

## New Studies Explore Connection Between High Stress Jobs And GI Disorders

ScienceDaily (Oct. 30, 2009) — In two new studies, presented at the American College of Gastroenterology's (ACG) 74th Annual Scientific meeting in San Diego, researchers explored the connection between high stress, high exposure occupations and long-term gastrointestinal disorders.

The studies, performed by the United States Navy and the State University of New York (SUNY), Stonybrook, examine the long term effects of infectious gastroenteritis (IGE) among active duty military and the interaction between gastroesophageal reflux (GERD) and mental health disorders among World Trade Center workers, respectively. Both studies will be the highlight of an ACG roundtable discussion being held on Tuesday, October 27, 2009 entitled: "Impact of Workplace Stress and Exposure on GI Disorders: Occupations that Take Guts."

### Infectious Gastroenteritis: Risk in Military Duty

Dr. Mark Riddle, of the United States Navy, led the study that examined functional gastrointestinal disorders (FGD) within the active military population and their connection to IGE. IGE can be caused by a variety of factors, including exposure to bacterial pathogens, protozoa and/or certain viruses, and active duty military personnel are at high risk during deployments.

Using electronic medical records obtained through the Defense Medical Surveillance System, Dr. Riddle and his colleagues identified 31,866 cases of FGD, including irritable bowel syndrome, functional constipation or diarrhea, and dyspepsia, in active duty personnel between 1999 and 2007. Matching each case to four corresponding non-FGD controls, the team calculated FGD incidence rates, as well as performed an assessment of differential risk for FGD associated with the type of IGE exposure.

The researchers found a significant association between IGE and all FGD, with the highest risk of functional diarrhea and irritable bowel syndrome (Odds Ratio: 6.26 and 3.72, respectively) and moderate risk with functional constipation and dyspepsia (Odds Ratio: 2.15 and 2.39, respectively). They also found that risk of FGD generally increased nearer to IGE exposure and that exposure to bacteria was associated with the highest risk overall. Importantly, 28.8% of active duty personnel studied still received FGD-related care two years after their initial diagnosis.

"In both historical and modern times, wherever and whenever military personnel have been placed into the austere environments of combat operations or humanitarian relief missions, the acute impact of IGE is present," explains Dr. Riddle. "Until now, the long term consequences of IGE exposure and the resultant consequences have not been documented or considered. Given the self-limited nature of IGE and effective antibiotic therapy, we tend to relegate these infections to mere 'battle-field nuisances'. However, our view of disease burden must extend beyond the deployment time horizon and consider the health of the sailors, soldiers, marines and airmen who return home and become veterans. Consideration of both the acute illness and chronic sequelae reinforce our need to enhance current strategies and develop novel solutions

to limit and prevent exposure at the outset."

### Effects of World Trade Center Cleanup Still Being Felt

Shortly after September 11, 2001, high frequencies of gastroesophageal reflux (GERD) and mental health disorders (MHD) were reported among exposed World Trade Center (WTC) responders. Dr. Douglas Brand and Dr. Yvette Lam were part of a team at the Long Island WTC Responder Center that examined the results of 697 WTC responders who were seen in 2005 to determine whether these conditions persisted over time and whether they were related to one another.

Among these responders, 41 percent of those examined had GERD, more than twice the 20 percent incidence rate among the general population. Furthermore, patients with GERD also had a higher prevalence of mental health disorders, including Post-Traumatic Stress Disorder and depression. In fact, patients with greater numbers of mental health disorders had progressively higher rates of GERD at their assessment: one MHD 47.27 percent, two MHDs 64.4 percent, 3 MHDs 69.7 percent, and 4 MHDs 72.2 percent.

The researchers also evaluated other environmental and lifestyle factors commonly associated with GERD, including smoking and obesity, but found no association with the increased frequency of GERD among WTC workers. However, length of exposure at the WTC site correlated with the diagnosis of both PTSD and GERD.

"Eight years after 9/11 we are still realizing the after-effects on those who responded and participated in the massive clean-up efforts" said Dr. Brand. "Shortly after this highly stressful and toxic exposure, the appearance of GERD characterized by high co-morbidity with mental health disorders, but no relation to obesity or smoking, suggests that mental health disorders may play an important role in the persistence of GERD among these workers. Thus, treatment of the underlying mental health disorder may be necessary to resolve the physical manifestation of GERD."

"Hopefully, these insights will help us better understand the mind-body connection and to treat other first responders following high-stress, high exposure deployments."

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