Repetitive Stress Injury

Tips for preventing RSI

If you work in an office:

- Make sure your work station is set up to put the minimum amount of stress on your hands and back. Adjust it so that you can sit comfortably while typing.
- Try to use a soft touch while keying in information.
- Set up your monitor so it is directly in front of you, with the top of the screen at or slightly below eye level.
- Be sure your keyboard and mouse are low enough to allow you to relax your shoulders; install a keyboard tray if necessary. When you're typing, make sure your wrists are straight (and level with your elbows). Never rest your wrists on the desk or armrests while you are typing or using a mouse or trackball.
- Don't bend your hands up at the wrists, even if you're using a wrist rest.
- Sit up straight and make sure your chair supports your spine.
- Keep your feet flat on the floor.
- Stretch frequently while at the computer. If you're not suffering hand pain, make circles with your wrists and stretch your fingers back to ease up on pinched nerves and increase microcirculation. If your office is too cold, try to keep your hands warm by using gloves with the fingertips cut off.
- Take frequent breaks. Take a "minute break" every 15 minutes and a five-minute break every 20 to 30 minutes.
- If you have symptoms of RSI, cut down on your computer use. Try leaving a voicemail message instead of sending e-mails, and take notes by hand instead of using the computer.

If you do manual labor:

- Make sure the tools you use absorb shock and are easy to grip. Look for tools with soft rubber handles or extensions that allow you to work without reaching or bending over. If you use writing tools, grip them as loosely as possible.
- If the belt or table you sit at is too high, ask your employer to adjust its height. If you're doing the same task over and over, try to vary your duties so that you're not doing the same repetitive motion over and over again. Discuss implementing work rotation with your union or employee/management team.
- Take at least one break an hour.
- If you have symptoms of RSI, cut down on your computer use. Try leaving a voicemail message instead of sending e-mails, and take notes by hand instead of using the computer.

Ten easy ways to reduce your risk of developing Repetitive Stress Injury (RSI)

1. **TAKE BREAKS!** when using your computer. Every hour or so, get up and walk around, get a drink of water, stretch whatever muscles are tight, and look out the window at a far off object (to rest your eyes). As explained in above,
2. Use good posture. If you can't hold good posture, it probably means it's time for you to take a break from typing. If you are perpetually struggling to maintain good posture, you probably need to adjust your workstation or chair, or develop some of the support muscles necessary for good posture.
3. Use an ergonomically optimized workstation to reduce strain on your body.
4. Exercise regularly. Include strengthening, stretching, and aerobic exercises. I find yoga and Pilates especially helpful.
5. Only use the computer as much as you have to. Don't email people when you could walk down the hall or pick up the phone and talk to them. It's not only better for your hands - it's friendlier. Think before you type to avoid unnecessary editing.
6. Don't stretch for the hard-to-reach keys, e.g. BACKSPACE, ENTER, SHIFT, CONTROL... basically everything but the letters. Instead, move your entire hand so that you may press the desired key with ease. This is crucial when you are programming or typing something in LaTeX, where non-letter keys are used extensively.
7. Let your hands float above the keyboard when you type, and move your entire arm when moving your mouse or typing hard-to-reach keys, keeping the wrist joint straight at all times. This lets the big muscles in your arm, shoulder, and back do most of the work, instead of the smaller, weaker, and more vulnerable muscles in your hand and wrist. If you find it difficult to do this, then your shoulder and back muscles are probably too weak. It is OK, and in fact a good idea, to rest your elbows/wrists when you are not typing.
8. Use two hands to type combination key strokes, such as those involving the SHIFT and CONTROL keys.
9. When writing, avoid gripping the writing utensil tightly. Someone should be able to easily pull the writing utensil out of your hand when you are writing. If your pen or pencil requires you to press too hard, get a new one (my favorite is Dr. Grip Gel Ink)
10. Realize that you are not invincible. RSI can happen to you. Don't be afraid to ask for help.

Wrist pain

By Mayo Clinic staff

Definition

Wrist pain is a common complaint. Many types of wrist pain are caused by sudden injuries that result in sprains or fractures. But wrist pain also can be caused by more long-term problems — such as repetitive stress, arthritis and carpal tunnel syndrome.

