

## **DOD Funds Study of Omega 3 Benefit in Reducing Suicides**

*By Donna Miles*

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The Defense Department is funding a new study to determine if something as simple as drinking smoothies with high concentrations of the fatty acids found in fish oils can help to reduce suicides among veterans. The study will assess the effect of Omega 3 fatty acids on 350 volunteer participants who have attempted suicide or are considered to be at risk of doing so, said Bernadette Marriott, a Medical University of South Carolina professor who is the study's principal investigator.

The university is collaborating in the clinical trial with researchers from the Ralph H. Johnson VA Medical Center in Charleston, S.C., and the National Institute on Alcohol Abuse and Alcoholism, part of the National Institutes of Health. Ron Acierno, director of the post-traumatic stress disorder clinic at the Charleston VA center, will partner with Marriott as an onsite collaborator. The Military Operational Medicine Joint Program Committee is funding the study, and the Army Medical Research and Materiel Command's Congressional Directed Medical Research Programs Office will manage it. The test subjects, to be recruited over the next three years from the Charleston VA center and the local veteran population, will drink two child-size juice boxes of commercially available, smoothie-type drinks each day for six months, Marriott said.

Half the veterans will receive about 4 grams of Omega 3 fatty acids in their drinks each day, said Joseph Hibbeln, acting chief of NIAA's nutritional neurosciences section. This should elevate the concentration of Omega 3s in the group's blood to levels commonly found among populations of fish-eating countries such as Japan and Iceland. The other half of the test subjects, the control group, will receive placebos. Both groups will continue to receive the same mental health care services as before the study. Meanwhile, researchers will evaluate them as they begin the study and periodically over its course to assess their depression and anxiety levels and performance on cognitive tests, Marriott said. They also will take blood samples to measure Omega 3 levels.

The investigators will have no idea until after the study which test subjects received Omega 3 doses and which were in the control, Marriott said.

Based on previous studies in both animals and humans, Marriott said she expects to see much higher Omega 3 levels in the experimental group, with corresponding improvements in their mood and performance levels. Hibbeln has been a pioneer in linking Omega 3 deficiencies with depression and violent or impulsive disorders. For the past 20 years, he has advanced the theory that the brain, made up of fats and oils, depends on Omega 3 nutrients to operate properly and fully experience pleasure. He uses the analogy of a tree that grows deep roots, a sturdy trunk and abundance of leaves only if it's properly fertilized and gets the nutrients it needs.

The problem, he explained, is that the human body gets Omega 3s only through food and nutritional supplements. And **the typical American diet is low in Omega 3 fatty acids**-- with military populations consuming even fewer.

**Exacerbating the problem, Hibbeln said, is that their diets tend to be high in Omega 6s, the oils commonly found in French fries, chips and other processed foods.** Within red blood cells, Omega 6s are like "insurgents" who crowd out the few good-guy Omega 3s, he explained.

That double-whammy, he said, puts people at increased risk of suicide and other emotional distress. Assessing the blood of 800 active-duty military members who committed suicide between 2002 and 2008, Hibbeln said all had “profoundly low levels of Omega 3 fatty acids, by evolutionary and world standards.”

The suicide victims had particularly low levels of docosahexaenoic acid or DHA, an Omega 3 fatty acid concentrated in the brain. The levels were so low that, based on other studies, it could have elevated the service members’ risk of suicide by 75 percent, Hibbeln said. But equally troubling was that the control group in that study, which consisted of 800 active-duty service members, had similarly low levels of Omega 3s in their blood. Hibbeln recalled another era in military history when a nutritional deficiency caused an operational challenge. Only when the British navy began feeding lemons and limes – a great source of Vitamin C -- to its sailors did they stop suffering from debilitating cases of scurvy. Recognizing the potential benefits of Omega 3s, the Army Natick Soldier Systems Center in Massachusetts, has started infusing them into combat rations. Natick food scientists already have started introducing them into lemon poppy seed cake and a salmon in alfredo sauce entree. Hibbeln said he’s hoping the new study will show results like those in another he conducted that involved 49 patients who were admitted to an emergency room in Ireland for multiple episodes of “self harm.” In that study, all the patients were sent home from the hospital without psychotherapy services, but half received 2 grams of Omega 3 fatty acids to take each day.

The findings could have far-reaching impact beyond the military, Marriott said, noting that suicide is the 10th largest cause of death in the United States. “This study will have important ramifications, not just for veterans, but for all Americans,” she said.