

Dr. Rowe: A Leading Voice for Children & Adolescents with ME/CFS

**DR. PETER ROWE** is a professor of pediatrics at the Johns Hopkins University School of Medicine and a member of the SMCI Research Advisory Council (RAC). He serves as the director of the chronic fatigue clinic at Johns Hopkins Children’s Center.

Dr Rowe has had a long and distinguished career and is one of the most respected voices in the ME/CFS disease space. His work has been supported by SMCI as well as other federal and private sources. After receiving his undergraduate degree from the University of Toronto, Dr. Rowe earned his medical degree at McMaster University Medical School in Ontario and completed his residency and fellowship in pediatrics at Johns Hopkins and the Robert Wood Johnson General Pediatric, respectively. He has been on the Johns Hopkins faculty since 1991.

Notably, Dr. Rowe is the lead author on the “ME/CFS Diagnosis and Management in Young People: A Primer” published in the journal *Frontiers in Pediatrics* and “Neuromuscular Strain Increases Symptom Intensity in Chronic Fatigue Syndrome” published in *PLoS One* and sponsored for publication by SMCI. What follows is a transcript of our conversation with Dr. Rowe.

**How do you evaluate the ME/CFS field and the progress (or lack thereof) you see right now?**

I started working on ME/CFS in the early 1990s. There has been substantial progress since then, although we have a long way to go before any of us can be satisfied. We have a much better understanding of the importance of post-exertional malaise in ME/CFS, including the gene expression changes that accompany this problem. We have much better tools for helping patients manage their symptoms than were available 20-25 years ago. Some of that progress comes from general advances in medicine, such as more effective medications and techniques to manage pain, headaches, and sleep dysfunction. Some comes from research specific to ME/CFS.

For example, in my practice, the practical clinical advances have been the introduction of medications and other management strategies for treating co-morbid orthostatic intolerance, managing common biomechanical movement restrictions using manual therapy techniques, recognizing the role of Ehlers-Danlos syndrome and joint hypermobility, and looking for...
evidence of milk protein intolerance in the subset with that problem. As a result of these kinds of advances, I think we are quicker to achieve better function for some. That stands in stark contrast to the desperate need for improved understanding of the pathophysiology of severe forms of ME/CFS, and the need for more effective treatments overall.

Why are you so dedicated to the MECFS population and what sparked your interest in this disease in the first place?

I was working in a general pediatric diagnostic clinic in the early 1990s. That provided a unique opportunity to see patients who had recurrent spells of fainting back-to-back with those who had ME/CFS. What struck me was the similarity in the physical conditions (i.e. in quiet upright postures) that led up to lightheadedness in the fainters and to increased symptoms in those with ME/CFS.

At that time, only the fainters were being evaluated using tilt table testing. When we investigated ME/CFS patients using tilt table tests, we found, somewhat surprisingly, that they had much worse control of blood pressure and heart rate than the fainters. When we began treating the ME/CFS patients with medications that worked for recurrent fainting, it opened up new possibilities for improving daily function. Treating the circulatory problems in many instances helped their cognitive fogginess, improved energy and lightheadedness, and enabled them to tolerate exercise. These were exciting and gratifying changes, and I became fascinated by the challenges of trying to find better explanations for the genesis of ME/CFS symptoms and also better treatment approaches.

If you had a magic wand, what are the top three barriers you would remove first in order to accelerate the discovery process or improve the lives of patients?

First of all, I think a better linkage between clinical care and scientific investigation is critical to advancing understanding. Right now we have a striking mismatch between the number of patients needing care and the number of experienced ME/CFS providers. The more clinicians we can attract to the field, the greater the chance that new treatment strategies will emerge. Good clinical observation will almost certainly refine the scientific questions we need to ask.

Second, I think we need better funding for practical treatment trials that can more rapidly assess the efficacy of current or proposed treatments, or replicate the more promising studies done before. It is shameful that 20 years later we have still not had a replication of Kathy Rowe’s randomized controlled trial that demonstrated the effectiveness of intravenous immunoglobulin in adolescents with ME/CFS. Another barrier to overcome is the lack of consistent funding to enable us to attract and retain young CFS investigators.
Tell us about the new pediatric primer.

In June of 2017, the journal *Frontiers in Pediatrics* published a primer on diagnosis and best practices for symptom management in ME/CFS adolescents and young adults. Initiated by an invitation from Ken Friedman, Alan Gurwitt, and Rosemary Underhill and authored by an international group of ME/CFS experts, the Primer contains an abundance of practical clinical advice—including tips on diagnostic criteria, ways to distinguish ME/CFS from other fatiguing illnesses, strategies for addressing symptoms, and specifics on the unique aspects of ME/CFS in children and adolescents. It also provides detailed suggestions on how to diagnose and manage orthostatic intolerance, one of the most treatable contributors to pediatric ME/CFS symptoms.

