

WRIISC *Advantage*

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A Veteran's Story of
HONOR, COURAGE,
and
COMMITMENT

Sleep Research
at the WRIISC

Aspects and Treatments of
Sleep Disorders ▶

This edition of WRIISC Advantage focuses on sleep problems which are commonly found in the Veteran population. We hope the information in this newsletter is useful and informative to Veterans and health care providers alike.



Good Sleep is fundamental to Good Health

WE ARE INCREASINGLY A 24-HOUR SOCIETY and our sleep suffers the consequences. The effects of sleep loss are not limited to feeling tired during the daytime—there are medical, cognitive, physical, and psychiatric consequences to sleep loss and significant public safety concerns. When people do not get enough sleep, they are at risk for developing a range of health problems including obesity, poor sexual performance, cognitive decline, poor attention and concentration, depression, and an overall lower quality of life. Many motor vehicle accidents and workplace accidents are thought to be linked to inadequate sleep. Veterans often have a number of health problems such as depression, chronic pain, and Post Traumatic Stress Disorder (PTSD) that add to the likelihood of experiencing poor sleep. The most common forms of sleep disturbance in Veterans are *insomnia*, *sleep apnea*, and *sleep disruption* caused by *depression* and/or *PTSD*.

Insomnia is characterized by one or more of the following: difficulty falling asleep, difficulty staying asleep, waking up too early, and non-refreshing sleep. Approximately 40 percent of Veterans in primary care¹ have probable insomnia (versus 19 percent general community²).

Insomnia can be treated with both behavior modification and medicine. The most basic behavior modification recommendations for improving sleep are referred to as “*sleep hygiene*.” (See box, top right.) While these sleep habits are necessary for good sleep, they are rarely sufficient on their own to improve the sleep of individuals suffering from significant sleep disruption.

Cognitive-Behavioral Therapy for Insomnia (CBT-I) is the most effective non-drug treatment for insomnia. It consists of a cluster of behavioral techniques (see right), tailored to the individual, which help treat the

Examples of Good Sleep Hygiene

- ✓ **CREATE** a peaceful and comfortable sleep environment
- ✓ **EATING** - no large meals close to bedtime
- ✓ **CAFFEINE** - no more than 3 cups per day and none after lunch
- ✓ **ALCOHOL** - none within 3 hours of bedtime as it can contribute to waking up at night
- ✓ **AVOID** stimulating activities before bedtime - find ways to relax

underlying causes of insomnia. In large studies, CBT-I has been shown to be as, if not more, effective as medication and is currently considered the first line treatment for insomnia. VA Palo Alto conducted some of the early research that tested the effectiveness of several CBT-I components. Currently, VA Palo Alto is helping to develop a competency-based training program enabling licensed mental health professionals throughout the VA system to administer CBT-I.

Elements of CBT-I

- Basic information about sleep/wake regulation
- Stimulus Control Instruction
- Sleep Restriction Therapy
- Cognitive Restructuring
- Relaxation Techniques
- Sleep Hygiene

There are two broad types of medication for insomnia: those for short-term and those for long-term management of the problem. Medications may be

prescribed for short-term management of insomnia associated with specific, life events such as a death in the family. Benzodiazepines or benzodiazepine-like drugs, such as zolpidem or eszopiclone, are commonly prescribed for short-term use (just a week or two). These medications are not appropriate for use with chronic insomnia due to concerns about abuse and drug tolerance. Chronic insomnia is often managed with drugs such as anti-depressants because these often help lessen the root cause of the insomnia and permit good sleep habits to be formed.

Regardless of the choice of therapy, perseverance and sticking with a therapy that works is an important part of treatment effectiveness!

Sleep apnea is another very common sleep disorder, involving problems breathing during sleep. There are two broad types of sleep apnea: obstructive (blocked airway) and central (the brain blocks the drive to breathe).

Individuals with sleep apnea will stop breathing for a few seconds, wake-up, take a breath, and then return to sleep. This repeats from 100 (mild) to 400 (severe) or more times every night. Sleep apnea is associated with significant medical problems including heart disease, hypertension, obesity, and cognitive decline. VA Palo Alto has an ongoing study that is examining the effects of sleep apnea on the rate of cognitive decline in older Veterans.

