



## *An executive secretary overcomes RSI*

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# REPETITIVE

**T**ina was a 29-year-old woman who had worked for five years as an executive secretary to a university dean. After years of keyboarding and clicking with a mouse, she developed what her family doctor called “overuse disease” in both arms, her right being worse than her left. Tina told her family doctor that her hands were weak and tingled and that she had soreness in her elbows, forearms and hands at the end of the workday and on into the night. The symptoms improved over the weekend.

The young woman was treated with splints, ibuprofen, acetaminophen, icing and physiotherapy — all to little benefit. Even after months of therapy, her ability to work continued to be limited. She never stopped working, however; she just worked more slowly. She didn’t want to be replaced, and her disability was not obvious to anyone observing her in the office.

When Tina came to see me at my sports medicine practice, she said, “Doctor, I can’t even lift a milk jug.” She had already started mousing with her left hand, which further slowed her pace at work. She had switched to wearing clothes with fewer buttons at the cuff and leaving her bracelets in the jewellery box to avoid aggravating her sore wrists and hands.

Even so, she constantly rubbed her forearms without even realizing she was doing it. Around the house, her husband had to carry anything heavy. But still her condition worsened. Surprisingly, all her X-rays and blood tests were normal. Her family physician had told her that she just had to pace herself better and work more slowly, but Tina felt downright disabled.

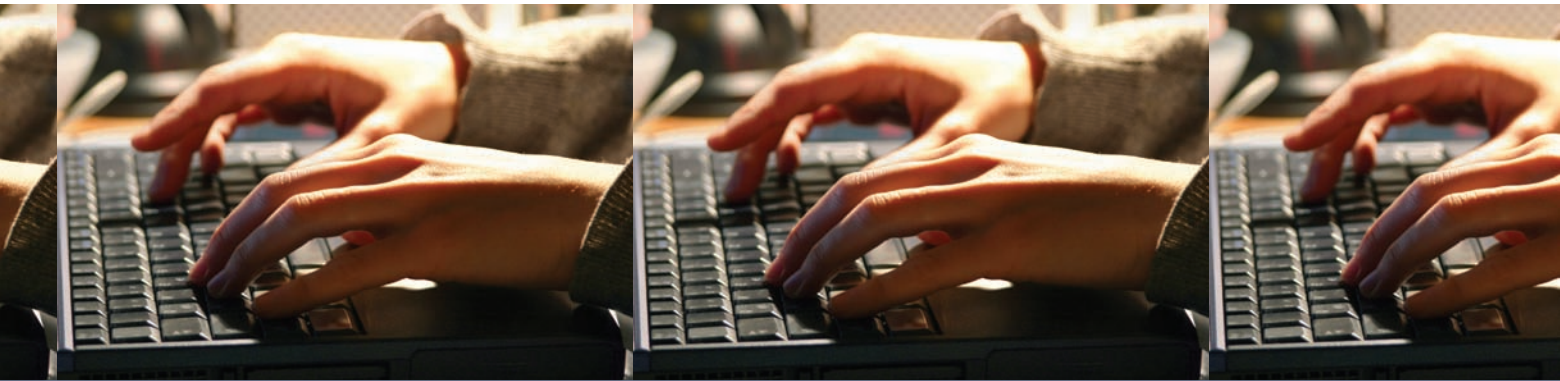
The usual name for Tina’s problem is repetitive strain injury (RSI). The term refers to a group of medical conditions caused by prolonged repetitive, awkward or forceful movements that overstress particular muscles, nerves, tendons, ligaments or bones. It is also known as cumulative trauma disorder. It is common in the forearms and hands, but it can also affect the eyes, neck, shoulders and back. Examples include carpal tunnel syndrome, tennis elbow, eye strain and joystick wrist.

It may seem funny that apparently low-stress activities such as keyboarding and mousing should cause such a debilitating condition, but it is no joke. Typing, for example, uses the same muscles, tendons, joints and bones over and over again without rest, causing them to develop microscopic tears and swelling in the muscles and joints and even microscopic bone fractures.

### **SYMPTOMS IN THE AFFECTED AREAS**

- ▶ Fatigue
- ▶ Tingling
- ▶ Lack of coordination, clumsiness
- ▶ A cold feeling
- ▶ Hypersensitivity

These symptoms typically change the way you use your hands and other affected joints. This problem can become so serious that it can impede every activity in daily life — from writing a note to brushing your teeth.



