

[IMAGE]

## Paying the Price for Going Mobile

By Paul Hooper, DC, MPH, MS

I just got back from a trip to the East Coast. On my trip, I spent a fair amount of time in airports, on planes and on trains (sounds like a good movie title). As is not uncommon for me (I'm still a bit old-school), I was amazed at how many people are working while "on the road." From the individual who uses a cell phone to check email messages and Facebook, to the passenger on an aircraft who uses seat time to work on a presentation or proposal on a laptop or tablet, more and more people are working on the go. The problem is, any attempt at using good ergonomics and/or good posture is total fantasy.

*Telecommuting* or *telework* is defined as an arrangement in which workers enjoy some flexibility in their working location and hours. It is generally used by workers who rely on the Internet, computers and cell phones. They don't spend extended times working from a corporate office. Instead, they work from home offices, from their cars and while "on the road."

I became interested in this topic because for the most part, I am a telecommuter. I work much of the time from my home office. I also became interested because an increasing number of health problems seem to be associated with this rapidly expanding practice.

Of course, you don't have to be working to use these devices. *Everyone* is using mobile technology these days, which means everyone is at risk of suffering the health consequences.

### Not Enough Ergonomic Attention

Over the past few decades, there has been an increasing amount of attention paid to ergonomic principles in an effort to make the workplace safer and more efficient. This consideration has been particularly productive when it comes to workplace injuries. Partly due to the widespread adoption of ergonomic principles, many workplace injuries have been reduced. However, to date, the science of ergonomics hasn't made much of a dent in the use of mobile technology, whether on or off the job.

going mobile - Copyright © Stock Photo / Register Mark Take, for example, the laptop computer. There are ample examples of ergonomically designed keyboards for desktop computers, but the keyboards on laptops

are flat and force the wrists into awkward and compromising positions. It almost begs for problems. Combine this with the task of typing while using a laptop computer on an airplane seat-back tray, and you compound the ergonomic problems.

In addition, the keyboards on tablet devices are built into the screen. As such, they are anything but ergonomically designed. And everybody has a smartphone, most of which are able to send text messages. There are even contests to see who can send the fastest text message. But text messaging and ergonomics don't go hand in hand, so to speak.

### **Paying the Price**

One study by Harris International looked at more than 2,000 Americans ages 18 and over. The study indicated that 60 percent of Americans experience some form of health problem due to the use of technology during the day:

- 36 percent had eye strain
- 30 percent had back pain
- 27 percent had neck pain
- 24 percent had headaches
- 21 percent had wrist pain
- 11 percent had carpal tunnel syndrome
- 9 percent had insomnia

There are even some "new" problems associated with the poor ergonomics reflective of today's technology. The problems aren't really new, but there is no doubt they are becoming more frequent. For example, "texter's thumb" (aka "Blackberry thumb") develops as a result of using the thumbs for sending text messages. It is a form of deQuervain's tendinitis. "Texter's neck" is the term used to describe neck pain that results from prolonged poor posture while using a smartphone.

(By the way, "ear bud disease" is also becoming common. It is the result of ear infections due to the use of ear buds that are constantly placed in the ears when listening to music, watching video, etc., via mobile technology.)

According to a recent article published in the *Journal of Occupational Safety and Ergonomics*, 53 percent of smartphone users suffered from neck pain. A similar study stated that 84 percent of users had experienced pain in at least one body part.

It would appear that the culprit for "texter's neck" is the prolonged forward head carriage that accompanies smartphone use. In addition to the forward head carriage, we've all seen individuals holding their cellphones against their ear by bending their neck. While this may allow the individual to use their hands, this posture undoubtedly creates problems.

### **Other Potential Health Issues**

Poor posture and repetitive-stress issues are not the only problems encountered when using today's mobile devices. Modern laptops generate a fair amount of heat. One study at State University of New York in Stony Brook showed that, when using a laptop actually on the lap, median temperature in the scrotum increased, leading to a reduction of normal sperm cells. Additionally, the heat from using a laptop on the lap may cause skin burns.

It is also worth noting that mobile devices use radio frequency (RF) waves. While no specific evidence exists linking exposure to RF waves to health problems, it is probably wise to minimize such exposure. After all, no one would dream of walking around with a microwave oven taped to their head.

Some authorities also feel use of mobile technology may be habit forming, even addictive. I happen to agree. Given that so many of our patients present with a primary complaint of neck pain, recognizing the fact that mobile technology plays a role may make our treatments more effective.

### **What You Can Do**

Our world has been made much more accessible by modern technology. It is now possible to stay in constant contact with others and work in places that were unimaginable just a few short years ago. However, the use of this technology comes at a cost. Many of the health problems we now suffer from are the result of inappropriate use of technology.

As usual, common sense prevails. Constant and repetitive use undoubtedly leads to problems. Therefore, the most fundamental advice is to take frequent breaks, whether using a smartphone, laptop computer, iPod, etc. Even small breaks of a few seconds may be long enough to reduce the muscle fatigue that comes from using

these devices, particularly if use involves a less-than-optimal body position. There is evidence from the ergonomic literature that the use of microbreaks (10 seconds every 10 minutes) may reduce muscle fatigue by as much as 20-50 percent over an eight-hour day.

Build breaks into your routine. Don't take several phone calls back to back. Take a few minutes between calls to relax the muscles. Don't use laptop computers for long periods. Set an alarm clock for 15 minutes and get up and walk around. The bottom line: Movement is good for you.

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