Most cases of obstructive sleep apnea are treatable with a device that provides continuous positive airway pressure (CPAP) during sleep (see photo, right), keeping the throat open and allowing for normal breathing during sleep. While very effective, many people find wearing this device on their face during sleep uncomfortable and difficult to use. Nightly use of the CPAP is critical for the proper treatment of sleep apnea. Some forms of sleep apnea can be treated with surgical procedures that change the shape of the jaw or face, or remove excess tissue from the throat. Many people with sleep apnea are unaware that they have the condition. People with sleep apnea report spending enough time in bed but always feeling tired during the daytime. Sleep



apnea is also associated with heavy snoring. The only way to know for sure is to talk to your primary care provider about a referral to a sleep clinic, possibly at your local VA.

A visit to the sleep clinic will normally involve filling out sleep diaries and questionnaires and staying for an overnight visit during which your brain waves, breathing, heart rate, and muscle tone will be recorded. This information will be used to determine if you have a sleep disorder and if so, what type. The sleep study can also look at other disruptions in your breathing, heart, and brain activity. Veterans have added risk in that both PTSD and Traumatic Brain Injuries (TBI) can lead to significant disruptions in sleep. A large, collaborative study at all three WRIISC sites is trying to determine and understand the signature sleep changes that occur in PTSD and TBI. If you have concerns about your sleep, you should discuss them with your primary care physician. Sleep better, live longer, happier, and healthier. 🐣

¹Mustafa, et al. 2005, Sleep Breath; ²Ohayon, 2002, Sleep Medicine Reviews.



Dr. Wickwire, *Sleep Expert*, visits the NJ WRIISC

DR. EMERSON WICKWIRE, *Director of Behavioral Sleep Medicine and Co-Director of the Center for Sleep Disorders at Pulmonary Disease and Critical Care Associates in Columbia, Maryland*, visited the NJ WRIISC on January 23, 2011 and presented "Comorbidity of insomnia and sleep apnea and Cognitive-behavioral treatments for insomnia." Dr. Wickwire is board certified in both cognitive and behavioral psychology by the American Board of Professional Psychology and behavioral sleep medicine by the American Board of Sleep Medicine. He is one of only a small number of individuals in the world to hold these dual certifications. Dr. Wickwire was also a featured speaker at the National Conference the WRIISC hosted in Washington, DC in 2011. Given the prevalence of sleep issues in combat Veterans we see at the WRIISC, Dr. Wickwire's presentation was especially appreciated. WRIISC staff members look forward to future collaborations, as well as incorporating newly gained sleep knowledge into practice. 🐣

HONOR, COURAGE, & COMMITMENT: A Veteran's Story

The first things you notice about Lance Corporal (LCpl.) Nancy Schiliro is her beautiful eyes and the determination reflected in her bearing. She is a Marine, through and through. Her story is inspirational and one of resiliency.

As a 21 year old New Yorker, Nancy witnessed firsthand the events of September 11, 2001. Motivated to join the Marine Corps Reserves, she enlisted in April 2003 and was deployed to forward operating base (FOB) Al Asad, Iraq as an embarkation specialist from May 2004 to March 2005. In November 2004, she participated in Operation Phantom Fury, the second Battle of Fallujah. LCpl. Schiliro was injured in a mortar attack on her base in February 2005 where she lost consciousness and suffered multiple facial lacerations. After being taken to the medical facility on base and evaluated for a minor traumatic brain injury (TBI), she was treated and returned to duty.

Unfortunately, the blurriness in Nancy's right eye and headaches persisted even after she returned home. A civilian medical facility diagnosed her with "pink eye." She subsequently went to a Department of Veterans Affairs (VA) facility who found that her retina was completely detached and complicated by a spreading infection. Treatment to address the infection was not successful, and in July, she lost all vision in her right eye. She was then referred to surgical specialists and underwent four surgeries in an attempt to save her eye but these too were unsuccessful, and her eye was removed in November 2005.

While surgery solved the immediate medical concern, Nancy was faced with a difficult emotional struggle post surgery causing her to go into isolation. "I stayed by myself. I didn't want anyone to look at me. I wanted my eye back and I was mad at the world." She turned to prescription drugs and alcohol, and launched into a deep



MARINE CORPS LANCE CORPORAL NANCY SCHILIRO ENJOYS READING WHILE HER SERVICE DOG, SHELBY, TAKES A BREAK.

depression for over two years. Nancy was then referred by the VA to civilian plastic surgeons that specialized in eye prosthetics and received a new prosthetic eye.

Nancy's journey back to recovery began in 2006 after coming to the VA White Plains Vet Center. She met with a readjustment counselor, and then met with the psychologist, who "turned me around 180 degrees through pure persistence." It was the psychologist who facilitated Nancy's connection to an eventual employment with the Wounded Warrior Project.

