

White Paper

Health & Productivity in the Workplace

From LifeSpan

Sedentary lifestyles are becoming more commonplace for busy professionals around the world. Researchers are finding the effects of sitting for hours a day are not only harmful to the body, but also on the brain. LifeSpan is bringing awareness to the harmful effects of sitting and the benefits that can be associated with getting up and moving throughout the day. There are several simple healthy lifestyle changes you can make to improve your overall health, productivity and happiness in the workplace.

From Head to Toe: Your Body and Sitting

Are you sitting right now? You probably are. Most people spend at least six to eight hours a day sitting behind a desk at work unless they have a treadmill desk. Then they go home and sit some more, usually in front of the TV or reading a book. This is called a sedentary lifestyle. According to Karen Basen-Engquist, Ph.D., professor of Behavioral Science at MD Anderson, studies now show that sitting for several hours a day puts a person's health at risk even if they engage in a regular exercise program.

The health hazards² and risks associated with sitting all day are numerous. Take a moment to review the following information and learn what sitting does to your joints, muscles, and every part of your body. Then determine what you can do to make changes in your work environment to decrease this stress. Remember, your body is the only one you will ever have...treat it with love and respect.

Organs

- Heart damage: sitting too much is linked to high blood pressure and elevated cholesterol. People with the most sedentary time are more than twice as likely to have cardiovascular disease.
- The pancreas produces insulin, a hormone that carries glucose to cells for energy. But cells in idle muscles don't respond as readily to insulin. An over-productive pancreas can lead to diabetes and other diseases.
- Studies link sitting to a variety of cancers such as colon, breast, and endometrial cancers. This is unclear, but could be due to excess insulin in the body and/or a decrease in natural antioxidants due to sitting.

Muscles

- When you sit too much and slump in a chair you don't use your abdominal muscles. Abdominal muscles will be stronger if you stand, move, and sit up straight. Strong abs help support your back which in turn can decrease back pain.
- Your glutes can get used to doing nothing and become limp and soft. On the other side of the coin, strong glutes increase stability and strength and are important in the aging process.

Upper Body and Back

- Ever experienced a "foggy brain"? If you sit for a long time, everything including brain function slows down. Muscles in motion pump fresh blood and oxygen through the brain and trigger the release of beneficial chemicals.
- Sitting for long periods often causes a person to crane the neck forward toward the keyboard or tilt the head to cradle a phone while multi-tasking. This can strain the cervical vertebrae and lead to permanent imbalances. Since the neck works together with the shoulders and back, any incorrect posture can strain the entire upper body.
- If you sit a lot, you are at a greater risk for herniated lumbar disks. When you don't move, your upper body weight rests entirely on your ischial tuberosity (sitting bones) for prolonged periods of time potentially causing disc damage.

Lower Body

- Sitting for extended periods slows blood circulation throughout the body hence causing poor circulation in the legs leading to swollen ankles and possibly blood clots.
- The recent surge in cases of osteoporosis is attributed to a lack of activity. Weight-bearing activities stimulate the bones of the lower body causing the bones to grow thicker and stronger.

1 - Karen Basen-Engquist, Ph.D., personal communication, March 5, 2014

2 - Charles E. Matthews, et al. (2012). Amount of time spent in sedentary behaviors and cause-specific mortality in U.S. adults. National Cancer Institute

What Can You Do?

Don't quit your day job as a solution to sitting all the time, but don't let your body suffer because of a sedentary work life. Making changes throughout your workday can have a big impact on your overall health. Here are some simple changes that you can make in order to improve the health of your daily life.

- Have walking meetings
- Stand or walk while on conference calls
- Print documents on a printer that's across the office or on another floor
- Take the stairs
- Walk or bike to work
- Walk on a lunch break

If you do have to sit even for a short time during your workday, what is the right way?² The following are some tips to keep in mind when you are sitting, and, in addition to these tips, you may want to support your lower back as needed.

