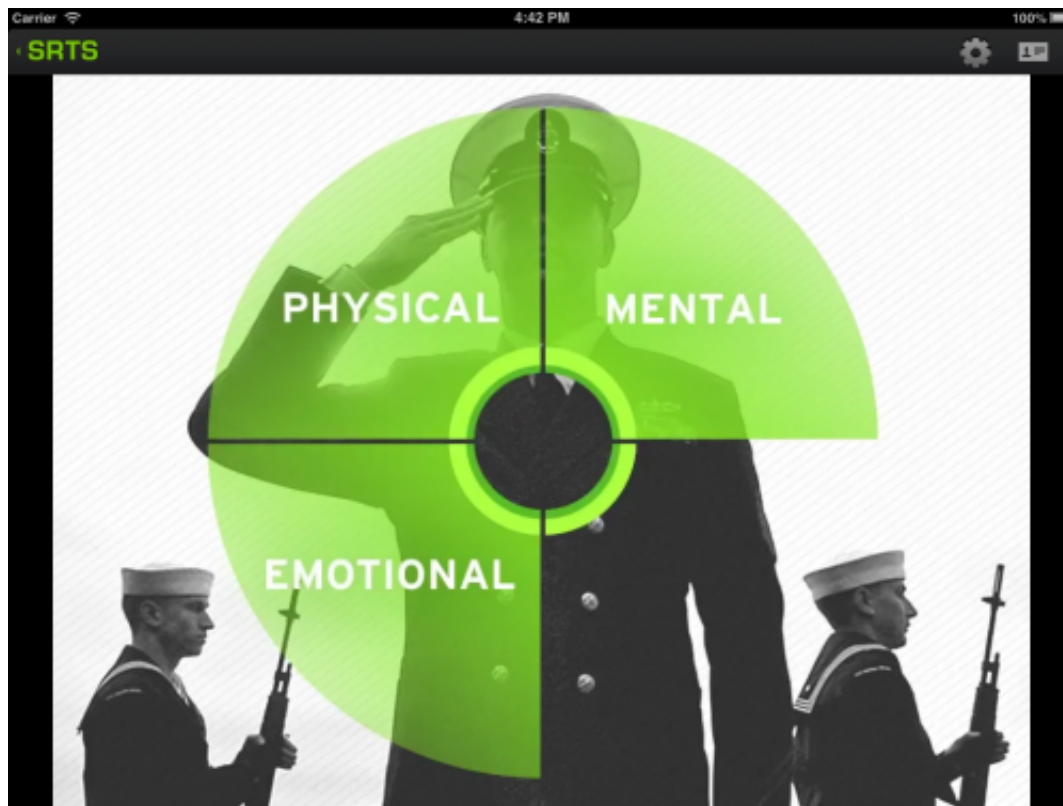# Navy creates iPad app for managing stress and fending off PTSD

March 7 2013

The Stress Resilience Training System App, co-funded by the Office of Naval Research and Defense Advanced Research Projects Agency, provides Sailors and Marines with information about stress and resilience and how to apply this knowledge to their missions. Credit: Image courtesy of Jonathan Lamon, Perceptronics Solutions Inc.

The Office of Naval Research (ONR) is co-funding an affordable, hi-

tech, solution for managing stress that could help prevent post-traumatic stress disorder (PTSD), helping warfighters and potentially saving billions of dollars in associated medical costs, officials announced March 6.

ONR, in conjunction with the Defense Advanced Research Projects Agency, is sponsoring development of the Stress Resilience Training System (SRTS), an iPad app training program that teaches Sailors and Marines to understand their stress responses and manage them by learning biofeedback techniques that work for their individual needs. The system will undergo field testing at the Naval Center for Combat and Operational Stress Control (NCCOSC) in San Diego in April.

Lessening the impact of PTSD to warfighters, the military and the nation is crucial. According to a February 2012 Congressional Budget Office report, 21 percent of military personnel returning from overseas contingency operations (OCO) in Afghanistan and Iraq suffer from PTSD. The cost to treat these individuals is nearly 3.5 times higher than for someone without PTSD or traumatic brain injury, which works out to close to $1 billion when multiplied by the total number of OCO patients.