Because so many factors can lead to wrist pain, diagnosing the exact cause of long-standing wrist pain sometimes can be difficult. A precise diagnosis is crucial, however, because proper treatment depends on the cause and severity of your wrist pain.

Symptoms

Wrist pain may vary, depending on what's causing it. For example, osteoarthritis pain is often described as being similar to a dull toothache, while tendinitis usually causes a sharp, stabbing type of pain. The precise location of your wrist pain also can give your doctor clues as to what might be causing your symptoms.

When to see a doctor

Not all wrist pain requires medical care. Minor sprains and strains, for instance, usually respond to ice, rest and over-the-counter pain medications. But if pain and swelling last longer than a few days or become worse, see your doctor. Delays in diagnosis and treatment can lead to poor healing, reduced range of motion and long-term disability.
Causes

- Bones of the wrist and hand
- Carpal tunnel anatomy

Your wrist is a complex joint made up of eight small bones arranged in two rows between the bones in your forearm and the bones in your hand. Tough bands of ligament connect your wrist bones to each other and to your forearm bones and hand bones. Tendons attach muscles to bone. Damage to any of the parts of your wrist can cause pain and affect your ability to use your wrist and hand.

Injuries

- **Sudden impacts.** The most common method of injuring your wrist is when you fall forward onto your outstretched hand. This can cause sprains, strains and even fractures.

- **Repetitive stress.** Any activity that involves repetitive wrist motion — from hitting a tennis ball or bowing a cello to driving cross-country — can inflame the tissues around joints or cause stress fractures, especially when you perform the movement for hours on end without a break. De Quervain's disease is a repetitive stress injury that causes pain at the base of the thumb.

Arthritis

- **Osteoarthritis.** In general, osteoarthritis in the wrist is uncommon, usually occurring only in people who have injured that wrist in the past. Osteoarthritis is caused by wear and tear on the cartilage that cushions the ends of your bones. Pain that occurs at the base of the thumb may be caused by osteoarthritis.

- **Rheumatoid arthritis.** A disorder in which the body's immune system attacks its own tissues, rheumatoid arthritis is common in the wrist. If one wrist is affected, the other one usually is, too.

Other diseases and conditions

- **Carpal tunnel syndrome.** Carpal tunnel syndrome develops when there’s increased pressure on the median nerve, which passes through the carpal tunnel, a passageway in the palm side of your wrist.
- **Kienbock's disease.** This disorder typically affects young adults and involves the progressive collapse of one of the small bones in the wrist. Kienbock's disease occurs when the blood supply to this bone is compromised.

- **Ganglion cysts.** These soft tissue cysts occur most often on the top of your wrist opposite your palm. Smaller ganglion cysts seem to cause more pain than do larger ones.

Risk factors
Wrist pain can happen to anyone — whether you're very sedentary, very active or are somewhere in between. But certain factors can increase your risk.

**Sports participation**
Wrist injuries are common in many sports, including:

- Baseball
- Basketball
- Bowling
- Football
- Golf
- Gymnastics
- Hockey
- Skateboarding
- Snowboarding
- Tennis
- Rollerblading

**Age**
Older adults are more likely to have osteoporosis, which makes bones brittle and more susceptible to fractures, than younger people are. They're also more likely to fall and to develop arthritis.

**Repetitive work**
Almost any activity that involves your hands and wrists — even knitting and cutting hair — if performed forcefully enough and often enough can lead to disabling wrist pain.
Pregnancy
Some women develop carpal tunnel in the second and third trimesters of pregnancy, in part because of hormonal changes. Shifts in the balance of estrogen and progesterone cause the body to retain more fluid, which increases swelling in the carpal tunnel.

Diseases and conditions
Your risk of developing wrist pain is increased if you have:

- Diabetes
- Paget's disease
- Leukemia
- Scleroderma
- Lupus erythematosus
- Underactive thyroid

Preparing for your appointment
While you may initially consult your family physician, he or she may refer you to a doctor who specializes in joint disorders (rheumatologist), sports medicine or even an orthopedic surgeon.

