

This is an old one, needs updating, but it's important especially for those who work at a computer in an office setting most of the day.

The Value of Ergonomics

While two percent makes a significant contribution, studies have shown that a 20% improvement in productivity is a reasonable expectation with improved office workstations.

- Today's Facility Manager, October 2001

The big, boxy desk has gone the way of the 5¼" floppy disk. In its place is an L- or U-shaped work area with expanded surfaces and leg room to spare. The one-size-fits-all office chair has given way to seating options with more adjustments than a VCR, and resource materials have come to your fingertips from bookcases across the room.

While a number of factors have driven this office evolution into what Ellen Burnop, owner of New River Office Supply, calls the "cockpit arrangement," ergonomics has played a major role.

Simply stated, ergonomics is the study of human efficiency in the work environment. The Occupational Ergonomics Handbook, published in 1999, expands the definition to include "...processes involved in designing things for effective human use, and creating environments that are suitable for human living and work. It recognizes that work methods, equipment, facilities, and tool design all influence the worker's motivation, fatigue, likelihood of sustaining an occupational injury or illness, and productivity."

Since time is money, it's beneficial that employees be equipped with workstations that enhance safety and comfort and promote effectiveness and productivity.

Studies have shown that poorly-planned computer workstations are often associated with musculoskeletal disorders or MSDs like neck and shoulder pain, carpal tunnel syndrome, tendonitis and a host of muscle, nerve, tendon, ligament and joint maladies. Certified massage therapist Rebecca Stevens of the Center for Creative Change in Blacksburg can attest to having clients who reduced or eliminated neck and shoulder pain after lowering their keyboards, adjusting their monitors and placing their feet flat on the floor.

Common complaints from those who spend most of their time at a computer – now dubbed Video Display Terminal or VDT and including the computer, monitor, keyboard and mouse – range from neck pain, aching backs and muscle spasms to eye strain, excessive fatigue and headaches.

Office furniture manufacturers have responded to the call for more ergonomically appropriate designs with a plethora of workstation improvements, intricate chair controls, and adjustable accoutrements to hold the keyboard, mouse and documents. In fact, there's not much either big or boxy on the market. Everything is part and parcel, and custom arranged for your space.

"The work station is a multi-functional area," Burnop explains, "where you can have a peninsula at one end for small meetings, then glide into the cockpit section for computer work. We suggest using as much vertical space as possible."

Work surfaces, or desking sections, come in pieces – long, short, rounded, cornered, deep, narrow – and they are fit with attachable hatches, shelves, bins and hook-on components. The workstation is built according to the dimensions of the office taking into consideration the tasks to be performed, as well as human factors and amount of equipment.

“Though we’ve been aware of ergonomics for a couple decades, we are just now seeing a real articulation of the specific parts of the workstation,” states Teresa Ko, interior designer with Thomas Koontz Architect, P.C. She sees today’s modern desk top as a place for resource materials. The flat screen monitor is quickly gaining acceptance and can be mounted on a rail system or telescoping rods so it doesn’t even touch the work surface.

Keyboards and mouse pads have shelves that slide out, in, under, up, down, and around, for maximum comfort when in use and out of the way other times. Keyboards come with positive and negative tilts. The positive tilt is a carryover from the typewriter design, and a negative tilt is more ergonomically sound. It encourages your lower arms, wrists and hands to be straighter which is more beneficial.

Albert Moore, M.S., CPE, CIH, CSP, is a certified professional ergonomist, certified industrial hygienist, and certified safety professional in the Virginia Tech Office of Environmental Health and Safety Services. He cautions against thinking that equipment is the solution. It is an important aspect of increased efficiency and decreased employee injury. However, he has found the psychosocial factor – how people feel – to have an impact on successful transitions to more ergonomically-based office arrangements.

His experience shows that people are most highly attached to the mouse. One can change the monitor, move the computer, install new lighting and provide a new chair without a lot of resistance. But don’t mess with a person’s mouse.

The little mouse can inflict discomfort as often as the larger pieces that compose the VDT. Moore favors two of the newer mouse designs: the touch pad and the roller mouse.

“Touch pads have the advantage of zero force,” he explains. One touch pad Moore demonstrated is about seven inches wide, made for right- or left-handed persons and accepts a wide variety of edit commands (see www.fingerworks.com). The roller mouse (see www.ergo-2000.com) is a small turning cylinder on a wrist rest in front of a keyboard or mounted on the keyboard at front and center.

If you are attached to the traditional mouse, Moore suggests that you try different sizes to get one that’s most comfortable and appropriate for your hand size. Everything needs to be designed for the human body because the person is fixed in bone size, height and design. Equipment can be re-designed, re-engineered and re-tooled to conform to how the human interacts with it.

While ergonomically-designed office equipment can contribute positively to a worker’s productivity and well-being, it can be overrated or misunderstood.

Ronald B. Kemnitzer, professor in Virginia Tech’s School of Architecture and Design, has designed furniture and believes that ergonomics may be a

buzzword of the times. Too often, he feels, people miss the point of adjustments and the value of human movement.

“There’s a tendency to adjust a new chair for one’s comfort, then leave it there and go on sitting in a static position,” he observes. He has seen pillows behind backs and odd desk assemblies because people are not well-trained in making adjustments or changing them often.

Kemnitzer’s ideal office arrangement would be a desk, chair and/or monitor that automatically changed position by a few degrees every half-hour. This type of movement would assist the worker in not staying in one position for long periods of time.

Educating the public about the value of ergonomic designs in office furniture comes across as a sales pitch, according to Josh Hurt, account manager for Barrows Business Environments. “And it is,” he concedes. But once educated, people can make informed decisions based on their office space and goals for worker safety and efficiency. #

Joanne M. Anderson is a Blacksburg- based freelance writer. www.jmawriter.com