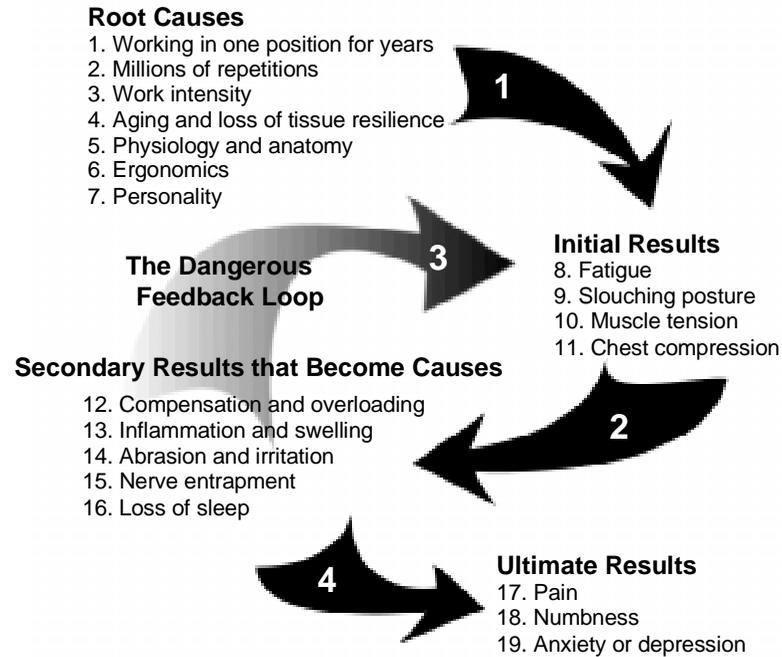


**Understanding Repetitive Strain Injuries** *Repetitive strain injury* is still being defined, not by the medical profession, but by the community of patients suffering from its effects. RSI refers to muscle pain or nerve problems of the hands, arms, or shoulders, believed to be caused by overuse. It can also affect the neck and back, and may include burning, numbness, tingling, or pins-and-needles sensations. The symptoms range from dull and diffuse aching to intense, searing, and very specific pain. At its worst, you may have difficulty with coordination or you may even be unable to use your hands.

The most well known forms of RSI are tendinitis (inflammation of tendons attaching muscle to bone), tenosynovitis (inflammation of the tendon linings, near joints), and the various "tunnel syndromes" in which nerves are pinched where they go through narrow passages. But our analysis of the subject reveals three other scenarios that characterize serious RSI: 1) chronic muscle spasms or inflammation, called "myofascial pain syndrome"; 2) nerves that are tethered in place by years of overuse in a single posture; 3) a less well known condition called "thoracic outlet syndrome" in which blood vessels are pinched in the chest. All three can cause "referred pain," meaning sensations at a point away from the actual trouble spot.

**Causes** Separating symptoms from the true root causes of RSI is crucial to any effort at rehabilitation. However, there is wide disagreement on the causes, with some practitioners even discounting the contribution of repetition itself, instead suggesting that poor ergonomics, nutrition, and lifestyle are sufficient for RSI to develop. The following diagram shows what we think are the main factors that cause RSI in computer users.



The tricky part of RSI onset is that the damage can be accumulating for years, before the symptoms get bad enough to make you take action. We believe that the traditional diagnoses, such as tendinitis and carpal tunnel syndrome are more appropriately regarded as symptoms, and you must change your body, work habits, and workstation to attack the root causes.

*This is an educational brochure... if you have health problems, see a licensed medical practitioner.*

**3 Degrees of RSI** RSI resists simple categorization because several medical conditions fall under its umbrella, but the following breakdown can help you judge the severity of your situation.

- 1<sup>st</sup>-Degree RSI:** occasional, unpredictable aching, such as a sore muscle or tendon that comes and goes.
- 2<sup>nd</sup>-Degree RSI:** frequent or predictable problems, burning, throbbing. Tendinitis and other "acute" injuries are examples of this level.
- 3<sup>rd</sup>-Degree RSI:** constant (chronic) pain, improper nerve sensations, strength or endurance problems. Myofascial pain syndrome or nerves trigger points (nerves tethered in place) are examples of this level.

Resources	
<input type="checkbox"/>	RSI Advice: <a href="http://www.RSIProgram.com">www.RSIProgram.com</a>
<input type="checkbox"/>	RSI Encyclopedia: <a href="http://www.TIFAQ.com">www.TIFAQ.com</a>
<input type="checkbox"/>	Print-All-at-Once Site: <a href="http://www.engr.unl.edu/ee/eeshop/rsi.html">www.engr.unl.edu/ee/eeshop/rsi.html</a>
<input type="checkbox"/>	Find-a-Doc <a href="http://www.engr.unl.edu/ee/eeshop/rsi.html">www.engr.unl.edu/ee/eeshop/rsi.html</a>
<input type="checkbox"/>	Discussion Group: <a href="http://www.ucsf.edu/sorehand">www.ucsf.edu/sorehand</a>
<input type="checkbox"/>	Break/Stretch Reminders: <a href="http://www.silversoft.com/reminder/">http://www.silversoft.com/reminder/</a> <a href="http://www.paratec.com/">http://www.paratec.com/</a>
<input type="checkbox"/>	Supplies: <a href="http://www.KeyAlt.com">www.KeyAlt.com</a>
<input type="checkbox"/>	Massage Device: <a href="http://www.Armaid.com">www.Armaid.com</a>
<input type="checkbox"/>	Windows Labor Saver: Powerdesk from <a href="http://www.Ontrack.com">www.Ontrack.com</a>
<input type="checkbox"/>	Web Search Labor Saver: <a href="http://www.Copernic.com">www.Copernic.com</a>
<input type="checkbox"/>	Mouse Alternative (Touchpad): <a href="http://www.Cirque.com">www.Cirque.com</a>

