



★ DoD Launches Healthy Base Initiative

“One of the main causes for release from active duty...is failure to meet height and weight standards,” says Assistant Secretary of Defense for Health Affairs Dr. Jonathan Woodson. Good health and fitness are important to readiness, but the loss of talent, experience, and training is also very expensive, adding about \$1.2 billion per year to the DoD budget in health care costs and lost duty days. Dr. Woodson also points out that 27% of potential recruits are too overweight to enter the military.

In an effort to boost the overall wellness of the total military community, including civilians, families, and veterans, the DoD created Operation Live Well (OLW). This ongoing program has branches across the services, within units and aboard ships, all aimed at fostering healthy lifestyles. In a press release of March 18, 2013, the DoD announced its selection of 13 pilot sites for the OLW’s yearlong demonstration project, the Healthy Base Initiative (HBI). Participating sites will be assessed on how well they promote good health: Do they provide workout space, restaurants and commissaries offering healthy food, and vending machines with healthy snacks? Do the bases provide nutritious school lunches and fitness programs? Are smokers encouraged to quit? Criteria even include whether the base has a commander committed to a healthy lifestyle. “Leadership must have a role in modeling behaviors that promote a healthy lifestyle,” Dr. Woodson said.

The HBI will also provide a hands-on look at service-level innovations. Best practices for creating a sustainable healthy lifestyle will be shared for implementation throughout the force.

Eleven of the pilot sites are military installations: Fort Bragg in North Carolina; Fort Sill in Oklahoma; Joint Base Pearl Harbor-Hickam in Hawaii; Sub Base New London in Connecticut; Mountain Home Air Force Base in Idaho; Yokota Air Base in Japan; Marine Corps Air Ground Combat Center/Marine Air Ground Task Force Training Command in Twentynine Palms, California; Marine Corps Base Quantico in Virginia; U.S. Coast Guard Air Station Cape Cod in Massachusetts; March Air Reserve Base in California; and Camp Dodge in Iowa. The other 2 participating sites are the Defense Logistics Agency, Fort Belvoir in Virginia; and Defense Health Headquarters in Falls Church, Virginia.

For more information on OLW and the HBI, visit <http://www.militaryone.com/source.mil/olw>.

★ Raising Awareness of Prediabetes

In 2006, only about 7% of people with prediabetes knew they had it, according to a study reported in the Centers for Disease Control and Prevention’s (CDC) *Morbidity and Mortality Weekly Report* on March 22, 2013. Unfortunately, in the intervening years, that number hasn’t changed much. When CDC researchers analyzed data from the National Health and Nutrition Examination Survey (NHANES), they found that only 11% of people with prediabetes were aware of it.

The researchers used data from 3 sampling cycles of NHANES: 2005-2006, 2007-2008, and 2009-2010. After excluding participants with self-reported diabetes and those with undiagnosed diabetes (fasting plasma glucose [FPG] \geq 126 mg/dL or A1C \geq 6.5%), they identified 2,603 partici-

pants with prediabetes (FPG 100-125 mg/dL or A1C 5.7%-6.4%).

Adult participants were classified as being aware of their prediabetes if they knew they had it or if they had been told by a doctor that they had prediabetes, borderline diabetes, impaired fasting glucose, impaired glucose tolerance, or higher than normal blood sugar.

The CDC emphasizes the importance of identifying people at risk for diabetes and encourages those at high risk to take steps to prevent it.

Awareness was < 14% across all population subgroups, regardless of level of health care access and other factors. People aged < 44 years were less likely to be aware of prediabetes, and awareness was higher among people who were overweight or who had a family history of diabetes.

The CDC emphasizes the importance of identifying people at risk for diabetes and encourages those at high risk to take steps to prevent it. The CDC-led National Diabetes Prevention Program—a public-private partnership of community organizations, private insurers, employers, health care organizations, and government agencies—supports evidence-based, lifestyle change programs that promote modest weight loss, good nutrition, increased physical activity, and problem-solving skills. The National Diabetes Education Program—a partnership of the National Institutes of Health and CDC—offers resources such as “Small

Steps. Big Rewards. Your Game Plan to Prevent Type 2 Diabetes” and “Just One Step,” which provide helpful tips for making lifestyle changes. Patients can assess their risk with a quiz at the American Diabetes Association (“Diabetes Risk Test,” http://www.diabetes.org/diabetes-basics/prevention/diabetes-risk-test/?loc=community_footer) or visit <http://www.cdc.gov/diabetes/prevention/prediabetes.htm> for more information.

