

## Repetitive Strain Injury

Repetitive strain injury (RSI) is an injury caused by repetitive use of muscles. For the purpose of this article I will refer to repetitive strain injury as RSI. It usually occurs in the back, shoulders, arms, wrists and hands. Contrary to popular belief, you do not have to be undertaking heavy manual work such as drilling or shovelling to develop RSI. Most RSIs are caused by seemingly safe jobs such as writing, using a computer or packing boxes. The most important factor is that the activity is continuous, usually for a long period of time.

### RSI is a musculo-skeletal disorder

RSI is a musculoskeletal disorder which is a general term to include a wide variety of disorders involving the joints and the soft tissues such as muscles, ligaments, tendons and joints involved in moving joints. The term includes anything from back pain, repetitive strain injuries of various to joint problems such as arthritis. Manual workers, both skilled and unskilled are most at risk. Workers involved in the following industries and trades are most at risk: Agriculture, craft workers, construction, office workers who are desk bound, fisheries, forestry, loading and unloading, machine operators, manufacturing, mining, tailors. Obviously, the type of work in these jobs are very varied, however the common link that leads to increased risk of musculoskeletal injury is manual and repetitive type work.

### Types of musculo-skeletal disorder

Musculoskeletal pain can be caused by damage to bones, joints, muscles, tendons, ligaments, bursae (fluid-filled sac, lined with synovial membranes, that occurs at a joint) or nerves. I will explain the most common cases of musculo-skeletal pain. Some but not all are caused by RSIs.

Bone pain is usually deep, penetrating, or dull. It commonly results from injury. Other less common causes of bone pain include bone infection (osteomyelitis) and tumours.

Muscle pain is often less intense than that of bone pain. An example is a muscle spasm or cramp (a sustained painful muscle contraction) in the calf. Pain in the muscle can be due to an injury, an autoimmune reaction (for example, polymyositis or dermatomyositis), loss of blood flow to the muscle (can result from some heart conditions) and infection.

Tendon and ligament pain is also generally less intense than bone pain. It is often worse when the tendon or ligament is stretched. Common causes of tendon pain include tendinitis, tenosynovitis, lateral and medial epicondylitis, and tendon injuries. Common causes of ligament pain include sports injuries (sprains).

Fibromyalgia may cause pain in the muscles, tendons, or ligaments. The pain is usually in multiple locations and may be difficult to describe precisely. Fibromyalgia is severe inflammatory condition of unknown cause which the sufferer experiences extreme tiredness as well as pain and stiffness.

Virtually all joint injuries and diseases produce a stiff, aching pain, often referred to as "arthritic" pain. The pain is worse when the joint is moved and may range from mild to severe. With some conditions, there may be swelling of the joint along with the pain. Joint inflammation (arthritis) is a common cause of joint pain. There are many types of arthritis,

including rheumatoid which is characterised by inflammation, osteoarthritis which is caused by wear and tear, gout which is caused by a build up of uric acid.

Some musculoskeletal disorders cause pain by compressing nerves. These conditions include the "tunnel syndromes" (for example, carpal tunnel syndrome). The pain tends to radiate along the path supplied by the nerve and may be burning.

Sometimes, pain that seems to be musculoskeletal is actually caused by a disorder in another organ system. For instance, shoulder pain may be caused by a disorder affecting the spleen or gallbladder. Arm pain may be caused by a heart attack (myocardial infarction).

However, many of these conditions are caused by Repetitive Strain Injury. Repetitive Strain Injury is a term similar to that of 'sports injury' in that it tells more about how the injury was sustained, rather than what the injury actually is.

## Causes of RSIs

The following are recognised as causes of RSI:

- The overuse of muscles in hands, wrists, arms, shoulders, neck and back
- Repeated actions, which are usually performed on a daily basis over a long period
- The use of vibrating equipment.
- The repetitive actions are done in a cold place
- Forceful movements are involved
- Workstations are poorly organised
- Equipment is badly designed
- Adopting an awkward posture for long periods of time
- Not enough rest breaks

## How common is repetitive strain therapy?

In recent years due to the increased use of computers and other technology that involves a large amount of keyboarding, cases of RSI has increased greatly. According to a study by Microsoft® in the UK in 2008, 30% more employees suffered from RSIs than two years previously (2006). They contributed this to the fact that more employees now use laptops and mobile phones while out of the office and while on the move. Their study found that 68% of employees suffered from aches and pains, with the most common symptoms being back ache, shoulder pain and pains in hands and wrists as a result of working in cramped or awkward positions while in transit. Unfortunately, the problem is likely to have got worse since this 2008 study due introduction of improved internet on mobile phones and devices like Ipads®. Posture related health problems are also growing due to the sedentary nature of many jobs.

## Symptoms

Symptoms of RSI can take months or even years to appear. Initially, only a slight ache may be felt. As the problem gets worse, there is more marked pain while performing the repeated activity (eg) when typing. Eventually, the pain may be felt most of the time, even with only slight movements. As well as the pain, numbness and tingling may make it difficult to hold objects.

