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**A WELCOA WHITE PAPER:**

# Sleep Wellness, Digital Detox and Mindfulness

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By Brian Luke Seaward, PhD  
Paramount Wellness Institute, Boulder, CO

May 13, 2015

## ABOUT WELCOA



The Wellness Council of America (WELCOA) was established as a national not-for-profit organization in the mid 1980s through the efforts of a number of forward-thinking business and health leaders. Drawing on the vision originally set forth by William Kizer, Sr., Chairman Emeritus of Central States Indemnity, and WELCOA founding Directors that included Dr. Louis Sullivan, former Secretary of Health and Human Services, and Warren Buffett, Chairman of Berkshire Hathaway, WELCOA has helped influence the face of workplace wellness in the U.S.

Today, WELCOA has become one of the most respected resources for workplace wellness in America. With a membership in excess of 5,000 organizations, WELCOA is dedicated to improving the health and well-being of all working Americans. Located in America's heartland, WELCOA makes its national headquarters in one of America's healthiest business communities—Omaha, NE. Check out our website at [welcoa.org](http://welcoa.org).

## ABOUT BRIAN LUKE SEAWARD PHD



Brian Luke Seaward is a renowned and respected international expert in the fields of stress management, mind-body-spirit healing and corporate health promotion. Additionally, he is an award-winning author, photographer, teacher, celebrated film director/producer and much sought after inspirational speaker. He currently serves as the Executive Director of the Paramount Wellness Institute in Boulder, CO.

Dr. Seaward can be reached via his website, [www.brianlukeseaward.net](http://www.brianlukeseaward.net).

## ABOUT WELCOA'S PRESIDENT, RYAN PICARELLA



As WELCOA's new President, Ryan brings immense knowledge and insight from his career that spans over a decade in the health and wellness industry. He is a national speaker, healthcare consultant, and has designed and executed award winning wellness programs. Known for his innovative and pragmatic approach to worksite wellness, Ryan looks forward to furthering the WELCOA mission and vision and continuing to position the organization for success for the future.

Ryan Picarella can be reached at [rpicarella@welcoa.org](mailto:rpicarella@welcoa.org).



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## Abstract Summary

Insomnia has quickly become a major health and wellness issue over the past decade with over 50 percent of the American population claiming to sleep poorly or not at all. Despite this fact, Sleep Wellness is, by and large, a missing component of many health promotion programs. Estimates suggest that over 50% of all insomnia cases are related to personal stress. Prevalent cultural changes including 24/7 lifestyles, on-demand accessibility, perpetual entertainment, non-stop social networking and seductive digital technology have only exacerbated the insomnia/stress problem in recent years. Moreover, digital toxicity and screen addictions are now health issues unto themselves. In addition to setting healthy boundaries and enforcing ideal sleep hygiene, the practice of mindfulness meditation is beginning to gain a strong foothold in corporate America as one more effective tool to decrease sensory bombardment, thereby helping to ensure a good night's sleep. Health promotion practitioners would be wise to include sleep wellness (not to mention stress management) as core elements of their wellness programming. Mindfulness training and stress management programming are both excellent ways to decrease digital toxicity and promote better quality sleep for all employees and their families.

## Introduction

America has a sleep problem, more specifically, a “lack of quality sleep” problem. According to both the National Sleep Foundation and the American Sleep Research Institute, over

half of Americans claim to not get a good night's sleep on a regular basis. Poor sleep habits, in the form of a host of sleep disorders, not only contribute to poor work productivity, but the consistent lack of sleep also contributes to absenteeism, presenteeism (showing up yet not doing anything) and life-threatening work-related accidents. Moreover, sleep deprivation is now known as a serious precursor for many chronic diseases. The newest factor to play into poor sleep wellness is America's collective infatuation (some experts use the word “addiction”) with smart digital wireless devices such as cell phones and tablets. The continual engagement with screen devices in the evening hours not only impacts the production of melatonin (the sleep hormone), but the hyper vigilance of social networking, video gaming and non-stop tweets and text messages also appears to rewire the brain for stress.

