



NEXposture™

The Ergonomic Work Environment

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The Importance of Workspace Design

During the early 2000s, decades of ergonomic research and regulations led to workstation designs and working practices intended to reduce the ill effects of poor posture in the workplace. With the move to laptops, tablets, and mobile, many of these ideas seem to have been set aside or forgotten. The situation is getting worse because more people are using laptops inside and outside the office. Permanent desk spaces are becoming less common, with many of us working nomadically or from home.

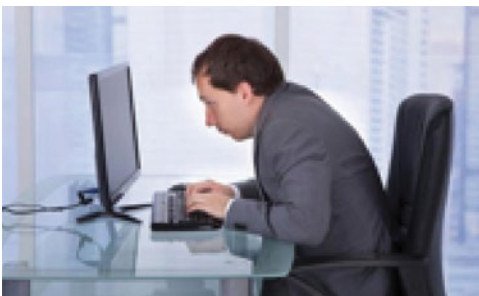
A recent study conducted by the University of Cincinnati found that most home office workstations are set up incorrectly. According to the study, 69% of people were found to not lean on the back support of their chairs and 73% used chairs without lumbar support. These statistics do not bode well with the vast majority of American workers satisfaction levels; 92 percent say that when their physical workspace is not up to par, their mental well-being and productivity can suffer, according to a Kelton Global study on behalf of National Business Furniture (NBF). More than half of respondents (54 percent) say an uncomfortable workspace or chair would cause them displeasure. The research shows millennials are more likely than boomers to say the design of their personal workspace affects their ability to be productive and happy.

Mohamed Mokdadaa, a PHD in ergonomics and psychology, has written about the importance of positive ergonomics which refers to a new type of ergonomics stressing the positive aspects of the man-machine system. Positive ergonomics can make workplace a space where employees feel comfortable, happy, calm, and confident with an increased ability to grow and innovate.

Beyond the effects of mental well-being, poorly designed ergonomic workspaces can contribute to physical ailments including musculoskeletal disorders and injuries. A primary reason people miss work or go to the doctor is back pain; 80 percent of the general population will suffer from a severe episode of lower back pain at least once in their lifetime. It's one of the most common workplace injuries and costs the US \$100 billion every year.

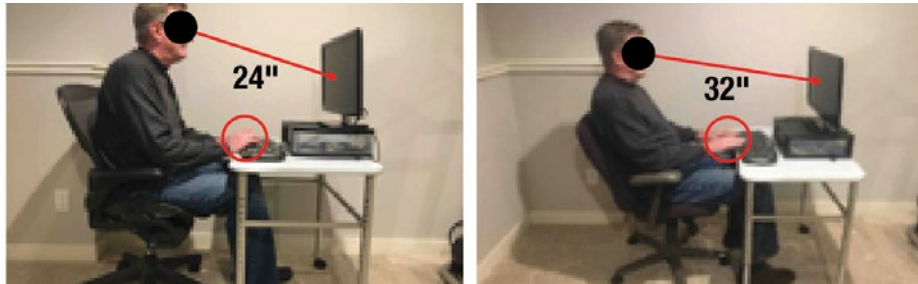
Desktop Technology and Posture

The physical causes of back discomfort and cumulative back pain are believed to be caused by ergonomic stresses including sustained and prolonged postures, awkward or non-neutral postures of the spine and compression forces brought on by too much load on the discs through increased load.



Desktop technology users commonly – and often instinctively – sacrifice proper postures and back support for long periods of time in order to effectively view the computer screen and position the hands and fingers over the keyboard and mouse, even if a static, forward slumping posture results in significant strain to the body. If your eyes are too far away from the monitor, you'll be unable to read the screen. Too close, and you'll be forced to deal with eye strain. When it comes to effective positioning, the key is to find the sweet spot.

The photos below show how as a person reclines, the distance between the eyes and monitor increases while the hands pull away from the keyboard and mouse.



The eyes dictate our body position and working posture. The inability to read text in a reclined posture will automatically and unknowingly pull the user's head forward to the point where he or she can effectively see. Of course the inability of the hands and fingers to reach the keyboard and mouse makes inputting impossible.

Ergonomic chairs can effectively facilitate user movement, however, today's fixed desktops lock technology into place. The incongruity between the chair and the desk means that moving from one posture to the next puts everything out of alignment. Today, our posture is subservient to our desktop technology – it's the boss.

Office Seating Not Going Away

Research indicates that 75 percent of work in industrialized countries is still performed while seated. Despite the negative health effects of sitting for long periods of time without posture change, Chaffin & Anderson (1984) found specific advantages to sitting versus standing:

- Sitting asserts less stress on the lower extremity joints
- Sitting provides stability required in those tasks that involve high visual and motor control
- Sitting requires less energy than standing
- Sitting lowers the hydrostatic pressure on the lower extremity circulation

Standing for long durations can also contribute to swollen feet, lower limb muscle fatigue, leg cramps, lower back problems as well as vein and cardiovascular problems. The key to standing is moderation – finding the right balance between standing and sitting.

Given that sitting will remain the dominant work posture for years to come, it's imperative to better understand the effects of sitting while working at the computer and create new ways to improve the health of our backs while we sit.

References

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