Despite stopping the use of all drugs and alcohol and maintaining a healthy life style, balance issues, migraine headaches and phantom pain continued to plague her and impact her life on a daily basis along with continuing questions about her possible TBI and post traumatic stress disorder (PTSD).

In the course of learning her duties for the Wounded Warrior Project, Nancy decided to learn more about the services offered by organizations to Veterans which is how she learned about the War Related Illness and

Injury Study Center (WRIISC). She requested a referral to the WRIISC for a comprehensive clinical evaluation and subsequently came to the WRIISC at the East Orange Campus of the VA New Jersey Health Care System in 2009.

Nancy describes her evaluation at the WRIISC as being the most positive clinical experience she has had in VA. "I came to the WRIISC seeking answers about my injuries (TBI and PTSD), and left with ten times the information." She speaks of the enormous attention to detail she received during the evaluation and the meticulous follow up. Nancy notes amazement at being seen by an entire clinical team in one place. Nancy was also impressed with the thoroughness of the recommendations or "roadmap" she received at the WRIISC and the fact that at the end of her evaluation she got to meet with and hear from the entire clinical team. After being home for over four years, Nancy reflected that, "The WRIISC was the first VA program to test me for TBI and PTSD." She remains amazed by the ongoing and consistent follow up by the WRIISC and has nothing but praise for the entire team. Nancy successfully followed the "roadmap" she received.

Nancy became re-certified as an emergency medical technician at Westchester College in New York. Today,



NANCY SERVED IN IRAQ AND RECALLS HER DETERMINATION TO GO TO WAR.

Nancy works full-time for the Wounded Warrior Project in Columbus, Ohio.

LCpl. Schiliro separated from the Marine Corps in 2006 with an honorable discharge. Nancy still believes the Marine Corps lived up to all of her expectations. "I knew what I was signing up for. It was a time of war and I would do it all over again."

In May 2011, Nancy realized a lifelong dream by climbing the entire summit (19,400 feet) of Mount Kilimanjaro, Tanzania with two other wounded Veterans who are amputees. Dubbed "19K for the KIA," the climb was a fundraiser for Veterans that took five days to go up and two days to come down.

The irony of a "climb up" being harder, as is life, is not lost on Nancy. "I wasted three years in severe depression. If I can give Veterans out there any advice, I'd say get help as early as possible. And that includes the services of the WRIISC to get your answers and achieve a better quality of life. **The WRIISC changed my outlook about the quality of clinical care a Vet can receive at VA from a negative one to a positive one.**" Nancy continues to be an inspiration to all who know her and she continues to serve through her work with Veterans. 🐾

Around the WRIISC News



DC WRIISC

Cognitive Behavioral Therapy for Insomnia

AS DISCUSSED ON PAGE 2, insomnia can adversely impact many aspects of health and VA and WRIISCs continue to focus on research and effective intervention for sleep problems that are often prevalent in the Veteran population. Our goal at the DC WRIISC is to educate Veterans about potential sleep issues and their resolution, and to utilize clinical interventions that make a difference in health outcomes and quality of life. To support this goal, DC WRIISC neuropsychologist Kelly McCoy, PsyD recently completed the VA *Cognitive*

Behavioral Therapy for Insomnia Training Program along with VA providers from across the country.

Cognitive behavioral therapy for insomnia (CBT-I) (see page 2) is a brief, focused treatment offered at numerous VA Medical Centers to assist Veterans in improving their sleep quality and overall well-being.

Because insomnia often occurs in Veterans with co-morbid physical and mental health conditions, Dr. McCoy applies much of her CBT-I training in care for Veterans with chronic sleep difficulties associated with depression, anxiety, PTSD, chronic pain, and medically



unexplained illnesses. As a neuropsychologist, Dr. McCoy is keenly aware of the impact of chronic sleep disruption on attention, memory, and mood, and works with individuals to address the numerous factors that may interfere with their ability to benefit from restorative sleep. As sleep improves, attention, memory and mood often recover as well.

If you are interested in finding a CBT-I provider, please ask to speak with the Evidence-Based Psychotherapy Coordinator at your home VA.



NYASANU BARBEE, PHD

closer look at CBT-I, what it entails, the research that supports it, and its importance for Veterans with sleep disorders.