## Sleepless in America

According to various estimates cited by the National Sleep Foundation, over 50 percent of Americans claim to not get a good night's sleep on a regular basis, and the numbers are growing. Less than 30 percent of Americans get the suggested 7-8 hours of sleep and one estimate by the Center for Disease Control (CDC) suggests that 70 million Americans suffer from sleep disorders, which not only affect their daily functions (e.g., driving, work, relationships, eating habits, etc.), but also affect one's general health (Gholipour, 2013). Given these numbers, the CDC refers to current trends in mass sleep deprivation as a new public health epidemic. Sleep disorders

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are now thought to be associated with obesity, Type II Diabetes, cancer and several other chronic diseases. The direct connection appears to be a relationship between quality of sleep and the integrity of the immune system; poor sleep quality compromises immune function (Bollinger, 2010). The causes of insomnia are many (e.g., shift work, medication side-effects, sleep apnea, jet lag, pets, and noisy sleep partners to name a few). By most estimates, the single greatest cause of insomnia is stress. What impact does insomnia have on workplace productivity? According to data collected from a research survey by Kessler et al, (2011) the costs are substantial.

## Brain Function During Sleep

For decades the true purpose of sleep was merely supposition and intellectual speculation. Suggested reasons for the need for sleep included physical rest, cerebral relaxation, essential cell metabolism, and, on occasion, some even suggested the importance of dreamwork as a means of essential problem solving. While all of these may be true, it was Dr. Maiken Nedergaard and colleagues who made the discovery that during sleep, the brain's glial cells act to cleanse the brain tissue of toxins, amyloids and waste products, thus contributing to better memory and many other essential cognitive functions deemed critical in the waking hours (Lulu, 2013). Speculation suggests that by diminishing brain cell restoration during sleep, cognitive function during waking hours is greatly compromised with both short-term and long-term health implications.

## Not All Sleep Deprivation Is Created Equal

According to sleep experts from the National Sleep Foundation, there are several classifications of insomnia, revealing the complexity of this phenomenon:

**Acute insomnia (also known as Transient Insomnia)**, lasting days, is most commonly triggered by a serious, stressful life event and usually resolves itself without treatment.

**Intermittent Insomnia**, a condition where sleep patterns are interrupted for weeks on end, either having trouble falling to sleep or staying asleep. Causes most commonly are associated with chronic stress, but may involve other reasons such as jet lag, menopause symptoms or muscle pain.

**Chronic Insomnia** describes a person who has repeated difficulty sleeping at least three nights a week for several months. The causes of chronic insomnia are many, including chronic stress.

**Others.** Additional types of insomnia include “onset insomnia” where people have difficulty falling asleep and “maintenance insomnia,” best described as the inability to stay asleep.

**Emerging Classifications.** New to the list of insomnia classifications since the introduction of sleep prescriptions (e.g., Ambien, Lunesta, and Rozerum) is called “Rebound Insomnia” (a recurrence of sleeplessness when people go off their sleep prescriptions).

## Stress in America

In February of 2015, The American Psychological Association (APA) released their annual report on stress. The report titled, *Stress in America: Paying with Our Health*, cited a continued trend of psychosocial stressors plaguing Americans. While stress levels decreased slightly when compared to 2013, data revealed that nearly half of Americans cite stress as a major (negative) factor in their lives. Economic issues and financial difficulties dominated the list of common stressors. Noted skills to cope with stress were less than promising, including alcohol, cigarettes, drugs and other means of avoidance (APA, 2015). Implicit in the title of their report is the continued impact of chronic stress on health and well-being and the increasing healthcare costs associated with stress-related disease and illnesses. National Public Radio, in collaboration with the Kaiser Health and the Harvard School of Public Health, also published a report at the end of 2014 with similar findings (NPR, 2014). Noteworthy is one data point stating that 70% of people polled stated that they sleep less than usual. New to the list of stressors was the impact of negative news (media stress), as well as the invasion of high tech devices into the daily routines of Americans.

## Digital Toxicity

It has been said that the 21<sup>st</sup> century life is a culture of distractions: 24/7 accessibility, on-demand entertainment and digital voyeurism can all lead to sensory overload and digital burnout. More than the stimulation from the portals of digital information and entertainment are the energetic vibrations that greatly affect our health. Thomas Edison claimed

that, “Using electric light is in no way harmful to health, nor does it affect the soundness of sleep.” He was wrong! In no uncertain terms, America’s love affair with screen technology has added to the fray of a sleep-deprived nation. Two aspects deserve attention with regard to the connection between digital toxicity and a poor night’s sleep.