★ **Gulf War Illness: Closer to a Solution**

More than 25% of the 697,000 veterans deployed to the 1990-1991 Persian Gulf War report a complex of symptoms that have been termed *Gulf War Illness* (GWI). The symptoms, which range from mild to debilitating, include chronic fatigue, heightened reaction to pain, and cognitive and gastrointestinal problems. The cause and pathology of the symptoms have been studied for years, but no research had definitively linked them to any of the nerve agents, pesticides and herbicides, or other toxic chemicals the veterans were exposed to. However, novel findings from a DoD-funded study by researchers at Georgetown University Medical Center in Washington, DC, may provide “validation for many veterans who have long said no one believes them.”

The researchers say they may have found a clue to the mystery: damage to the brain structures that facilitate perception of pain and fatigue; specifically, the bundles of axons that carry nerve impulses between different parts of the brain. Damage to the right inferior fronto-occipital fasciculus (IFOF) was significantly correlated with severity of pain, fatigue, and tenderness. That particular bun-

dle of axons also supports activity in the ventral attention network, which searches for unexpected signals in the surrounding environment that may be inappropriately interpreted as causing pain or being dangerous. Altered function in that tract may explain hypervigilance and distractibility, the researchers say.

The study involved 31 Gulf War veterans and 20 sedentary veteran and civilian controls. Participants completed a type of functional magnetic resonance imaging (MRI) called diffusion tensor imaging, which examines patterns of water diffusion in the brain to look for changes in the integrity of white matter that regular MRI scans don't show.

Dolorimetry, fatigue, and pain ratings were highly correlated with each other and with elevated axial diffusivity (AD) in cortico-cortical association and corticospinal tracts. The analyses identified 4 correlates of chronic multisymptom illness that differed significantly between subjects and controls: ordinal fatigue, McGill total pain scores, dolorimetry, and AD of the right IFOF. The right IFOF connects multiple frontal, sublobar, temporal, and occipital cortical regions involved in the perception of pain, fatigue, and cognitive dysfunction, including emotional and reward processing. The researchers say that a “striking” clinical observation was that chronic pain and fatigue fluctuated in parallel in the GWI participants.

Although their findings are preliminary, the researchers say the brain changes appear distinct from those of multiple sclerosis, major depression, Alzheimer disease, and other neurodegenerative diseases. The results of the study must be replicated, but for the first time, they

say, a potential biomarker for GWI may be on the horizon.

★ **Is Malaria on the Way Out?**

Malaria is responsible for more than 600,000 deaths per year. Unfortunately, the parasites that cause it are developing resistance to current antimalarial drugs. But according to an NIH-supported study published March 20, 2013, a new class of antimalarial compounds that target multiple stages of the malaria parasite's life cycle could change the way malaria is treated and perhaps prevent or even eradicate it. The compounds—4-(1*H*)-quinolone-3-diarylethers—are derived from a compound (endochin) used to treat malaria in birds. In laboratory studies using mice, the compounds were strongly active against *Plasmodium falciparum* and *Plasmodium vivax*, the 2 parasites that cause most human cases of malaria.

The new antimalarials target both the liver and blood stages of the parasite, as well as the forms that are crucial for disease transmission (eg, the gametocytes, the zygote, the ookinete, and the oocyst). The researchers from 16 institutions worldwide focused on the compound ELQ-300, which inhibited malaria parasites during the erythrocytic stage, when they cause symptoms in humans, as well as during the gametocyte and developmental stages in the mosquito, when the parasites are transmitted.

In studies using mice infected with the *Plasmodium* species, the infection was cured with treatment by ELQ-300. The study results suggest that the compound has good oral bioavailability, is metabolically stable, has potential as a once-daily dose for humans, and would be slow to engender resistance. ●