

- Celiac disease:** Celiac disease is recognized as one of the world's most common genetic autoimmune disorders, affecting approximately 1 percent of the global population and 1-2 percent of the U.S. population. Despite this recognition, most cases remain undiagnosed.¹ Current active service military policy discourages celiac disease diagnosis. Celiac disease diagnosis can disqualify a potential recruit from active service, and the diagnosis of celiac disease in an active service member can prevent deployment to austere environments or lead to discharge. Nonetheless, prevalence has increased markedly among active-duty military personnel², from 7.0 per 100,000 service members in 2000 to 87.9 per 100,000 in 2017. Notably, prevalence among women service members was 181.8 per 100,000.³ Currently, there is no medication or cure for celiac disease, nor is there an effective method for prevention. The only course of action to avoid intestinal damage is to follow a strict gluten-free diet, yet studies show that 30 to 50 percent of celiac disease patients on a gluten-free diet continue to report symptoms. Not only is living with celiac disease a daily struggle, it is also a disease that dramatically increases the mortality risk for other diseases – 6x increased risk for death from non-Hodgkin's lymphoma; 3x increased risk for death from liver disease; 2.6x increased risk for death from pneumonia⁴; and, 4x risk for small bowel cancer.⁵ Based upon TRICARE covered lives, it is estimated that an additional 77,000 veterans and family members may also suffer from celiac disease. Further research on celiac disease to find treatments and a cure will benefit military readiness in the following ways: 1) Increase the potential recruitment pool by mitigating celiac disease as a disqualifying factor, 2) Improve retention of active duty service members – particularly women, 3) Improve readiness by empowering deployment of celiac disease patients to all theaters, 4) Improve the lives of active-duty service members whose family members suffer from this common autoimmune disease, and 5) Lessen the burden on TRICARE and the U.S. Department of Veterans Affairs to treat veterans with celiac disease.

¹ Caio G, Volta U, Sapone A, Leffler DA, De Giorgio R, Catassi C, Fasano A. Celiac disease: a comprehensive current review. *BMC Med.* 2019 Jul 23;17(1):142. doi: 10.1186/s12916-019-1380-z. PMID: 31331324; PMCID: PMC6647104.

² Rubio-Tapia A, Kyle RA, Kaplan EL, Johnson DR, Page W, Erdtmann F, Brantner TL, Kim WR, Phelps TK, Lahr BD, Zinsmeister AR, Melton LJ 3rd, Murray JA. Increased prevalence and mortality in undiagnosed celiac disease. *Gastroenterology.* 2009 Jul;137(1):88-93. doi: 10.1053/j.gastro.2009.03.059. Epub 2009 Apr 10. PMID: 19362553; PMCID: PMC2704247.

³ Magee, Jared S. DO, MPH1; Lee, Rachel U. MD, MBA2. S1379 Celiac Disease on the Rise in the U.S. Military Population: Epidemiology and Impact on Operational Readiness. *The American Journal of Gastroenterology* 116():p S633, October 2021. | DOI: 10.14309/01.ajg.0000779048.09891.8c

⁴ Holmes GKT, Muirhead A. Mortality in coeliac disease: a population-based cohort study from a single centre in Southern Derbyshire, UK. *BMJ Open Gastroenterol.* 2018 Apr 17;5(1):e000201. doi: 10.1136/bmjgast-2018-000201. PMID: 29686881; PMCID: PMC5911148.

⁵ Ilus T, Kaukinen K, Virta LJ, Pukkala E, Collin P. Incidence of malignancies in diagnosed celiac patients: a population-based estimate. *Am J Gastroenterol.* 2014 Sep;109(9):1471-7. doi: 10.1038/ajg.2014.194. Epub 2014 Jul 22. PMID: 25047399.