## 1. Melatonin Production

Melatonin is affectionately called the “sleep hormone.” It is produced by the pineal gland, a tiny, pinecone-shaped part of the brain that is found in the center of the skull and receives information from the optic nerve with regard to ambient light. As natural light (and temperature) diminishes, the body’s circadian rhythms, many of which are regulated by the pineal gland, gear the body for sleep in the evening hours. Artificial light is proven to interrupt one’s natural circadian rhythms, thus affecting the production of melatonin (Hendrick, 2011). New to the findings of the relationship between artificial light and melatonin is recent data regarding the blue spectrum of light from screen devices that users track directly into the eyes (versus overhead lighting). Results reveal that screen light significantly decreases melatonin production (Figuro, et. al, 2011, Kresser, 2013). Some researchers warn that it is not enough to merely enforce healthy boundaries with the use of digital technology in the evening hours to allow the pineal gland to do its work. Research from Europe reveals that the Extremely Low Frequencies (ELF’s) not only from digital devices that use WiFi, but the WiFi router itself emits a vibration that compromises the efficacy of the pineal gland. (Brendal H. et. al, 2000). Recommendations included to turn off the WiFi Router an hour, if not several hours, before bedtime.

## 2. Monkey Mind and Digital Neuroplasticity (Brain Function During Waking Hours)

Any serious athlete (or coach) will tell you that the more you practice a skill (gross motor or fine motor), the better you become at it. In the field of Kinesiology, the term is called “specificity of training” (Astrand, 2003). This fact has not gone unnoticed in the field of video gaming where international events now have a competitive Olympic air to them. Internet surfing, engaging in 24/7 social networking, texting, etc., trains the brain in ways identical to the Olympic athlete involved in competitive sports conditioning. The new term to describe the neurological processes of repetitive men-

tal activity is called “neuroplasticity;” a rewiring of the brain’s neural tissues to respond to the desired stimuli. The subject of the importance of brain function has been a fascination for millennia, but since the invention of Magnetic Resonance Imaging (MRI), and now functional Magnetic Resonance Imaging (fMRI), the fascination with brain research has increased exponentially in the past 20 years. What we are learning is both fascinating and problematic with regard to human behavior in the 21<sup>st</sup> century.

Susan Greenfield, a professor of synaptic pharmacology at Oxford University cites a concern regarding how ten to twelve hours a day of computer interface will negatively affect neuronal connectivity; always being engaged in neural stimulation keeps the brain engaged in a low level of fight or flight response. While Greenfield and others are alarmed with sensory input and brain physiology, still others are concerned with people’s emotional maturity, intuition, psychological reasoning, memory processing and moral compass (Dossey, 2009).

Even when people take vacations from work, they are still working. Known as the electronic leash or collar, it is not uncommon to find people plugged into Wi-Fi technology at or near National Park campgrounds, a place people once went to get away from the trappings of modern civilization (Seigler, 2010). Work-life balance has become elusive, as the boundaries between work and home have become virtually non-existent. Work-related emails, texts and other forms of communication after hours ultimately seep into the evening hours, disrupting one’s sleep routine.

## Digital Overload, Digital Stress, Digital Toxicity

In a 2010 series of articles for *The New York Times*, technology investigative reporter Matt Richtel noted that on average, people check email up to 37 times an hour (this doesn’t include text messages). Furthermore, some people feel an urge to respond to emails immediately and feel guilty if they don’t, adding to a new phenomenon called “Techno-stress.” Perhaps for this reason or what is now called “screen addictions” (tied to FOMO, the fear of missing out), fewer than half of employees nationwide leave their desk/workstation during lunch hour, according to a Manpower survey, leading to higher stress levels and fatigue (Marquardt, 2010).

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According to a recent Harris Interactive poll, respondents said that more than 50 emails per day caused stress, many using the phrase “e-mail stress” to explain their frustrations. According to Pingdom, a web-monitoring firm, over 90 trillion emails were sent over the Internet in 2009, with an average, of 247 billion emails per day (Swartz, 2010). Although more current data is still being analyzed, it is assumed these numbers have increased dramatically since.