"The SRTS app provides users with an easy-to-access tool that helps them build resilience toward stressful events so that when they encounter those events, the likelihood of experiencing PTSD or any other aftereffects from stress is reduced," said Cmdr. Joseph Cohn, program officer in ONR's Warfighter Performance Department and originator of the SRTS project.
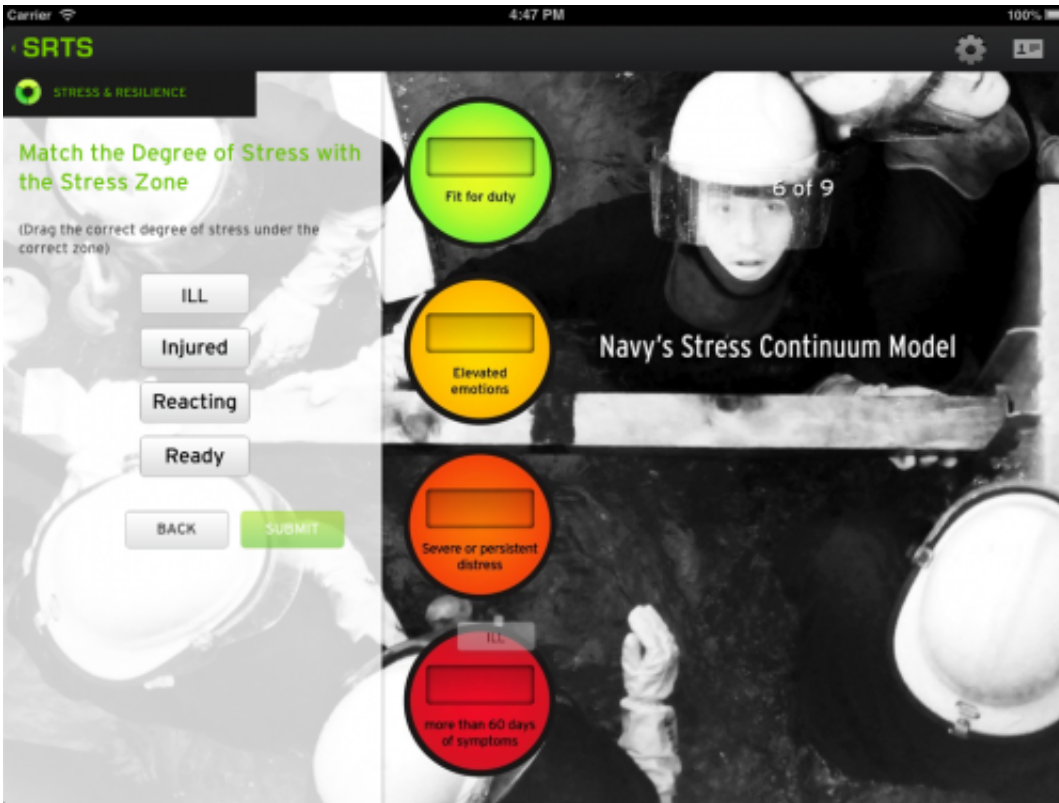
The Office of Naval Research is co-sponsoring development of the Stress Resilience Training System, an iPad app training program that teaches warfighters to understand their stress responses and manage them by learning relaxation techniques that work for their individual needs. Credit: Image courtesy of Jonathan Lamon, Perceptronics Solutions Inc.

Using only an iPad and a heart rate monitor clipped to one earlobe, the SRTS App comprises four sections: "Know How," which provides Sailors and Marines with information about stress and resilience and how to apply this knowledge to their missions; "Techniques," which explains how they can bring themselves into the best mental and physiological state possible to build resilience and achieve peak performance; "Games," which allows them to practice applying the resilience skills learned; and "Review," which helps them track their training progress.

The game-based app allows players to choose from several increasingly challenging training scenarios while the monitor records when the heart rate rhythm, also known as [heart rate](link) variability, becomes incoherent—a sign of stress. Through game-play, Sailors and Marines will learn which techniques, such as deep breathing or muscle relaxation, help them maintain or regain coherence, to manage their unique stress responses. Once learned, users can transfer these approaches to real-life situations.

"We're capitalizing on past research and making a leap that one way of managing PTSD lies in learning to more effectively manage your stress," Cohn said.

The SRTS is unique because it pulls together two proven premises—that novices and experts manage [stress](link) in different ways, so there's the potential for training, and that good training requires good feedback—and combines them with an already established distribution point: the NCCOSC, which focuses on promoting resilience and investigating best practices in diagnosing and treating PTSD.

Preventing PTSD is critical for mission preparedness and success, and it goes to the heart of one of the chief of naval operations' "Sailing Directions," that the Department of the Navy has "a professional and moral obligation to uphold a covenant with Sailors, civilians and their families—to ably lead, equip, train and motivate."

"The SRTS's development and operational evaluation would not have been possible without the funding we received from DARPA and ONR, who exhibited a willingness to take risks that yield significant S&T advances" said Dr. Gershon Weltman, vice president of Perceptronics Solutions, the prime contractor for the app's development.

  More information: To view a short video that explains the game-based system and shows it in action, go to: [goo.gl/lCyos](link)

Provided by Office of Naval Research