

TerranearPMC Safety Share

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Week of January 21, 2019 – Office Ergonomics

According to the Merriam-Webster Dictionary, *ergonomics* is an applied science concerned with designing and arranging things people use so that the people and things interact most efficiently and safely. The word “Ergonomics” is a relatively new term which was derived from the Greek words: Ergon; *work* and Nomos, meaning *natural law*. The name “ergonomics” was officially proposed at a 1949 meeting of the British Admiralty, although history has recognized that it was first used in 1857 by the Polish scientist, naturalist and inventor, Wojciech Jastrzebowski.

For centuries, man has performed work which required the human body to adjust to his assigned tasks. Granted, during most of man’s history, those that toiled in the field or were forced to move insurmountable objects or perform the most repetitious and tedious tasks were, in fact, slaves or those of the lowest socio-economic classes; hence the desire to better the lives of such persons were not – I am sorry to say – important or worth the trouble. But along came the industrial revolution and the rise of the middle class and soon a completely new group of society emerged, carrying with them, a strong economic and political voice. As such, their demands to a better life have been heard.

Today, through such programs as workers’ compensation, insurance and the many associated costs of doing business, ensuring a healthy and productive work force only makes good business sense. Now, it is important for equipment and materials to be designed in accordance with human factors in mind (instead of the other way around!). One of the first examples of designing tools to the worker occurred in the early part of the 20th century, when Bethlehem Steel redesigned shovels to match the specific type of material that was being moved (ashes, coal or ore). This dramatically increased worker production as well as wages.

Now, we have entered into a new phase of living where using computers and working in an office environment have become an integral part of today’s workforce.

So, if you sit behind a desk for hours at a time, you are susceptible to certain ergonomic factors that, if not properly addressed, have been known to increase your risk to certain health concerns, ranging from mental fatigue to physical discomfort as well as Musculoskeletal Disorders – better known as MSDs.

Here are a few things that each one of us can do to help ensure our time at our desks and in front of a computer can be productive without increasing ones’ risk to an array of health problems.

First thing: Make sure that the weight of your arms is always supported. If your arms are not supported, the muscles of your neck and shoulders will be providing the body’s support, which, will cause them to be fatigued by the end of the day. Watch your head position and try to keep the weight of your head directly above its base of support (neck). Don’t project or protrude your head and neck forward.

I know we all heard this from our parents and elementary school teachers, but Don’t Slouch! It is true that bad posture (i.e. slouching) puts more pressure on the discs and vertebrae of your back.



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Use the lumbar support of your chair and avoid sitting in a way that places body weight more on one side than on the other. Move your chair as close to your work as possible to avoid leaning and reaching. The monitor should be placed directly in front of you, with the top no higher than eye level and about an arm's length away. The top of the screen should be at or slightly below eye level. The monitor should be directly behind your keyboard so that you are not twisting your body or forced to turn your head and neck continuously throughout the day. If you wear bifocals, lower the monitor an additional 1 to 2 inches for more comfortable viewing. Place your monitor so that the brightest light source is to the side (not glaring in your eyes).

Take steps to control screen glare, and make sure that the monitor is not placed in front of a window or a bright background. You can rest your eyes periodically for several seconds by looking at objects at a distance to give your eyes a break. Place your mouse within easy reach and on the same surface as your keyboard. While typing or using your mouse, keep your wrists straight, your upper arms close to your body, and your hands at or slightly below the level of your elbows. Today, wrist rests or palm supports are available to help maintain proper wrist positioning. Use keyboard shortcuts to reduce extended mouse use (ex: Ctrl + P to print a document). If possible, adjust the sensitivity of the mouse so you can use a light touch to operate it. And, if you're somewhat ambidextrous, alternate the hand you use to operate the mouse by moving the mouse to the other side of your keyboard.

The feet should not be dangling when you are seated. If your feet do not comfortably reach the floor or there is pressure on the backs of your legs, use a footrest or adjust the height of your chair so that your feet rest flat on the floor and your thighs are parallel to the floor. Choose a chair that supports your spinal curves. Under the desk, make sure there's clearance for your knees, thighs and feet. If the desk is too low and can't be adjusted, place sturdy boards or blocks under the desk legs. If the desk is too high and can't be adjusted, raise your chair. Once again, a footrest to support your feet may be needed.

And always, discipline yourself to take a break once hour to get up, walk around and stretch; no matter how involved you are with a project. Just save your work and take a 5-minute break.

And don't forget specific exercises designed to strengthen your back, shoulders, arms; those areas that have muscle groups that are directly affected (i.e. easily fatigued) from excessive computer use. There are numerous websites that demonstrate stretches you can do at your work station. And while I do not promote any specific product or service, I was introduced to a webpage that features some excellent fitness routines:

<https://www.bupa.co.uk/newsroom/ourviews/desk-stretches>. Of course, there are other sites to explore as well.

Keep your eyes open to your mercies. The man who forgets to be thankful has fallen asleep in life - Robert Louis Stevenson

