SOLVE ME/CFS AND #MEACTION
ADVOCACY DAY
APRIL 3, 2019 | WASHINGTON, DC

Why ME/CFS Matters for Defense & the Peer-Reviewed Medical Research Program

Myalgic Encephalomyelitis/Chronic Fatigue Syndrome (ME/CFS)

To better understand the prevalence and impact of ME/CFS among active duty military and veterans, as well as define the underlying pathobiology and develop strategies for effective treatment and prevention, ME/CFS should be made an eligible research topic in the Peer-Reviewed Medical Research Program (PRMRP) targeted for biomedical research funding through the U.S. Department of Defense in fiscal year 2020.

The physical and cognitive symptoms of ME/CFS preclude military readiness for those who suffer from this condition. However, very few ME/CFS studies have examined military personnel or been applied to military settings for health care delivery. The cost of ME/CFS to military medical services (namely the Veterans Affairs medical system, which strives to deliver care to patients suffering service-related injury or illness through the War Related Injury and Illness Study Centers[i]) and to workforce capacity has not been determined. No FDA-approved treatment for ME/CFS exists, therefore identification of the underlying causal pathophysiology would have the capacity to yield novel therapeutic avenues which could restore troop fitness for service and improve the lives of service members enduring deployment-related morbidity and/or mortality due to ME/CFS and/or chronic multisystem illness (CMI).

ME/CFS onset is linked to various environmental exposures, including viruses, neurotoxins and chronic stress.[ii] These linkages echo many of the exposures faced by military service personnel in conflict areas: living in extreme climates and environments, extreme physical exertion, multiple vaccinations, exposure to foreign viruses and microbes, toxic chemicals and neurotoxins. These deployment exposures may put service members at a higher risk of developing ME/CFS, however exploration of possible causal triggers in post-deployment populations has not been conducted. Identification of such factors is critical in defining adequate preventive strategies to mitigate the risk of ME/CFS and/or CMI as deployment-related adverse events.

ME/CFS is an area of immediate and ripe opportunity for contributing to the improved health and readiness of our troops and their family members, as well as addressing the unmet medical needs of service members incurring deployment-related illness.

THE BURDEN OF ILLNESS IMPOSED BY ME/CFS

ME/CFS is a chronic, disabling disease of unknown etiology which is defined as severe, incapacitating fatigue of at least six months duration that is not improved by rest and that may be worsened by physical or mental activity.[iii] This disabling fatigue is accompanied by: cognitive impairment (poor memory, concentration, information processing); unrefreshing sleep; widespread body pain; headaches; dysfunction of the autonomic nervous system (dizziness, fainting, inability to be in an upright posture, poor temperature regulation); sensitivity to light, sound, touch, odors and/or chemicals; flu-like symptoms; tender lymph nodes; sore throat; and/or gastrointestinal dysfunction. The hallmark feature of ME/CFS is post-exertional malaise (PEM), a worsening of symptoms following even very modest physical or mental exertion that can persist for days or weeks.[iv] While the exact pathophysiology remains undefined, recent advances in ME/CFS research have documented abnormalities in the immune, hematologic, endocrine, autonomic and central nervous systems, and deficits in mitochondrial metabolic respiratory and energy production pathways.[v] ***ME/CFS symptomology bears striking similarity to CMI described in veterans returning from the Persian Gulf, Iraq and Afghanistan conflicts***. Recent research has also indicated extensive biologic overlap between CMI and ME/CFS, with comparable evidence of post-exertional fatigue,[vi] impaired energy metabolism,[vii] autonomic dysfunction,[viii] cognitive impairment,[ix] and immunologic abnormalities.[x]

Given the significant health, safety and economic impacts of disabling chronic fatigue and ME/CFS on military service members, and the unique risks that military service members are exposed to, **we request that the Appropriations Subcommittee on Defense make ME/CFS an eligible research topic in the Peer-Reviewed Medical Research Program (PRMRP) targeted for biomedical research funding through the U.S. Department of Defense in Fiscal Year 2020.**

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[i] Wallin MT, Chapman JC. Evaluation of combat veterans. Forum. Dept. of Veterans Affairs Research and Development Service. Sept 2005.
[ii] Institute of Medicine. Beyond Myalgic Encephalomyelitis/Chronic Fatigue Syndrome: Redefining an Illness. Committee on the Diagnostic Criteria for Myalgic Encephalomyelitis/Chronic Fatigue Syndrome. Washington, DC: The National Academies Press. 2015.
[iii] ibid
[iv] Carruthers, BM, Jain AK, De Meirleir DL, et al. Myalgic encephalomyelitis/chronic fatigue syndrome: Clinical working case definition, diagnostic and treatment protocols (Canadian case definition). Journal of Chronic Fatigue Syndrome. 2003. 11(1):7-115.
[v] Valdez AR, Hancock EE, Adebayo S, et al. Estimating Prevalence, Demographics, and Costs of ME/CFS Using Large Scale Medical Claims Data and Machine Learning. Front Pediatr. 2018. 6, 412.
[vi] Li, M. et al. Self-reported post-exertional fatigue in Gulf War veterans: roles of autonomic testing. Front Neurosci. 2014. 7, 269.
[vii] Koslik HJ, Hamilton G, Golomb BA. Mitochondrial dysfunction in Gulf War illness revealed by 31-Phosphorus Magnetic Resonance Spectroscopy: a case-control study. PLoS One. 2014. 9, e92887
[viii] Craddock TJ, Fritsch P, Rice MA Jr, et al. A role for homeostatic drive in the perpetuation of complex chronic illness: Gulf War Illness and chronic fatigue syndrome. PLoS One. 2014. 9, e84839.
[ix] Rayhan RU, Raksit MP, Timbol CR, et al. Prefrontal lactate predicts exercise-induced cognitive dysfunction in Gulf War Illness. Am J Transl Res. 2013. 5, 212-223.
[x] Halpin P, Williams MV, Klimas NG, et al. Myalgic encephalomyelitis/chronic fatigue syndrome and gulf war illness patients exhibit increased humoral responses to the herpesviruses-encoded dUTPase: Implications in disease pathophysiology. J Med Virol. 2017. 89, 1636-1645