

Safe Use of Laptop and Notebook Computers in the Workplace

Laptop computers, also known as notebooks, are not recommended for use as primary computers that are used for numerous hours every day; however, they have been adopted for just that purpose by thousands of people.

Laptops are not designed ergonomically - The design and construction of laptops violates a basic ergonomic requirement for computer usage -- the keyboard and screen can be positioned independently for appropriate viewing and typing.

In the very early days of personal computing, desktop devices also had the screen and keyboard integrated as a single unit, and this resulted in widespread complaints of musculoskeletal discomfort. By the late 1970s a number of ergonomic design guidelines were written calling for the separation of screen and keyboard. The reasoning is simple. With a fixed design, if the keyboard is in an optimal position for the user, the screen isn't, and if the screen is optimal the keyboard isn't going to be placed properly.

Even contemporary laptop designs fail to satisfy this basic ergonomic positioning requirement, which means that users must pay special attention to how they use their laptop in order to avoid muscular-skeletal disorders, headaches, fatigue, and similar complaints that result from non-ergonomic computer use.

Incorrect set up creates the potential for developing any of numerous painful and inconvenient computer injuries that are generally referred to by titles of Repetitive Stress Injuries (RSI), Cumulative Trauma Disorders (CTD), and Computer Vision Syndrome (CVS).

Laptop user type - Are you an occasional user who works on your laptop for short periods of time or less than two hours per day? Are you a full-time user whose laptop functions as your main computer? Occasional users will have less risk of injury than full-time users, but all users should pay attention to how they use their laptop computers.

Computer Posture - laptops violate basic ergonomic design requirements, so using a laptop results in some tradeoff between either poor neck/head posture or poor hand/wrist posture.

Occasional Users - Because the neck/head position is determined by the actions of large muscles, people who use their computers occasionally for short periods of time less than two hours can more easily compensate for neck posture than arm and wrist posture.

Examples include:

- Find a comfortable, adjustable chair that allows you to recline very slightly.
- Angle the laptop screen so you can easily view the images with the least amount of neck deviation.

Full-time Users - Many people use these portable computers as full-time laptop workstations. If you use your laptop frequently and for periods of longer than two hours, as is typical in workplace settings where a notebook computer may be the employee's main computer begin to sit in a correct computer posture consistently and utilize

other ergonomic practices, including the following:

- Position the laptop on your desk/**work surface directly in front of you.**
- Set the unit's height and screen angle so **the images can be easily read without bending your neck.** This may require that you elevate the laptop off the desk surface using a stable support surface, such as a computer monitor pedestal.
- **Ensure an appropriate work surface height** where possible so that the elbows can rest comfortably by the side without the shoulders being raised, particularly if using a mouse. If the work surface height cannot be adjusted then adjust the chair height and use or improvise a footrest.
- If your desk height is satisfactory for your screen's placement, attach a separate, full sized keyboard to your computer and **use an independent mouse** rather than the touch pad, trackball, or small joystick incorporated into your keyboard. Connecting ports for a keyboard and mouse can usually be found in the rear or side of your computer. However, there wireless devices have become increasingly popular.
- Place the **separate keyboard on a negative-tilt keyboard tray** connected beneath your desk surface. This helps ensure a neutral wrist posture.
- The **mouse can be placed on an adjustable position mouse platform.**
- **Shoulders should be in a relaxed position and arms at your side**, with elbows at a 90° position when typing. (Arms should not be splayed wide or extended to reach and use the mouse)
- **Where possible plug the laptop into a standard desk monitor.** This will improve posture and help to reduce neck and shoulder strain and visual fatigue.
- **Sit in a comfortable, adjustable chair with lumbar support** and which allows you to sit at a slightly reclined position. This takes much weight off muscles and joints in the low back.
- Take "**micro breaks**" **every half hour or so** (including moving your eyes off the screen image to rest on distant objects for several seconds), **perform desk stretches (neck, shoulder, arm, and leg stretches)** at your desk occasionally, and get up from your desk to move around or perform standing stretches every couple of hours.

Contact Don Dressler - Ph: 949-533-3742 or E-Mail: info@dondressler.com for more information.