Repetitive Strain Injuries & Trauma Disorders

Repetitive strain injuries (RSIs) are now the single largest cause of job related (*occupational*) health problems in the U.S. RSIs can occur in any job that requires repetitive, forceful, or awkward motions. Repetitive strain injuries are a group of health problems that result from several causes. These include: overuse or misuse of muscles, or cord-like structures attaching muscle to bone (*tendons*), and nerves.

CAUSES

Job-related RSIs are caused by any combination of the following factors:

- Fast pace (working quickly).
- Repetitive tasks (making the same motion over and over).
- Awkward or fixed posture (working in an awkward position or holding the same position for a long time).
- Forceful movements (lifting, pulling, or pushing).
- Vibration (caused by power tools).
- Working in cold temperatures.
- Job stress (such as monitoring).
- Inadequate rest breaks (overuse).

RSIs develop over time and are also called Cumulative Trauma Disorders (CTDs). Repetitive strain injuries have other names, too. These include:

- Occupational overuse syndrome.
- Repetitive motion disorders.
- Repetitive damage caused by an accident (*trauma*) disorders (RTDs).

RSIs can affect almost any part of the body. But they often occur in the upper body. The most commonly affected body parts are:

- Fingers.
- Hands.
- Wrists.
- Arms.
- Elbows.
- Shoulders.
- Back.
- Neck.

FACTORS THAT INCREASE YOUR RISK OF RSI

You may be at risk for developing an RSI, if you:

- Have poor posture.
- Have poor technique.
- Use a computer more than two to four hours a day.
- Have a job that requires constant computer use.
- Don't take frequent breaks.
- Are loose-jointed.
- Don't exercise regularly.
- Work in a high pressure environment.
- Have arthritis, diabetes, or another serious medical condition.
- Keep your fingernails long.
- Have an unhealthy, stressful, or inactive lifestyle.
- Weigh more than you should.
- Don't sleep well.
- Are unwilling to ask for a better work setting, chair, desk, etc.
- Are macho, and don't believe you are at risk when you really are, or think that you can just “take it.”

SYMPTOMS

These problems (*symptoms*) may appear in any order, and at any stage in the development of the injury.

Symptoms may occur at any time: during work, right after work, or many hours or days after work. Many people first experience symptoms when they are not working. For example, an injured worker may have no pain at work, but may wake up at night with a painful shoulder or elbow.

The most common symptoms are:

- Burning, shooting, or aching pain, especially in the fingers, palms, wrists, forearms, or shoulders.
- Tenderness.
- Swelling.
- Tingling, numbness, or loss of feeling.
- Loss of joint mobility (difficulty moving the wrist or elbow, for example).
- Weakness, heaviness, or loss of coordination in the hand (for example, difficulty opening a jar top).
- Crackling.
- Muscle spasms.
- Decreased coordination, or clumsiness (for example, dropping things often).
- Avoiding the use of one hand or arm, because it is painful, and preferring the other.
- Difficulty doing simple things like handling keys, chopping food, putting on jewelry, writing, or brushing teeth.

Any jobs that require strain and repetition pose a risk of RSI. There are many different repetitive strain injuries, since many different parts of the body can be affected. RSI symptoms can be mild. But they can become so intense that it becomes difficult to perform everyday tasks. These tasks include opening a jar, or fastening a button. In general, the more intense and frequent the symptoms, the more serious the RSI is likely to be. A serious RSI can develop only months after symptoms first appear. Or it could take years to develop.

Most RSIs are work-related. But RSIs can be caused by activities outside of work, such as sports and hobbies. Older people are more vulnerable than younger ones to RSIs. This is because the body's ability to repair the effects of wear and tear decreases with age.

If you think your repetitive strain disorder is getting worse, or you are developing one, see your caregiver for advice. Often, if treated early, the amount and length of disability can be shortened.

HOME CARE INSTRUCTIONS, IF YOU HAVE AN RSI

- If your caregiver prescribed medicine to help reduce swelling, take as directed.
- If you were given a splint to keep your wrist from bending (such as for carpal tunnel syndrome), use it as instructed. It is important to wear the splint at night. Use splints for as long as your caregiver recommends.
- It is important to give your injury a rest by stopping the activities that are causing the problem. If your symptoms are work-related, you may need to talk to your employer about changing to a job that does not require using your injured part.
- Only take over-the-counter or prescription medicines for pain, discomfort, or fever as directed by your caregiver.
- Following periods of extended use, especially strenuous use, apply an ice pack wrapped in a towel to the affected (*sore*) area for 20 to 30 minutes. Repeat as needed, three to four times per day. This will help reduce the swelling.
- Call your caregiver if you develop new, unexplained symptoms or problems that are not responding to medicines.

When non-surgical treatment does not help, surgery may be required. Non-surgical treatment could include:

- Changes in the activity that caused the problem or made it worse.
- Medicines to stop the swelling and soreness (*anti-inflammatory medications*).
- Injections such as cortisone, to decrease the inflammation and soreness.

Your caregiver will help you determine which is best for you.

HOW YOU CAN AVOID OR PREVENT AN RSI

An RSI can take months, even years to develop, and it can take longer to heal. But there are ways to prevent RSIs, including:

- Maintain good posture at your desk or work station with:
  - Feet flat on the floor.
  - Knees directly over feet, bent at right angles (or slightly greater), a couple inches of space away from the chair.
  - Pelvis rocked forward, sitting on the "sitz bones," with hips no lower than, and perhaps slightly higher than the knees.
  - Lower back arched in, and supported by your chair, or a towel/foam roll wedged against your back.
  - Upper back naturally rounded.
  - Shoulders and arms relaxed, and at your side.
  - Neck arched in, relaxed, and supported by your spine. Do not hold tension in your back or under your chin.
  - Head balancing gently on top of your spine.
  - A good quality, adjustable chair with a firm seat.
- Set up your work station well, so that it reduces strain. Make sure your:
  - Keyboard is above your thighs. You are able to reach the keys, with your elbows at your side and bent at (slightly greater than) 90 degrees, and your forearms are about parallel to the ground.
  - Mouse is just to one side of your keyboard. You do not need to lean, stretch, or hunch to work it. Many people have one shoulder lower than the other. This can be caused by repetitive stretching for a mouse.
  - Monitor is directly in front of you (not off to the side), so that your eyes are somewhere between the top of the screen and one fifth of the way down from the top. The screen should be about 15-25 inches from your eyes.
- Take breaks often, at least once an hour. Get up, walk around, and stretch.
- Exercise regularly.
- Only use your computer as much as you need to for work. Do not use it during breaks – get up instead!
- Do not hold your pen tightly when writing. It should be possible to pull the pen from your fingers, easily.
- Let your hands float above the keyboard when you type. Move your entire arm when moving your mouse or typing hard-to-reach keys. Always keep your wrist joint straight. This lets the big muscles in your arm, shoulder, and back do the work, instead of the smaller and weaker ones in your hand and wrist.

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