Research from the University of California at Irvine reveals that the constant interruption of emails triggers the stress response, with the subsequent release of stress hormones affecting short-term memory (Richtell, 2010). And if you ever wondered if people, perhaps even yourself, seem addicted to checking emails, voice mails, or Tweets, the addiction to screen devices is more than pure speculation. Research shows that the visual or auditory receipt of emails and tweets is accompanied by a release of Dopamine. Dopamine, a “feel-good” neurotransmitter, is associated with chemical addictions. In the absence of dopamine release, boredom ensues until the next fix (Richtell, 2010). Interestingly enough, even when people think they hear their device go off (known as phantom pings) or hear other people’s devices go off, they get a dopamine release in the anticipation of a message (Turkle, 2014). The perfect storm of stress is the overwhelming amount of information available, the distractive nature of being plugged in 24/7, and a sense of alienation leading to more personal stress. (Turkle, 2012).

What effect does digital overload have on memory? Research conducted by Bill Thornton at the University of Southern Maine and published in the journal *Social Psychology* revealed that people who had their cell phones within easy reach were less efficient with a given task than those who did the same task without the presence of their cell phone (Freidman, 2014). Smart phones not only distract one’s attention, but the constant anticipation of social media messages derails memory processing and perhaps other cognitive functions, keeping the brain in an alert state, one in which is hard to turn off when preparing for sleep.

## The Art and Science of Meditation

Sages and wisdom keepers over the span of human history remind us that the primary purpose of meditation is to silence (domesticate) the ego (a continual source of mental distractions), as so eloquently stated in the Chinese proverb, *When*

*the student is ready the teacher will come.* By maintaining a sense of mental discipline, one is able to focus one’s attention on the important matters at hand. As a practice of mental training, meditation, in one form or another, has been practiced by various cultures around the planet over millennia. Today, not only is it a core training modality of Olympic athletes, it is becoming an essential wellness behavior for corporate executives as well. The introduction of Transcendental Meditation (TM) to the western world via the Beatles in the late 60’s soon became a subject of curiosity by physicians in the United States including Herbert Benson, MD, who renamed the practice “The Relaxation Response” (Benson, 1974). Since that time, thousands of peer-reviewed, scientific studies have been published with overwhelming evidence to substantiate that the practice of mental training is undeniably beneficial to mind, body and spirit (Grossman, 2004). An overview of data reveals that meditation (either TM or mindfulness) improves sleep quality, decreases Cortisol levels, decreases chronic pain, increases immune function, decreases blood pressure, increases mental acuity and improves overall mental well-being.

Perhaps the most intriguing research to come to light in the past several years has been conducted by Richard Davidson at the University of Wisconsin (Madison). Using fMRI on Tibetan monks who arguably are well-practiced meditators, Davidson and colleagues were able to substantiate the phenomenon of neuroplasticity of brain tissue (Davidson, 2003, Ricard and Davidson, 2014). Simply stated, through meditation, one can train the brain (and body) to relax (Horrigan, 2005). The good news is that you don’t have to be a Tibetan monk to demonstrate neuroplasticity. With a regular practice, anyone can acquire the benefits of meditation. Daily practice is considered essential, however.

In tandem with the proliferation of digital toxicity, mindfulness meditation (more so than TM) has become quite popular in the mainstream culture and perhaps more importantly in the corporate work setting. (Pickart, 2013, Gelles, 2015, Bennington, 2013). As a mental training tool used to minimize distractions (both internal ego-based thoughts and external stimuli), mindfulness is quickly becoming the quintessential tool to cleanse the mind and detox from the daily tsunami of information overload and digital toxicity. As such, mindfulness training is considered an essential life skill for the 21st century. Despite scores of research studies, the practice of meditation as a wellness behavior has yet to be fully embraced in health promotion programming.



## The Art of Mindfulness: Digital Detox

Mindfulness is the art of living in the present moment through the eyes of non-judgment (turning off the voice of the ego). At best, through mindful living, one learns not only observe one's thoughts, but to observe oneself observing one's thoughts (this is considered the epitome of ego detachment). Detachment is not as easy as it seems given the ego's influence to constantly direct our thoughts toward past events (guilt), future events (worry) or possible events. Remember, it is the ego that trips the fight or flight response. Mindfulness helps deactivate this switch in non-threatening times.

As a meditation practice, the roots of mindfulness date back several millennia to the beginnings of Buddhism. The introduction of mindfulness meditation in the United States during the 1970's is often credited to Thich Nat Hanh, a Vietnamese Buddhist Monk. Today mindfulness is taught and practiced by thousands of people in various demographic groups and has become very popular in the corporate business world all with one purpose in mind: to reduce stress through the achievement inner peace.

