

A. Repetitive Strain Injury (RSI) is a description of an injury associated any repetitive activity such as hammering, piano playing, truck driving, computer use, or even shaking hands. Occupational Overuse Syndrome (OOS), Cumulative Trauma Disorder (CTD), and Work Related Upper Limb Disorders (WRULD), are all equivalent expressions to RSI.

Tendonitis and tenosynovitis are characterized by inflammation of tendons or their surrounding sheaths, respectively. Both of these RSI disorders usually begin as mildly aggravating and, given bad habits, may quickly progress to be severely debilitating. These common RSI injuries also add to the difficulty of proper diagnosis and deserve greater recognition. These tendon inflammations usually occur before full blown Carpal Tunnel Syndrome.

Carpal Tunnel Syndrome (CTS) is a specific, severe, and debilitating form of RSI which describes a squeezing of the median nerve as it runs to hand. The nerve is squeezed by swollen tendons surrounding it as they cross through a tunnel made by ligaments at the inside of the wrist.

The National Center for Health Statistics estimates at least 1.89 million people have Carpal Tunnel Syndrome. Many experts feel that CTS is also associated with nerve compression symptoms in the chest or shoulders. \*\*All RSI symptoms should receive immediate medical attention from physicians experienced in RSI.\*\*

17. Q. Advice by Health Care Practitioners often includes a collection of terms from a kinesiology course. Which ones do I need to know to help identify my own workstation ergonomic problems?

A. Standing with the arms at your sides, palms facing forward, "flexion" is folding of any joint of the body so that the angle between the parts decreases in the forward direction, except at the knee and toes. Returning the joint to its straight position requires "extension".

A joint which continues its extension past its straight posture is in "hyperextension". This occurs in the hand and wrist when you pull the fingers back.

Standing with your arms at your sides, palms facing forward, "pronation" is the turning of your hand so that you thumb points toward your leg. "Supination" is the opposite movement.

18. Q. Why does it seem like RSI from keyboarding has become such a big problem recently?

A. One reason why RSI is becoming more prevalent is because computers are now allowing us to do more office tasks which formerly allowed us to change activity. For example, a typewriter at one time required using a return carriage, "white.out" for mistakes, breaks for paper installation, and getting up to file papers in a cabinet.

Computer word-processing now eliminates these "microbreaks". In short, computers have greatly simplified office activity, an advance that has at least one important disadvantage. The danger is found in the possibility for long duration, continuous, and relatively motion free, precise, muscular activity called "static exertion". Humans were not well "designed" for this.

19. Q. What lifestyle changes can I make to reduce the chances of RSI?

A. Two main themes permeate ergonomic study of RSI prevention; posture and relaxation. Appropriate postures are necessary to keep the strain of performing work in a near stationary position (static exertion) to a minimum. But even the best postures can fall prey to overload when with bad habits.

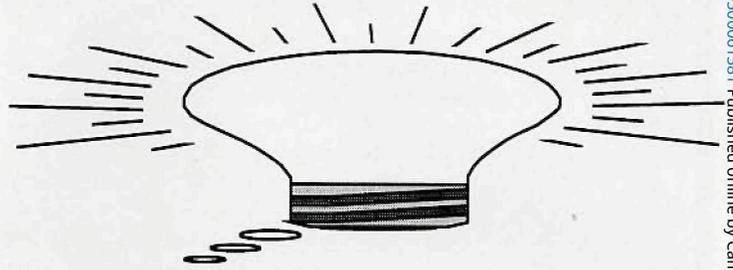
Relaxation is critical to the body's resilience, its ability to recover from keyboarding. Office workload dynamics can have a great influence on the risk of RSI. Try to promote office policies which emphasize steady work load schedules and avoid, or at least distribute, crises deadlines.

Stretching and strengthening active muscles promotes relaxation. Relaxation is as important for prevention of RSI symptoms as it is for general well-being. Take a new, more active role in promoting your general fitness both at and away from work. If you don't exercise regularly and your over 40, get clearance from a physician to add walking, bicycling, or swimming to your weekly schedule on three separate days.

Cut down on stimulants like coffee, sweets, or nicotine and spread healthy snacks and water intake throughout the day. Keep water at your desk as it

makes for a smart microbreak. The first symptom of dehydration is fatigue, not thirst!

Fruit and vegetable snacks prevent mid-morning and mid-afternoon blood sugar drops. These dips can effect alertness, mood, productivity, and decision making. A diet emphasizing complex carbohydrates, reliable sleep ing patterns, and time for yourself can do wonders for 9 to 5 productivity, not to mention your own well-being. All habits and practices that promote relaxation are necessary to stop the threat of RSI. Good Luck. ■



## Microphilosophy

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How do we know if what we see through the microscope is real? There is a group of social scientists who are known as social constructionists. Of this group there are those known as deconstructionists. And of this group there are those who are engaged in the "Science Wars". These individuals more or less advocate that what scientists do is a construction of their mind and not necessarily an expression of nature. Some continue to argue that the actions or constructions of scientists are done in part to get money to play around in the lab. Some of these people ask that federal funding be curtailed for these constructions of people called scientists. In some way the arguments remind one of animal rights activists attacking medical research.

Alan Sokal wrote an article call "Transgressing the Boundaries:..." and it was accepted and published in the journal *Social Text*. This journal with a circulation of about 800 is a leading journal for social constructionists and a place where debates about the science wars have been taking place. Sokal, an avowed leftist physicist, wrote "Transgressing" as a hoax and immediately proclaimed so when the *Social Text* article was published. His purpose was to show that the Science Wars advocates were on thin intellectual ground. You may wish to read several recent articles of *Academe* (an AAUP publication) that tries to put this all into focus.

So back to the microscope. Those of us who do microscopy know that much of what we look at is a construction. The tissue is dead, chemically altered, stained, dehydrated, infiltrated, and sectioned into to little pieces... AT BEST. Clearly we are constructing what we hope is a correct interpretation of nature. Akin to walking through a graveyard and trying to guess what really happened in the living lives of the people under the tombstones. We also know in the best sense of Popper that we are self doubting and trying to better (disprove) much of what was published before. These social constructionists do not seem to understand any of this. Just like I don't understand why people watch soap operas on daytime television.

How do we tell a public what we see through the microscope is real? It is a kind of "Daddy, why is the sky blue?" question. As microscopists we have a responsibility to address the question and help the public understand what we see is "real" and represents nature. And yes, it is a construction of sorts but that is what science is all about: humans' feeble attempt to reconstruct the beauty of nature... but not in the sense of the deconstructionists.

I recognize this is an unusual observation, but believe it to be an important issue as it can dramatically affect the findings that many of us share. ■