

Online Exclusives It's Time We Support Our Veterans

By Emily L. Cross, Ph.D., Director of Media and Communication, TecMed Inc. | April 12, 2016

Diabetes is a significant problem in this population and it's time to facilitate the development of technology solutions.

I will be the first to admit that I might be approaching this blog from a tiny bit of a biased place. I am a major supporter of the U.S. military and our veterans. As I tend to bend from a bit more of a liberal slant, I might not always agree with the policy that connects our soldiers and our government, but I truly admire our forces and am overwhelmingly grateful for the work and the sacrifices these men and women make for our country and our freedoms. To further potentially bury myself in a mountain of bias, I am proud to say my brother has served in the U.S. Army for over 20 years, my best friend is retiring from the Army after 20 years of service this May, and my fiancé served in the ranks of the Green Berets.

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As per usual, you might be asking where I am going with this and wonder how far I am going to have to stretch the bridge between the U.S. military and the medtech industry.

Let me explain.

In 2014, the U.S. Department of Veterans Affairs reported that nearly one in four men and women who served their country have diabetes. To put this in perspective, recent statistics suggest that approximately 9 percent of U.S. Americans have diabetes. When we discuss diabetes in the U.S., we tend to look at lifestyle, ethnicity, race, obesity, and age as factors, but rarely have I ever seen veterans discussed outside of VA publications. This is a bit mind-boggling as nearly 25 percent of our veterans are diabetic, a statistic that grossly outweighs the other diabetic indicators we have become so accustomed to hearing about.



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The VA does have some theories as to why there are such a disproportionate number of veterans with diabetes compared to the general population. Leadership at the VA report that veterans have a higher rate of obesity than the general population—often connected to the fact that VA patients tend to be older, have lower incomes, and have very limited access to high-quality, healthy foods. However, the VA is also currently examining links between type 2 diabetes and herbicides, such as Agent Orange, that were used during the Vietnam War.

Yet, there are also more war-related links between diabetes and veterans outside of Agent Orange bringing into question the impact of age on diabetes. Much of the current research on diabetes and military veterans is based on an aging population, which is the primary patient demographic at VA hospitals. However, new data highlights the increasing number of younger, healthier, and more active military personnel with diabetes. If lifestyle, race, ethnicity, and obesity are removed from the diabetic equation, what is the link between our young veterans and active military and high number of soldiers diagnosed with diabetes after deployments?

One theory connecting younger soldier demographics and diabetes is exposure to events connected to war. One example is trauma received in combat. Injuries and trauma to the pancreas seems to be a repetitive theme with veterans who served in the War on Terror due to vehicle accidents caused by artillery and roadside bombs. The National Institute of Health has found that when the pancreas is damaged, it can also damage beta cells—which causes type 1 diabetes.

PTSD may also be an indicator of increased risk for diabetes in U.S. veterans. A study published by the American Diabetes Association found that PTSD symptoms were independently associated to the occurrence of diabetes within the sample population (a population consisting of over 55,000 veterans). One of the links has to do with biological correlates, such as inflammation and endothelial dysfunction, of PTSD and diabetes. PTSD and diabetes also have a similarity in neuroanatomical functioning, which regulates food intake. Cortisol levels are another parallel. A stressful experience can activate the hypothalamic-pituitary axis, and those who show signs of diabetes or pre-diabetes have excess cortisol production—all which leads to central body fat distribution, insulin resistance, and other metabolic abnormalities. Individuals with PTSD also report having sleep disorders and shorter sleep durations, both of which have been found to be risk factors for type 2 diabetes. The study also noted that the use of medications for individuals diagnosed with PTSD has been reported to be associated with a higher risk of diabetes. Together, the researchers were able to link PTSD to diabetes, but as it was the first study of its kind and more research needs to be conducted to fill in some of the blanks, determining if diabetes was an effect of service or an after-effect of separation is necessary.

Diabetes is a major issue for our veterans. The disease is making a notable presence as it manifests as type 1 and type 2 in layer upon layer of generations. Our military veterans are in a place where the need for technology that promotes the health and well being of their diabetic counterparts is urgent. Current technology does not meet the needs of our general population and it is debilitating to our veterans. The public outcry by civilian patient advocacy groups, civilian patients, and civilian medical practitioners is only being recognized by a slight few. The 9 percent of our civilian population that struggle with accessing adequate technology has not made a loud enough cry for help. Perhaps it will be the 24 percent of our war veterans with diabetes that will bring attention to the fact that current medical technology does not answer to the needs of our diabetic population or military veterans. The need for improved medical technology and devices for our diabetic population is urgent and overlooked. I believe we need to fight for small businesses and small business friendly legislation to create a cleaner pipeline for new devices and technology to be brought to market to save lives. And in the end, we owe it to our veterans. They served and saved our lives. It is only right we fight to save theirs.