The NJ WRIISC recently hired a new staff psychologist, Nyasanu Barbee, PhD, who has also completed the VA CBT-I Training Program, making him the expert at the NJ WRIISC. The next edition of this newsletter will include an article by Dr. Barbee that takes a

NJ WRIISC

Welcome to Dr. Drew Helmer, our new Director

THIS PAST JANUARY, Drew Helmer, MD, MS, was named the Director of the NJ WRIISC. Dr. Helmer, an expert in deployment health, brings unique qualifications and experience to this position. Trained as a general internist, Dr. Helmer worked at the Michael E. DeBakey VA Medical Center in Houston, Texas since 2007. He was the lead clinician for Post-Deployment Health in Houston and for the South Central Veterans Integrated Service Network (VISN 16), Associate Director of



DREW HELMER, MD, MS,
NJ WRIISC DIRECTOR

Research for PrimeCare, and Assistant Director of the Neurorehabilitation: *Neurons to Networks VA Rehabilitation Research and Development Traumatic Brain Injury Research Center of Excellence*. Dr. Helmer also conducted his own funded research that focused on several issues important to Veterans including chronic pain, exposure concerns, depression and suicidal ideation, mild TBI, and sexual health concerns.

Prior to moving to Houston, Dr. Helmer was the medical director at the NJ WRIISC. During this time, he developed the basic structure for a national referral evaluation for Veterans with multi-symptom illness and was engaged in research and education efforts. Asked his perspective on re-joining and leading the NJ WRIISC team, Dr. Helmer said, "As soon as I set foot in the hallways of the WRIISC, I knew my decision to return to the WRIISC was the right one. I am honored to lead the NJ WRIISC team—the highest quality, most dedicated group of professionals I know of serving our Nation's heroes." Dr. Helmer's extensive post deployment clinical experience, research work, leadership abilities and vision will ensure the NJ WRIISC's continued success in providing top-notch services directed towards improving the lives of combat Veterans. Dr. Helmer looks forward to the days ahead: "Please keep your eye on us—you will see extraordinary things happen."

CA WRIISC


A Model for the Effects of Obstructive Sleep Apnea and Hypertension in Vietnam Veterans with Post Traumatic Stress Disorder

IN THE WINTER 2010 ISSUE, CA WRIISC announced an innovative project which examined the effects of PTSD, sleep disordered breathing, and genetics on cognitive performance in a group of older Veterans. Investigators also sought to learn about the relationship among hypertension and measures of oxygen saturation along with PTSD and Obstructive Sleep Apnea (OSA) and examine their effects on cognition. Results were recently published in the journal "Sleep and Breathing" (Sleep Breath DOI 10.1007/s11325-011-0632-8).

Older Veterans with PTSD frequently experience higher rates of OSA (69 percent) compared to the general population. PTSD and OSA are associated with cognitive impairment. OSA is linked to hypertension; thus, it is important to study the relationship among PTSD, hypertension, OSA and cognitive function.

Normally, severity of OSA is described using the apnea-hypopnea index (AHI), lowest oxygen saturation, or average oxygen saturation. Our investigators wanted to know if OSA and hypertension are associated with worse cognitive performance, namely *auditory verbal memory function* (set of cognitive abilities that are involved with learning information provided by the spoken word such as in a lecture or conversation) and *executive function* (a set of cognitive abilities that help connect past learning to present tasks such as planning and organizing) in this sample of older Veterans with PTSD. They also wanted to know if there was a threshold value of oxygen saturation that could be used as a predictor of cognitive decline and to study the relationship between OSA, hypertension, and cognitive impairment.

Cognition was measured using a battery of standard neuropsychological tests for auditory learning and memory and executive function. They found that Veterans whose blood oxygen levels fell below 85 percent scored worse on the auditory learning and memory test. They also found that Veterans whose blood oxygen levels fell below 80 percent scored worse on the executive function tests. These results suggest that it is important to provide treatment to Veterans with OSA to keep oxygen saturation levels above 85 percent during sleep to help preserve these two important areas of cognitive function. In addition, hypertension and AHI were both predictive of lower performance on tests of verbal learning and memory. Hypertension alone predicted lower scores on executive function tests, however, this study relied only on self-reported hypertension. Future studies will use more accurate measures of hypertension to determine the specific interactions between OSA, PTSD, hypertension, and cognitive decline in Veterans. We look forward to reporting on these studies' results in coming issues. For more information, contact:

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ABOUT THE COVER and page 4: Marine Corps LCpl. Nancy Schiliro and her service dog, Shelby (US Department of Veterans Affairs photo by Thomas Ullom, Medical Media, Chalmers P. Wylie VA Ambulatory Care Center, Columbus, Ohio, November 8, 2011.)

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