy controls
- Longitudinal serological surveillance and potential infectious triggers

The Cornell ME/CFS Collaborative Research Center team, led by Dr. Maureen Hanson and Dr. Andrew Grimson, provided updates on three research projects and four pilot projects led by early-career scientists. Research project updates focused on the following:

- Immune dysregulation in ME/CFS using advanced genomics
- Skeletal muscle tissue analysis in ME/CFS, including the cellular and molecular mechanisms behind muscle fatigue and dysfunction
- ME/CFS biology through extracellular vesicles, proteomics, and immunophenotyping

Awardees from the New Frontiers ME Discovery Grant and ME Stars for Tomorrow doctoral programs shared updates, in a session moderated by Dr. Alain Moreau, **ICanCME Research Network**.

The **MECFSnet Data Management and Coordinating Center,** led by Dr. Megan Carnes at RTI International, provided an update on ongoing efforts to develop and enhance tools like mapMECFS and searchMECFS to foster transparency and collaboration, and help researchers share and analyze data in real time.

RESEARCH NEWS

Research Tool Update: mapMECFS and searchMECFS

mapMECFS is a growing repository of ME/CFS data on a secure, flexible data-sharing platform with enhanced search capabilities available to all registered researchers. mapMECFS is designed to ease common data-sharing hurdles, allowing ME/CFS researchers to browse, share, compare, and download ME/CFS-related datasets from within one data repository. mapMECFS hosts a range of data types including the microbiome, metabolomics, immune signatures, proteomics, and more.

Our most recently released dataset is from the Cornell ME/CFS Collaborative Research Center titled Extracellular Vesicle Proteomics Uncovers Energy Metabolism, Complement System, and Endoplasmic Reticulum Stress Response Dysregulation Post-Exercise in Males with ME/CFS (Glass et al. 2025 – publication listed above). Cornell scientists studied blood samples to analyze tiny particles called extracellular vesicles. They compared protein changes in the extracellular vesicles at different times before and after exercise using advanced laboratory techniques. The resulting data were made available on mapMECFS.

searchMECFS is an online interactive query tool to search for biospecimens that are available for ME/CFS research studies. Currently, searchMECFS provides access to data and biospecimens from the Chronic Fatigue Initiative (CFI) and the Multi-Site Clinical Assessment of Myalgic Encephalomyelitis/Chronic Fatigue Syndrome Study (MCAM). The Open Medicine Foundation was recently granted access to CFI plasma samples for inclusion in their BioQuest project, the largest biomarker study of its kind for ME/CFS.

ME/CFS Common Data Elements

The NIH Office of Data Science Strategy provided funding through NINDS for continued development of common data elements (CDEs) for research on ME/CFS. There are three working

groups focused on developing CDEs for post-exertional malaise (PEM; chaired by Dr. Dane Cook), cognitive impairment (chaired by Dr. Jackie Becker), and functional status (chaired by Dr. Kristian Sommerfelt). Each working group is composed of investigators, clinician-scientists, and people with lived experience who are volunteering their time for this important effort. The results of these three working groups are expected by the end of 2026, so look for more updates coming soon!