- Don't lean forward at the desk
- Your shoulders should be relaxed
- Keep your arms close to your sides
- Bend your elbows at 90°
- Keep feet flat on the floor

Another step you can take is to consider a healthier desk alternative. There are now standing desks, treadmill desks and bike desks available for any office environment no matter the shape or size. Some of them are singular desk solutions and others are a modular design allowing you to sit and stand throughout the day. A recommended option is a treadmill desk with an optional seated desk. This allows you the ease of adding physical activity to the workplace while still completing all your daily tasks and actually making you more productive overall.

2 - Charles E. Matthews, et al. (2012). Amount of time spent in sedentary behaviors and cause-specific mortality in U.S. adults. National Cancer Institute



Health Hazards of Sitting:

- *Higher risk of heart disease*
- *Excess insulin production*
- *Prone to various cancers*
- *Slowed brain function*
- *Neck/back strain*
- *Weaker core/glutes*

Cut ties from the past

Improving Productivity and Health

Research³ conducted by the University of Minnesota and published in the journal *Obesity*⁴ confirms that using a treadmill desk has a variety of benefits. The research study analyzed the effects of walking on a treadmill during the workday. The work performance of people who used a treadmill desk for a year didn't decline after a very brief, initial adjustment to the change. In fact, the study found that both overall employee productivity and health improved.

Carlson School of Management professor of Work and Organizations, Avner Ben-Ner, and his co-authors analyzed employees using treadmill desks instead of office chairs as they worked. For one year, these employees in a financial services company volunteered to trade their regular desk for a treadmill desk. They walked at speeds of 0 to 2 miles per hour. The study found that the employees burned seven to eight percent more calories per day than before the study began and there was nearly a point increase in productivity (based on 10-point scale) after participants became more comfortable with walking while working.

Exercising and moving throughout the workday isn't a new idea. Previous studies have found people are more productive after exercising⁵ compared to days they don't exercise. Quality of work, mental performance and time management all improve on days when workers exercise. Devoting work time to physical activity⁶ can lead to higher productivity.

Ben-Ner calls the outcome of the University of Minnesota study a win-win situation.³ "It's a health-improving option that costs very little. I think there will be an increasing number of employers who will invest \$1,000 or \$2,000 in outfitting a person's workstation," he says. "The employer benefits from the employee being active and healthy and more smart because more blood is flowing to the brain." Ben-Ner suggests that future research examine various circumstances that could affect employee performance. It may be that less physically fit employees gain relatively more from the use of treadmill desks.

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Stand Up and Move!

Regular bouts of exercise are beneficial, and we now know it is just as important to decrease the amount of time you sit each day at work. The bottom line: Access to treadmill desks may improve the health of office workers without affecting work performance. Good news for those who want to get up and move at work and continue to excel at their job.

3 - Avner Ben-Ner, et al. (2014). Treadmill Workstations: The Effects of Walking while Working on Physical Activity and Work Performance. DOI: 10.1371/journal.pone.0088620

4 - Earl S. Ford and Carl J. Casperson. (2012). Sedentary behavior and cardiovascular disease: A review of prospective studies. Centers for Disease Control and Prevention; Mayo Clinic.

5 - McKenna J. & Coulson J. (In press). How does exercising at work influence work performance? A randomised cross-over trial. *Medicine and Science in Sports and Exercise* 37:5 (suppl).

6 - Expertansvar (Expertsvar in Swedish). (2011, September 8). Exercise at work boosts productivity, Swedish researchers find. *ScienceDaily*. Retrieved March 28, 2014 from www.sciencedaily.com/releases/2011/09/110906121011.htm

Benefits to Walking and Working:

- *Increased blood flow to brain improves creativity*
- *Reduction in health hazards*
- *Burn more calories*
- *Higher quality of work*
- *Higher productivity*
- *Improved time management*



Work in the future

