



ERGONOMICS / POSTURE / SLEEP HABITS

## Telecommuting and Technology: Ergonomic and Worker's Comp Considerations

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As our world becomes more and more reliant on technology, equipment becomes more dependable and we become increasingly more comfortable with e-mail, the fax machine, the Internet and the smartphone, it is becoming easier and easier to work away from the office. This practice is referred to as telecommuting or, in the words of the Bureau of Labor Statistics' *Occupational Outlook Quarterly*, "the portable job."

Telecommuting ranges from occasional work done while on the road to a more permanent assignment at a home office. In addition to those who are self-employed, some estimate that there are approximately 3 million people who telecommute in one form or another. That represents about 2.5 percent of the work force in the United States - and the number is growing.

I write a blog for CID Management from my home; or at least, I'm able to work from anywhere I can find a computer and access to the Internet. That, by definition, makes me a telecommuter. And in my spare time, I'm a closet [ergonomist](#). I have a master's degree in ergonomics. So, I'm sort of a self-declared expert on the topic. My reason for stating that is to introduce the topic of telecommuting and ergonomics.

### Ergonomic Issues

With our increasing reliance on technology, there has been a simultaneous increase in the incidence of repetitive strain injuries (RSIs). A RSI is a syndrome that incorporates a number of conditions associated with activity-related arm pain (e.g., tendinitis, carpal tunnel syndrome, thoracic outlet syndrome, tennis elbow). Commonly seen in the workplace, they are known as "overuse injuries" in athletes. While RSIs usually affect the musculoskeletal structures, there are also a number of other systems that may be affected (focal dystonia, contact dermatitis, etc.).



RSIs are produced, in part, by constant repetition of a single activity or a group of activities. One paper by Cole, et al. (2005) looked at the predictors of RSI. Among other things, the authors found that those workers who were full-time had a higher percentage of RSIs than those who worked less than 30 hours each week. In other words, the longer the exposure, the greater the risk. (Big surprise there!)

The other day I was on an airplane. I watched as a couple of my fellow passengers seated comfortably in their seats (*not*) worked on their computers at 37,000 feet. They each had their laptop sitting on the drop-down tray table. I'm not sure about the design of those tray tables, but I'd venture to say that they are not ergonomically planned. And when you add a laptop computer, which isn't ergonomically designed, either, good posture goes out the window.

As an aside, the tray table hasn't changed in a number of years. But the use of the tray table as a desktop at 37,000 feet has definitely increased. It wasn't too many years ago that the table was

used to hold drinks and the dinner tray. Those days are over. Today, with access to the Internet (WiFi) above 10,000 feet and ever lighter laptop computers, it seems the tray table has now become a portable desk.

Another passenger was straining to watch a video on his smartphone's 4-inch screen. And several passengers were using their Kindles to read electronic versions of books. Not really working, but busy using today's technology, nevertheless.

As soon as the plane landed, everybody, and I mean everybody, got out their cellphone. I don't know what we did just a few short years ago, before cellphone use became so widespread. It seems we can't go anywhere without one these days. My personal cellphone is relatively small; small enough that it fits comfortably in my shirt pocket. Unfortunately, my fingers haven't gotten any smaller. Consequently, I find the text feature difficult to manipulate. I misspell more words using the cellphone to text than I can count.

These commonplace technology-based behaviors highlight the relatively new form of [musculoskeletal injury](#), one that derives from our increasing use of improving technology. Technology is changing so fast that proper ergonomics doesn't have a chance to catch up. Or maybe it's not that ergonomics hasn't caught up; maybe instead, it's that ergonomic considerations haven't really been factored in to the design of the laptop computer, tablet and smartphone.

Take, for instance, the rise in neck and upper back problems that has accompanied the use of laptop computers and ever smaller computer screens. As an example, I'm writing this article on a netbook computer with a 10-inch screen. While I love the portability of the netbook, I have to admit that it makes me hunch my shoulders more than I'm comfortable with. At the end of a session working on my netbook, my neck and shoulders ache. One can only imagine what might happen if I worked on such a small device for long periods of time.

Additionally, after looking at the computer screen all day, my eyes seem to bother me a lot. It's no wonder that there has been an increase in "dry eyes." According to the Mayo Clinic, one cause of dry eyes involves tasks that require a lot of concentration, such as working on a computer or reading.

Then there is the problem of "texter's thumb," sometimes referred to as "Blackberry thumb" (although it now applies to text-enabled cellphones in general). Texting is the new way to communicate. For example, it has been estimated that the average teen sends as many as 80 text messages each day. Some people can text so fast that they are subject to repetitive motions that didn't exist a few years ago. They even have contests to see who can text the fastest.

Everywhere I look, I see folks with wires coming out of their ears. Since hearing loss is such a major problem to industry, I'm wondering if we are creating an entirely new problem: "earbud disease." Actually, there is an ear infection that is known as "earbud disease." It's created by the sharing of earbuds between people. But I'm not referring to ear infections; I'm talking about the noise that is generated by these devices. For years, audiologists have been concerned about individuals who listen to music at high volumes for hours at a time.

### Worker's Comp Concerns

One of the primary concerns when it comes to telecommuting is the issue of [worker's compensation](#). Under what circumstances does a telecommuter qualify for an on-the-job injury? If they are working from a home office and trip over the family dog while going to the kitchen for a cup of coffee, is that an occupational injury? If using a laptop computer on the kitchen table

creates stress on the neck and shoulders, does that qualify?

In an effort to reduce the incidence of occupational injuries and illnesses, the Occupational Safety and Health Administration (OSHA) has increased its attention to proper ergonomics in the workplace. However, OSHA doesn't have the resources, or the desire, to inspect many of the places where work is being done.

OSHA states that it "will not conduct inspections of home offices, will not hold employers liable for home offices, and does not expect employers to inspect home offices." The OSHA policy for home based offices includes the following;

- OSHA does not apply to an employee's house or furnishings.
- The agency will not hold employers liable for non-work activities in employees' home offices.
- OSHA does not expect employers to inspect home offices.
- The agency will not inspect home offices (unless a complaint is made).
- Injuries and illnesses that occur in home offices must be logged by the employer as required by OSHA's record-keeping rule.
- Employers are responsible for the safety of workers employed in home offices, specifically for hazards caused by materials, equipment, or work processes the employer provides or requires to be used in an employee's home.

On the one hand, OSHA holds the employer accountable while simultaneously stating that it will not perform any inspections, nor does it require employers to perform any inspections of home offices. Therefore, the telecommuter is basically on their own when it comes to determining appropriate ergonomics.

With all of the innovations that come from modern technology, life is certainly different these days. I'm not sure that it's any easier; just different. The type(s) of illnesses that used to afflict us (e.g., infections) are gradually being replaced by more chronic conditions such as diabetes and obesity. What influence the presence of these conditions will have on the impact of RSIs is not clear. In addition, what influence the practice of telecommuting will have also remains to be seen.

### *Resources*

- Cole DC, Ibrahim S, Shannon HS. Predictors of work-related repetitive strain injuries in a population cohort. *American Journal of Public Health*, July 2005;(95):7;1233-1237.
- Keller K, Corbett J, Nichols D. Repetitive strain injury in computer keyboard users: pathomechanics and treatment principles in individual and group intervention. *Journal of Hand Therapy*, January-March 1998;11(1):9-26.

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Dr. Hooper recently wrote a white paper about telecommuting for Comprehensive Industrial Disability Management. A pdf version of the paper is available at no charge at [www.cidmcorp.com/newsroom/whitepapers](http://www.cidmcorp.com/newsroom/whitepapers).

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