Several decades ago the concept of mindfulness meditation gained a more rudimentary western approach as a simple, non-sectarian relaxation technique for pain management through the efforts of Jon Kabot-Zinn at the University of Massachusetts Medical School, who taught mindfulness meditation to patients with chronic pain. His success with pain management quickly spread throughout the field of mind-body practitioners. This eventually led Kabot-Zinn, the author of the highly acclaimed book, *Full Catastrophe Living*, to create a structured, systematic program to teach other instructors his method of success. He calls it Mindfulness-Based Stress Reduction or MBSR. Anyone who has ever taken a mindfulness meditation workshop with Kabat-Zinn knows the raisin exercise. For what seems like hours, you hold, smell, study, gaze and then finally taste and chew a raisin, all with the utmost awareness (some people use chocolate). The underlying premise of this mindful exercise is that as you become more aware of your thoughts and actions, you can control your thoughts (through detached observation) to the point where you are less stressed. Many instructors sum up mindfulness in three words: *attention, intention and attitude*.

Today MBSR is taught by certified instructors in over 250 hospitals nationwide as well as many corporate wellness pro-

grams and the US Army. Mindfulness as a relaxation technique has been well researched at Harvard, UCLA, Stanford and perhaps is most recognized through the studies of Dr. Richard Davidson at the University of Wisconsin-Madison. Evidence-based outcomes reveal dramatic decreases in pain sensation, and through fMRI data, have led to the exploration of neuroplasticity of brain tissue. Since Kabot-Zinn began his Mindfulness Based Stress Reduction (MBSR) program in 1979, it is taught as a structured 10-session (31 hours) group session over an 8-week period with suggested daily home practice. Some programs like Duke Medical Center add an additional 2 hour orientation program. The typical cost for this program is about \$500, and it is offered as a sliding scale fee service. As described in the MBSR workbook, the basics of MBSR include the following:

1. **Sitting Meditation:** Sitting still, back straight, eyes closed, with an undivided focus on your breathing.
2. **Body Scan:** Moving your awareness from the top of your head, down to your neck, shoulders, torso, arms and hands, legs and feet.
3. **Gentle Yoga (stretching):** This aspect includes a series of simple hatha yoga asanas performed from a lying down position.
4. **Walking Meditation:** Walking (preferably outside) for a specific duration being mindful of your foot placement, the sights, the sounds, the smells, etc.
5. **Loving Kindness Meditation:** Enhancing one's sense of connection to others and the world by observing one's thoughts with an intention of loving kindness to people, events, etc. to create a more harmonious living environment. This meditation is often done repeating an affirmation phrase such as "May you be happy."

The MBSR program offers both an informal practice and a more formal practice. The informal practice includes a free-floating awareness to be mindful in all daily activities from breathing and eating to walking, sitting even washing the dishes. The formal practice invites participants to maintain a specific structure to their practice (e.g. a specific time of day) by beginning with a mindful morning check-in followed by a five-minute mindful breathing exercise, a body scan and a routine of mindful gentle yoga. This formal

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practice (a single-focused effort rather than a multi-tasking approach) also encourages the participant to keep a journal of all the experiences through these activities to help guide and deepen the practice. Participants are encouraged to continue the formal practice until it becomes a second-nature routine.

Like all other forms of meditation, the benefits attributed to MBSR include an increased ability to relax, a decrease in physical pain, an enhanced ability to cope with physical pain, increased quality of sleep, decreased self-criticism, increased self-compassion, decreased resting blood pressure and heart rate, an increased ability to create and sustain an improved sense of self-esteem, and an increased ability to respond, rather than react, to stressful situations. The practice of mindfulness is taught as an essential life skill rather than a specific means to achieve a single result or goal.

## Summary

Corporate wellness programs have made significant inroads with some aspects of health promotion programming, most notably cardiovascular health and nutritional behaviors. Scant attention, however, is paid to other crucial elements of health including sleep wellness, stress management and addictive behaviors including those associated with screen devices. All of these significantly impact not only the health of individuals, but the overriding cultural health of the organization. Health promotion practitioners must consider a more holistic approach to wellness for both short-term and long-term health and well-being. ★

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