

Scott Donkin, DC, DACBOH is an internationally published author, chiropractor, speaker and consultant who has been in private practice in Lincoln, Nebraska for thirty years. Dr. Donkin speaks, produces and consults extensively on the subjects of human performance, ergonomics, workplace safety, health, wellness and longevity. You can contact Dr. Donkin by email at [sdonkin@donkinchiropractic.com](mailto:sdonkin@donkinchiropractic.com) or by telephone at (402) 488-1500 for patient consultation, speaking engagements or consulting questions.

## **CORPORATE CLINIC: Computer Blues News Reviewed**

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Video Display Terminal-Induced Complaints to Discuss:

- Eyestrain
- Neck and Shoulder Pain
- Back Pain
- Wrist and Hand Pain
- Fatigue

The 1980's will be remembered as the era of the computer boom, extolling the tremendous benefits of collecting, manipulating and retrieving data. The intent and promise was to make life better for people and business. Toward the end of the decade alarming trends emerged. Though it was an advantage to the management of information, intensive and prolonged use of video display terminals began to hurt the user. Reports of eyestrain, body pain, fatigue and increased levels of anxiety and stress caused diminishing productivity, increased health care costs and worker turn over. The 1990s now begins with serious doubts about the intensive use of VDT's.

Time-intensive lower forces, over a long time period or highly repetitious action, are the reasons for most injuries in the office setting. "Fixed" is probably the best word to describe what causes sedentary workers misery, which then leads to reduced productivity and/or job satisfaction. This simplified causation may now be followed by a single word solution..."variety". The exciting truth is that VDT use itself is not necessarily the problem. The problem comes from the way VDT users operate them. The most common physical complaints expressed by VDT users are listed about. Understanding the major cause of these problems will lead us to many relatively simple, yet practical solutions.

### **MECHANISM OF INJURY**

Physical injuries, like sprains and strains, usually arise in one of two ways. The most common result from improper lifting, extreme physical exertion or from trauma such as a fall or automobile accident. In this type of problem, a high force is exerted on the muscles, tendons, ligaments, or bones in a short period of time, causing strain, sprain, tearing of the supportive tissues or maybe even bone fracture. Pain and swelling soon develop, and usually you know shortly afterwards that you have been injured.

Another mechanism for injury is when less forceful pressure is applied to parts of the body by improper movements or postures. This produces abnormal changes in the structures of the body and you may not have an immediate sprain or swelling as when experiencing a sudden, violent trauma. Pain and other symptoms of problems from these repetitious forces will develop gradually and therefore many people do not take the appropriate actions to remedy the problems. The general cause of physical problems arising from VDT use arise from poor postures and strained positions that are assumed repetitiously for long periods of time. In other words, it is the fixed or stationary nature of VDT work that causes problems and therefore introducing variety and movement is key for a successful solution.

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## EYE STRAIN

Office and sedentary occupations involve a great deal of reading or studying and are therefore visually demanding. Visually demanding work is not in itself damaging to the retina of the eye. Visually intensive work does, however, pose a special challenge for the lens, and the internal and external muscles of the eyeball. The muscles that help focus the lens and hold the eye in a steady position will become strained and tired if held at one depth of focus for long periods of time, day after day. Your eyes need frequent vision breaks to minimize this strain.

Light emitting characteristics, combined with the reflective quality of the VDT screen, may pose special challenges for users. Glare and reflection on the screen or your desk top/walls may interfere with your ability to see numbers, letters, and symbols on the screen with ease. Under these circumstances, you may easily develop eyestrain, plus you may have to crane your neck or otherwise distort your body to avoid the glare or reflections. This extra physical effort inhibits your concentration and puts additional strain on your body. You may want to tilt or rotate the screen or take steps to reduce this interference at your workstation. Glare reduction screens are also available and helpful in many cases, however they can be counter-productive if they interfere with the clarity of the characters on your screen.

You may be able to compensate for a small amount of excessive or inadequate lighting by adjusting the brightness control knob on your screen. This is not the ideal solution. It is best to correct the source of the problem, whether it is a result of the interior lighting or glaring sunshine. The brightness and contrast between the characters and the background on the screen should be adjusted so that the characters are easily read without interference.

## FATIGUE

Fatigue is often difficult to measure, but is frequently described as a vague tiredness or feeling of low energy, lack of enthusiasm, or weakness. The major causes include poor posture, chair support, as well as not properly fitting into your work station or arranging the materials and equipment on your desk. High levels of job stress, lack of exercise, and inadequate quality of sleep and rest are also to blame. Fatigue has a quiet way of making you care much less about your job and may even make you feel resentment for having to do the simplest tasks.

One of the most common causes of physical and mental fatigue is lack of exercise. It may seem contrary, but the body is a dynamic instrument needing exercise. If you must sit in one place while performing most of your tasks your body cannot get the exercise and movement that it needs.

## WRIST AND ARM PAIN

Wrist and forearm problems are understandable common when typical working are postures are observed. Debilitating wrist problems, including Carpal Tunnel Syndrome, are not a beginning phenomenon; they are an end phenomenon and frequently a result from poor arm-wrist-hand posture combined w/ highly repetitious finger and wrist movements. The wrists and hands should be used in what is known as the "neutral position" as much as possible. In this position, the wrist is bent neither forward, backward, inward, nor outward. Extremes in any of these positions can put strain on the joints in the wrist and put pressure on the tendons, blood vessels, and nerves passing through the wrists. These abnormal

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positions also place strain on the forearm muscles and upper arms/shoulders, which anchor to the upper body and neck. If you keep your wrists and hands in a constant position while performing your tasks, it is essential for you to stretch and exercise them periodically throughout the work day and during your off-duty hours. Early detection and prompt attention to physical symptoms are the best insurance to avoid these potentially devastating conditions.

## NECK PAIN

It is difficult to initially perceive how back pain can be caused from an apparently restful position such as sitting. However, research studies indicate that pressures in the lower back increase 40 to 50 percent during sitting as opposed to standing positions. While sitting, muscle strain rapidly develops as the body forcefully holds itself in an upright posture, forcefully flex your upper arm muscle for several minutes and you will feel what happens to you back and neck muscles from prolonged sitting. The incidence of back pain is higher in those people who do not use a contoured backrest on their chair. The backrest should support the forward curve of the lower back as well as divert some of the weight of the upper body to the backrest. Most people will routinely work in positions in which their backs are not even touching the backrest. For all practical purposes, these people may as well be sitting on a stool rather than a well-designed, expensive chair. To reduce back pain, one must consciously develop the habit of using a chair's backrest while performing VDT tasks. One must also break away regularly from stationary or fixed postures to relieve cumulative muscle and back strain. The human body is engineered for a movement and incorporating a variety of sitting postures and motions is essential.

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