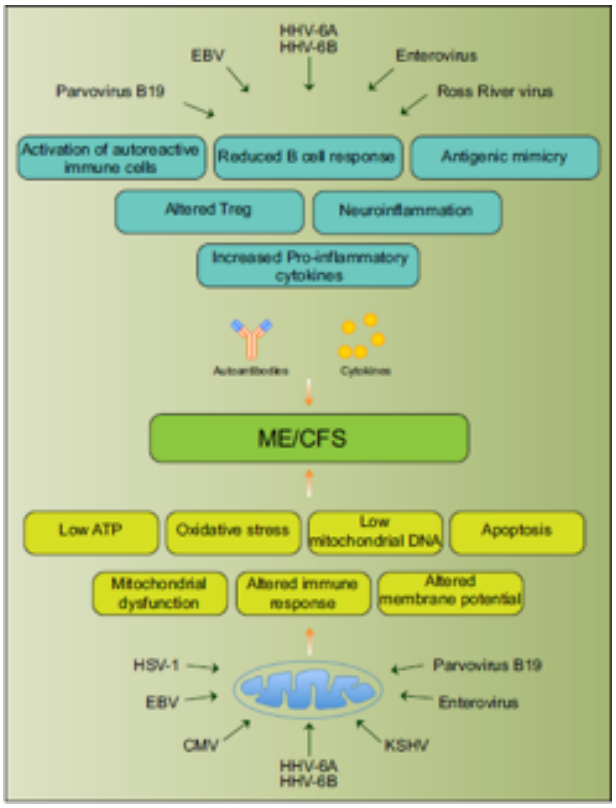
Ramsay Program Inspires 2016 Ramsay Investigator Dr. Bhupesh Prusty to Deepen His Engagement in ME/CFS

BHUPESH PRUSTY, PHD, a molecular virologist at University of Würzburg, Germany, designed his Ramsay 2016 project to explore the hypothesis that **deficient energy production observed in ME/CFS may be related to a host-pathogen interaction**. He focused on HHV-6, a human herpes virus that has been implicated in chronic conditions.

The preliminary manuscript from his Ramsay-funded work, titled "HHV-6 encoded small non-coding RNAs define an intermediate and early stage in viral reactivation," was published in *Genomic Medicine* in September 2018. The paper outlines a mechanism that accounts for how, even with a low number of copies of the virus in the blood, HHV-6-infected cells might still impact energy production in adjacent or distant cells through factors secreted in the blood plasma. The unique stage of viral activation identified by Dr. Prusty and his co-authors has the potential to serve as a biomarker for ME/CFS.



A figure showing a number of viral pathogens linked to ME/CFS and mechanisms in the body potentially altered by these pathogens that might contribute to ME/CFS development. (Rasa et al. J Translational Med (2018) 16:268. https://doi.org/10.1186/s12967-018-1644-y)

As part of his 2016 study, Dr. Prusty applied this experimental method to ME/CFS patient samples. In October, a second manuscript with that data was being prepared for publication. Pilot data from the project has the potential to secure larger grant funding.

Dr. Prusty is an inspiring example of a researcher **new to ME/CFS** who is staying engaged in the field. In addition to contributing to ME/CFS research literature through his Ramsay project, he also co-wrote an extensive review on chronic viral infection in ME/CFS in the October 2018 edition of *Translational Medicine*, on behalf of the European Consortium (EUROMENE) on ME/CFS. Dr. Prusty's review surveyed studies on the potential role of various viruses

Dr. Bhupesh Prusty (center) and colleagues

and molecular mechanisms, including altered immune cells, changes in mitochondria, and autoimmunity in the development of ME/CFS. Advances in understanding the behavior of various pathogens **caused the review authors to cast doubts over the validity of several past findings**. However, the authors conclude there is evidence for a role of viral infection in at least a subgroup of ME/CFS patients. They recommend future strategies to improve studies through subtyping the patient population, standardization, the use of disease controls, and longitudinal data collection.

In collaboration with Prof. Carmen Scheibenbogen, another SMCI Ramsay-supported researcher, and other members of the EUROMENE Biomarkers Working Group, Dr. Prusty hopes that this review article **"will help researchers plan future studies on finding viral etiology behind ME/CFS."** SMCI is thrilled that Dr. Prusty has expanded his influence in the ME/CFS field and added his voice to a powerful collective calling for improved study methods and collaboration. ■