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From the Laboratory to the Desk: Combating the Dangers of a Sedentary Lifestyle

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(AWIS Member since February 2015)

Are You Sitting Down For This?

Throughout much of history, humans lived active lifestyles. Humans walked distances daily and continuously, and farmed, hunted, or gathered food. Homes were built using manual labor versus electric power. Having an active lifestyle was not a choice, but rather a means to survival. Today, in twenty-first century America, this lifestyle has changed drastically: we have become more sedentary than ever. Our careers and leisure activities have together fostered, to some degree, prolonged sedentary behavior. Our everyday work lives may involve more than seven hours of sitting in front of a computer or sitting in long meetings. We sit while commuting back and forth to work, whether by car or by public transportation. Our leisure activities may provide an extension of this sedentariness as we sit or lounge in front of the television, our smartphones, and notebooks, or even in front of our home computers (again) to read, talk, text, and/or do more work. For those with desk jobs, a standard work week can entail nearly eighty percent of the daytime spent sedentarily, and when combined with time spent in slumber, this sedentary time increases to nearly ninety-five percent. Although it is easy to assume that a sedentary work life is safer and simpler, nothing could be further from the truth.

As a young and energetic scientist, I began my career working in multiple laboratories on multiple research projects. I was constantly on my feet moving from lab to lab. Within each lab, I moved from the bench to the incubators on the next floor, to the hoods, to the cold room, etc. I was a whirlwind of energy. Even better, my colleagues and I would spend our afternoon breaks out jogging or walking around campus, or engage in team sport activities together after work. Each day was filled with physical movement of some sort and to some degree. Combined with graduate school and continuous, hard-core laboratory training, the physical activity not only complemented the intellectual challenge, it invigorated it. After completing graduate school and moving on from the laboratory into an administrative career trajectory in science, my active lifestyle went from robust to barely there. My days involve long hours sitting at my desk reading and writing, I walk from my office to one room to sit in a two-hour meeting, then walk to the next room to sit in the next two-hour meeting. I eat lunch at my desk in order to have my reports completed by that 1 p.m. deadline. I drive to work sitting in my car and back home sitting in my car. By a day’s end, I’ve spent nearly half of my waking hours sitting. My new sedentary lifestyle didn’t seem so bad for many years, until one day reality struck me from behind, and hard. Following a life-threatening experience with pregnancy loss, I underwent genetic testing for thrombophilia, a blood-clotting disorder. Once the results were in, the doctor gave me the news: I carry a gene that puts me at risk for venous thrombosis. Aside from blood-thinning medication, the best and most natural way to counter blood-clot formation would be to drink plenty of water, eat plenty vegetables and fruits, and yes, exercise. Needless to say, that day changed my life forever.

“Sitting is the New Smoking”

Medical researchers and experts have recently paralleled the dangers of sedentariness with the dangers of smoking, which has led to the coining of new phrases such as “sitting is the new smoking” and “sitting disease.” James Levine, MD, PhD, the director of the Mayo Clinic–Arizona State University Obesity Solutions Initiative, takes credit for inventing these token phrases, specifically in his book entitled Get Up!: Why Your Chair is Killing You and What You Can Do About It (2014). In his book, Dr. Levine emphasizes the fact that sedentary lifestyles work slowly to our detriment by dismantling our series-circuited trifecta of mind, body, and soul. Should we fail to engage this trifecta as a singular unit, we fail to achieve overall well-being. Lack of physical activity affects our energy levels and subsequently compromises optimal function of the mind and the soul. Unless physical activity is incorporated into our daily lives, the mind-body-soul trifecta remains in a
state of consternation and dysfunction. The old cliche of “the whole is greater than the sum of its parts” stands at its pinnacle of certainty.

Although it is quite plausible that sedentariness provides us with an opportunity to enhance our neuroplasticity, or exercise our “brain muscles,” by means of reading, writing, analyzing, and interpreting information, many of us, including myself, have either experienced or seen first-hand the detrimental effects associated with depriving the rest our bodies from physical exercise. Sedentary lifestyles welcome fat storage and blood-sugar overload, and our heart muscles remain at their resting rates for days, weeks, or even months as we fail to engage in aerobic exercise. Obesity-related illnesses begin to manifest, yielding an overall decreased quality of life. It’s not groundbreaking news that lack of exercise serves as a gateway to myriad health issues. For several years, a vast number of health articles have been written and commentaries broadcasted exposing the health dangers and hazards of a sedentary lifestyle. A recent study conducted by researchers at the Institute for Clinical Evaluative Sciences in Toronto revealed that an overall lack of daily physical activity is strongly correlated with an increased risk of mortality by means of cancer, Type-2 diabetes, and cardiovascular disease (Biswas et al., 2015).

Women suffer especially from higher incidences of reproductive/gynecologic cancers, such as endometrial cancer, the most common gynecologic cancer in the United States, as a result of prolonged sitting time (Moore et al., 2014). Further, sedentary women bear an exceptionally higher cancer risk than their male counterparts. For example, compelling statistical evidence from the American Cancer Society Cancer Prevention Study II Nutrition Cohort revealed that women who spend their leisure time sitting face a significantly higher risk of total cancer, whereas men face no such risk from leisure-time sitting (Patel et al., 2015). The force behind this phenomenon is (you guessed it) estrogen. Estrogen is implicated in many cancers and benign tumors in both men and women. Thus, it is especially important for women to understand the importance of an active lifestyle, and to take action.

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Rachele Hendricks-Sturrup, a biological scientist, legal/policy analyst, and AWIS member, holds a Bachelor of Science degree in Biology from Chicago State University, a Master of Science degree in Pharmacology and Toxicology from Michigan State University, and a Master of Art degree in Legal Studies from University of Illinois--Springfield. Her work experience involves many years as a biomedical researcher within Chicago State University’s Department of Biological Sciences and Argonne National Laboratory’s Biosciences Division, as a pharmaceutical industry environmental microbiologist, and as a legal/compliance analyst for biomedical research at the University of Miami and the MEDNAX Center for Research, Education and Quality. An environmental/health writer and enthusiast, Hendricks-Sturrup resides in Hollywood, Florida, and serves her community through elected board-membership of Hollywood’s Green Team Advisory Committee, through which she and other committee members make recommendations to the City Commission on the development and promotion of the city’s environmental goals.

References