What you can do
You may want to write a list that includes:

- Detailed descriptions of your symptoms
- Information about medical problems you've had
- Information about the medical problems of your parents or siblings
- All the medications and dietary supplements you take
- Questions you want to ask the doctor

What to expect from your doctor
During the physical exam, your doctor may:

- Check your wrist for points of tenderness and swelling
- Ask you to move your wrist to see if your range of motion has been decreased
- Assess your grip strength and forearm strength
Tests and diagnosis

In some cases, your doctor may suggest imaging tests, arthroscopy or nerve tests to help pinpoint the cause of your wrist pain.

Imaging tests

- **X-rays.** Using a small amount of radiation, simple X-rays can reveal bone fractures, as well as evidence of osteoarthritis.

- **Computerized tomography (CT) scan.** CT scans can provide more-detailed views of the bones in your wrist. A CT scan takes X-rays from several directions and then combines them to make a two-dimensional image.

- **Bone scan.** In a bone scan, a small amount of radioactive material is injected into your bloodstream. This makes injured parts of your bones brighter on the resulting scan images. Bone scans are particularly useful in detecting stress fractures.

- **Magnetic resonance imaging (MRI).** MRIs use radio waves and a strong magnetic field to produce detailed images of your bones and soft tissues. For a wrist MRI, you may be able to insert your arm into a smaller device, rather than have your entire body slide into a full-size MRI machine.

Arthroscopy

If imaging test results are inconclusive, your doctor may perform an arthroscopy, a procedure in which a pencil-sized instrument is inserted into your wrist via a small incision in your skin. The instrument contains a light and a tiny camera. Images are projected onto a television monitor.

Nerve tests

If your doctor thinks you have carpal tunnel syndrome, he or she might order an electromyogram (EMG). This test measures the tiny electrical discharges produced in your muscles. A needle-thin electrode is inserted into the muscle, and its electrical activity is recorded when the muscle is at rest and when it's contracted. Nerve conduction tests also are performed as part of an EMG to assess if the electrical impulses are slowed in the region of the carpal tunnel.

Treatments and drugs

Treatments for wrist problems vary greatly, depending on the type, location and severity of the injury, as well as on your age and overall health.

Medications

- **Pain relievers.** Over-the-counter pain relievers, such as ibuprofen (Advil, Motrin, others) and acetaminophen (Tylenol, others), may help reduce wrist pain. Stronger pain relievers are available by prescription.
- **Corticosteroids.** If your wrist pain is being caused by inflammation, your doctor may inject the area with cortisone, a powerful anti-inflammatory drug.

**Therapy**
If you have a broken bone in your wrist, the pieces will need to be aligned so that it can heal properly. A cast can help hold the bone fragments together while they heal.

If you have sprained or strained your wrist, you may need to wear a splint to protect the injured tendon or ligament while it heals. Splints are particularly helpful with overuse injuries caused by repetitive motions.

**Surgery**
In some cases, surgery may be necessary. Examples include:

- **Severely broken bones.** Surgeons may need to hold the fragments of bone together with metal hardware.
- **Carpal tunnel syndrome.** If your symptoms are severe, you may need to have the tunnel cut open to relieve the pressure on the nerve.
- **Tendon or ligament repair.** Surgery is sometimes necessary to repair tendons or ligaments that have ruptured.

**Lifestyle and home remedies**
Not every cause of wrist pain requires medical treatment. For a minor wrist injury, you may want to try putting ice on it and wrapping your wrist with an elastic bandage.

**Prevention**
It's impossible to prevent the unforeseen events that often cause wrist injuries, but these basic tips may offer some protection:

- **Build bone strength.** Getting adequate amounts of calcium — at least 1,500 milligrams a day for adults — and vitamin D can help prevent fractures.
- **Prevent falls.** Falling forward onto an outstretched hand is the main cause of most wrist injuries. To help prevent falls, wear sensible shoes. Remove home hazards. Light up your living space. And install grab bars in your bathroom and handrails on your stairways, if necessary.
- **Use protective gear for athletic activities.** Wear wrist guards for high-risk activities, such as football, snowboarding and rollerblading. If you're new to extreme sports, consider getting professional instruction, and know your limits.
- **Pay attention to ergonomics.** The market is flooded with devices, such as ergonomic keyboards, that claim to take the stress off your wrists when you're at the office. Using some of these devices, taking regular breaks, keeping your wrists in a relaxed, middle position when you type and improving your posture can make you more comfortable and help protect your wrists.