Disclosure: The Solve ME/CFS Initiative sponsored the publication of “Myalgic Encephalomyelitis/Chronic Fatigue Syndrome Diagnosis and Management in Young People: A Primer” in the journal *Frontiers in Pediatrics*.

You are an expert in ME/CFS but also in Orthostatic Intolerance (OI) and Ehlers-Danlos syndrome (EDS). Can you describe the overlap a bit and how knowledge of OI and EDS is helping us understand ME/CFS?

Chronic fatigue had long been recognized as a prominent, often unavoidable symptom in EDS—a heterogeneous condition characterized by joint hypermobility, skin fragility, and connective tissue laxity. In the pediatric ME/CFS clinic, we noticed that we had significantly more EDS patients than expected, most of whom had not been diagnosed with EDS. Similarly, in the Genetics clinic, many EDS patients met the criteria for CFS, but had not been given that diagnosis.

Even in the absence of full-blown EDS, 60% of our pediatric ME/CFS patients had joint hypermobility on examination, compared to just 24% of healthy controls. Having connective tissue laxity thus increases the risk of developing CFS, although the mechanism isn’t entirely understood. One observation that has emerged from studying the EDS patients is that, like those with CFS, they have a higher prevalence of lightheadedness and orthostatic intolerance than healthy individuals. The mechanism might be that their blood vessels are as stretchy as their skin and ligaments. When we stand, and blood shifts to the lower half of the body, the blood vessels of those with EDS dilate more readily in response, allowing more gravitational pooling of blood, which in turn predisposes them to postural tachycardia syndrome (POTS) and neurally mediated hypotension (NMH). Treatments and PT practices that help those with EDS can help us treat those with ME/CFS more effectively, and the same goes for clinical insights from ME/CFS that are now being made available to those with EDS.

Is there a particular line of investigations that you see missing or need more emphasis? What do you think are the most promising areas right now?

I’d like to see more attention to the ability of orthostatic stress to aggravate cognitive dysfunction, PEM, and other symptoms of ME/CFS. I’d also like to see more work on the role of autoimmunity, following up on the interesting preliminary work on antibodies directed against autonomic receptors in POTS and ME/CFS (see for example work by Kem D, 2014; Loebel M, 2015). This may overlap with the work by Fluge and Mella on rituximab and other therapies that have been used in autoimmune illnesses.

The EDS/joint hypermobility overlap with ME/CFS has been relatively neglected in the ME/CFS world and I think we need to more seriously investigate this interaction.

We need more investigation of the interaction of nerve movement and nerve function, especially given that adding tension to nerves and soft tissue can increase the intensity of symptoms in ME/CFS. We need to understand how the nervous system gets mechanically sensitized in ME/CFS and further treatment in this area.
A relatively new observation that warrants more attention is that mast cell activation syndrome (MCAS) symptoms overlap a great deal with CFS. A subset of those with POTS and syncope have mast cell disorders. There has been very little investigation of this overlap, despite the potential for improved understanding of the mechanisms of symptoms, and some very practical therapeutic options for those with ME/CFS.

How do you evaluate the work SMCI is doing in the field?

Research funding can be fairly conservative, often favoring low-risk/low-reward projects. SMCI has been essential to investigators with new ideas and hypotheses, providing money for seed projects that allow collection of preliminary data in support of larger NIH applications. It takes a while for new findings to gain traction in the scientific community. Many of the investigators who have made the greatest impact on the field have had early funding from SMCI. Importantly, SMCI is not only facilitating funding for ME/CFS medical research but is also generating new data and findings proactively to share with the broader community and is filling knowledge gaps and giving visibility to the disease throughout. I am impressed with the work of this committed organization and pleased to be serving on its RAC.

Tell us a little bit about your personal life and hobbies, if you wish.

My wife Carla and I have one child, Ian, who was a long-distance swimmer in high school and college, and is now a full-time swim coach with the Nation’s Capital Swim Club in the Washington DC suburbs. Carla is an amateur landscape photographer, and I have picked up that interest from her. I like to do a bit of vegetable gardening, although the fruits of those labors are usually enjoyed more by the animals that steal the produce than by our family. And I am a big Orioles fan, always hoping for a return to the glory days of their 1960s teams.