# STRAIN INJURIES

And today's fast-paced workplace pressures employees to do more and more keystrokes per hour and allows bones less time to rest between tasks.

If the tendons, muscles and bones are constantly aggravated with no chance to repair themselves, an inflammatory trauma reaction sets in. This inflammation leads to the release of pain chemicals, swelling, anoxia (oxygen reduction) in the tissues and restriction of movement. The nerves are irritated, and all the symptoms that Tina listed appear.

Most of the time, the patient does not deal with the problem at the outset but continues to overuse the affected muscles and joints, thereby aggravating the condition. A vicious cycle sets in until the problem becomes chronic and harder to manage. If the cycle is not broken, the problem persists, and if it's left too long, it may become resistant to therapy.

According to Statistics Canada, in 2000–01, roughly 2.3 million Canadians over age 20 reported that they had had an RSI in the past 12 months. Those with RSIs had more contact with health-care professionals and higher levels of chronic pain and psychological distress than those without. This

## RSI RISK FACTORS

- ▶ Overuse
- ▶ Poor working technique
- ▶ Bad posture
- ▶ Non-ergonomic workstation
- ▶ Working on the computer for longer than four hours a day
- ▶ Insufficient rest breaks
- ▶ Lack of sleep
- ▶ Loose joints
- ▶ Inadequate physical exercise
- ▶ Failure to take action at the onset of symptoms



# PREVENTION

condition tends to strike more women than men, perhaps because of the greater amount of keyboarding that women's jobs entail.

According to the Toronto-based Industrial Accident Prevention Association, work-related sprains and strains account for more than 40% of all lost-time injuries in Ontario. Some may be due to sudden strains from lifting heavy objects, but many are RSIs. It's not hard to see how adverse an effect RSIs can have on productivity, absenteeism rates and disability claims. In fact, the World Health Organization has named the last day in February International Repetitive Strain Injury Awareness Day.

Tina took stock of her working style: an awkward workstation, a disinclination to take rest breaks and a tendency to hammer at the keys. She talked to the dean, who was very supportive. She stopped keyboarding for six weeks, using a dictation program called Dragon Speak, which does the keyboarding in response to your voice.

She took more frequent breaks and worked hard to stretch and strengthen her hands and forearms. She also bought a stress ball and often squeezed it at lunch and during her breaks. She consulted specialized physiotherapists who practised muscle stripping, a very rigorous and painful massage of the neck and arms that improves blood flow and helps accelerate healing.

Tina also got an ergonomic assessment of her workstation, which resulted in a lower desk, the relocation of her monitor and keyboard directly in front of her and a better chair.

At her last visit, Tina waxed enthusiastic about one therapy in particular. "There's this great treatment for numbness and tingling in your hands," she said. "It involves submerging your forearms and hands in very hot water for five minutes,

**GOOD POSTURE** Sit with your feet flat on the floor, your knees at right angles and your pelvis rocked forward. Your lower back should be lightly arched and your upper back slightly rounded. Position your shoulders, arms and elbows naturally at your sides and position your hands directly in front of you. Keep your head in the middle of your shoulders, not to one side or the other.

**PROPER WORKSTATION** Your chair is critical to proper support and should be fully adjustable. Position your keyboard directly in front of you at a height just above your navel. During keyboarding, your arms should be bent at a 90-degree angle, your mouse should be placed at your dominant side within easy reach, and your monitor should be located directly in front of you at eye level. If more than 25% of your workday involves using the telephone, use a headset.

**CORRECT KEYBOARDING TECHNIQUE** Keep your wrists straight, let your hands float over the board and make your strokes light. Don't hammer the keys. Use the mouse lightly and avoid unnecessary clicking.

**REGULAR STRETCHING** Every 15 or 20 minutes, stretch out your wrists, fingers, elbows, shoulders, neck and upper back. Give your eyes a break. Breathe deeply to slow down your heart rate. Get up and walk around a bit or go for a glass of water.



then in very cold water for five minutes. You repeat it twice." I did not know why this worked for her, but I was happy to see that she had improved so much. With patience and diligence she conquered RSI.

With more than half of Canada's employees now doing their work on computers, stories such as Tina's can only increase. Employers and employees alike need to take more action to avoid and manage RSI. 