Excerpted from  
*It's Not Carpal Tunnel Syndrome,  
RSI Theory & Therapy  
for Computer Professionals*



Suparna Damany, MSPT & Jack Bellis  
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or (800) 789-8590



## Repetitive Strain Injury— Theory & Therapy for Computer Users

Repetitive strain injuries, such as the well known carpal tunnel syndrome, have become the leading workplace health problem in just the last few years, accounting for about 60% of workers' compensation cases. Most repetitive strain injuries are minor, reversible conditions... but only if you have the right information and take the appropriate action before the problem gets worse. If you ignore the symptoms, you risk starting the invisible cycle of pain and damage that can turn a minor injury into a chronic problem.

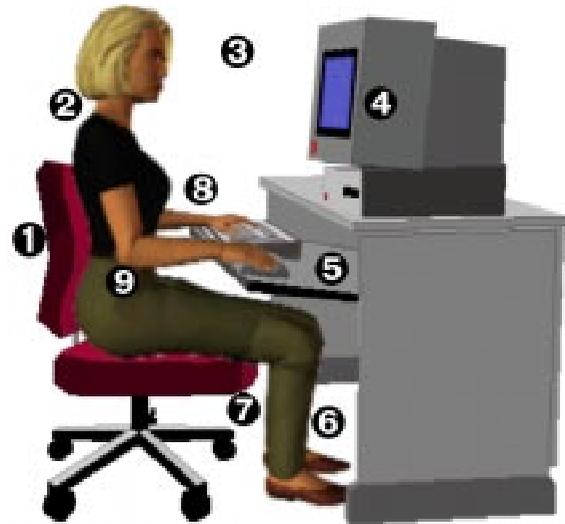
Use the information in this brochure to help decide what the appropriate action is for your situation, but use this information with the guidance of a licensed healthcare professional.

This brochure is free to copy if unaltered

**Therapy** The recommendations on this page have been grouped to roughly correspond to our three degrees of RSI on the previous panel. This is somewhat of an oversimplification to help you digest the information. For any individual situation, you generally have to mix and match the techniques. For instance, even in purely preventive situations it may be wise to use some of the 2<sup>nd</sup> and 3<sup>rd</sup> degree techniques, especially as your years behind the keyboard increase.

## Preventing 1<sup>st</sup>-Degree RSI: Breaks & Ergonomics

- ❑ **Do something other than keyboard work for 2-5 minutes out of every 15-30 minutes.**
- ❑ Don't bend your wrists up or out.
- ❑ Balance your head above your torso—don't roll your shoulders or neck forward.
- ❑ Keep your elbows close by your side—don't reach out.



- ❶ Adjustable seat with good lumbar support.
- ❷ Posture comfortably balanced and upright.
- ❸ Monitor at comfortable reading distance.
- ❹ Monitor just below eye level, tilted up a little, free from glare.
- ❺ Keyboard and mouse on tray so you don't reach up to them; possibly tilted away from you slightly to avoid bending wrists up.
- ❻ Your feet reach the floor when your knees are at 90-degrees. Otherwise, use footrest.
- ❼ Seat pan provides full support, no armrests.
- ❽ Forearms horizontal so that wrists are straight (left-to-right and up-down). Your wrists do not rest on anything when working.
- ❾ Elbows close by your side, so you don't have to support your arms. The bend should be slightly more open (closer to straight) than a 90-degree angle.

*Note that the techniques above will NOT reverse the two forms of tissue damage associated with serious RSI: chronic muscle inflammation or nerves that are tethered in place by years of overuse in a single posture.*

## Treating 2<sup>nd</sup>-Degree RSI: Flexibility & Stretching, Workstyle Modification

**Note** that stretching and strengthening are only to be done after tissue damage and inflammation is reduced. If any of these exercises hurt, you're not ready for them. Get professional help.

**Breathe Fully**, from the belly. Many computer users hardly breathe when concentrating.



**"Glide Exercises"**: These three pictures show a special type of stretching exercise in which you move gently from one position to another to put a nerve through its complete range of motion. Refer to our web site, [www.RSIProgram.com](http://www.RSIProgram.com) for full explanations.



There are dozens of stretches that can help battle RSI. Here is a small sampling. Go slowly and gently.



**Strengthening Exercises** are the best long-term defense against muscle inflammation. Although computer work doesn't seem very taxing, the RSI sufferer's body isn't recovering from every day's dose of non-stop work.



## Treating 3<sup>rd</sup>-Degree RSI: Massage Therapy, Workstyle Reduction

- ❑ Stop typing until you control your symptoms.
- ❑ Get professional help from an experienced RSI therapist to eliminate muscle spasms or nerve trigger points.
- ❑ Temporarily type with one or three fingers on each hand.
- ❑ Get started with voice recognition software. Try yoga or biofeedback.
- ❑ Become less obsessive about keyboard work. *Get a life!*

**Debatable Therapies** We feel that **wrist braces** might help at night, but otherwise contribute to weakening. **Anti-inflammatory drugs** are questionable because they only address symptoms and risk serious stomach irritation. **Surgery** is a last resort because, in serious RSI patients, the problem often moves to another spot after surgery.