The risk of RSI is increased by spending long periods without a break, sitting on an uncomfortable seat, at a poorly arranged workstation. At work, the computer keyboard and mouse are the most common cause of RSI. Home computers, video games and text messaging also increase the risk. Workers on factory assembly lines, musicians, dressmakers and cleaners are also more likely to develop RSI because of the repetitive nature of their activities.

The most common RSI signs and symptoms include:

- Tenderness in the affected muscle or joint
- Pain in the affected muscle or joint
- A throbbing (pulsating) sensation in the affected area
- Pins and needles (tingling) in the affected area, especially the hand or arm
- Loss of sensation in the hand
- Loss of strength in the hand

## Examples of repetitive strain injuries

As repetitive strain injury is a very broad term, I will briefly explain some of the more common types of RSIs.

- **Bursitis** results from pain in the bursa caused by inflammation. The bursa acts as a cushion between bones, tendons, joints and muscles. Bursae are fluid-filled sacs. Bursitis commonly occurs in the shoulder, knee, elbow, and hip.
- **Carpal tunnel syndrome** is caused by the compression of the median nerve through the carpal tunnel in the wrist area of hand. When constricted, blood cannot flow freely through the hand to the fingers causing numbness, burning sensations and pain in the hand.
- **Diffuse RSI** is where the patient experiences pain but upon examination by a health care professional, nothing physical can be found to be wrong.
- **Dupuytren's contracture** is a rare condition that affects the hands and fingers. Connective tissue under the skin of the palm contract and toughen over time. It causes one or more of the fingers on one or both hands to bend into the palm of the hand. Eventually the hand can become completely clenched.
- **Epicondylitis** is the medical name for conditions such as tennis elbow and golfers elbow. It results from overuse of muscles and tendons at joints. Tennis elbow and golfers elbow are two common types. Rest is the treatment of first choice.

## Tips to prevent repetitive strain injury

- Warm up and cool down the muscles used before and after repetitive activity
- When working on a computer, aim to regularly stretch arms and wrists and straighten fingers. Stand up and walk around when feeling fatigued and stare into the middle distance.
- Take regular breaks throughout the day
- Have an appropriate workstation and seating position
- If your job puts you at risk of RSI you should seek out expert advice on prevention from your employer or professional body
- If you use a mobile phone regularly, use a hands-free headset. This stops you cradling the phone between an ear and a bent neck which can cause neck strain.
- Using the universal shortcuts when typing will result in less typing and hence less risk of injury. Some common ones are CTRL + a = select all. CTRL + c = copy. CTRL + p = print. CTRL + s = save. CTRL + v = paste. CTRL + x = cut. CTRL + z = undo

## Treatment

Treatment of RSI includes resting the affected area and the use of painkillers and anti-inflammatory medication. Heat and cold packs can help. Icing the affected area when pain and stiffness is severe can be very helpful as it will reduce inflammation in the area. Most pharmacies stock reusable ice packs. Elastic wrist supports or firm wrist splints can also help.

## Where can you get help?

### Pharmacist

If you have followed the advice above and you are still suffering from aches and pains, you have a number of different options in relation to health professionals who can help you. In Whelehans, we regularly encounter people suffering with RSIs. If in doubt, your pharmacist can be your first point of call as there is no charge and no need to make an appointment. If you have exhausted all other non-drug options or the pain is particularly severe, I often advise the short term use of anti-inflammatory such as ibuprofen which is available over the counter. Ibuprofen is generally more effective than paracetamol for RSIs because as well as relieving pain it also reduces inflammation at the site of problem. This results in faster healing times. However, ibuprofen cannot be used by everyone. For example, it should be avoided by asthmatics, people suffering from stomach ulcers and people suffering from high blood pressure and heart conditions. It also interacts with many prescription medicines such as warfarin. Always check with your pharmacist or GP if you have any doubts. In Whelehans, we stock the generic version of ibuprofen, which is equally effective as other brands such as Nurofen<sup>®</sup> but is considerably less expensive. Our generic version is called Buplex<sup>®</sup>.

### General Practitioner

RSIs can also be treated by your GP and your GP can give you an accurate diagnosis. Your GP may prescribe stronger pain killers than are available over the counter. If there is well defined inflammation in the area, your GP may administer a steroid injection. Sometimes your GP may prescribe a short term course of sleeping tablets. Good sleep may help relax

the patient and alter his/her perception and susceptibility to pain. In some severe cases, your GP may need to refer you to a specialist in rheumatology or orthopaedics. In the case of carpal tunnel syndrome, if pain killers and steroid injections do not work, an operation which cuts the ligament that is pressing on the nerve may be required. Infact, this operation is needed in up to 50% of people suffering from carpel tunnel syndrome. The operation is often successful but healing can take several months.

### **Physiotherapist**

Chartered physiotherapists are also very skilful at diagnosing and treating RSIs. A physiotherapist can help the patient adopt proper posture, as well as teaching him/her to strengthen muscles. A physiotherapist may use electrotherapy. This involves small electrical impulses being placed at specific points of the body to help reduce pain.

### **Occupational Therapist**

An occupational therapist can assess factors that are causing RSI's and help adopt measures to reduce symptoms. Factors an occupational therapist takes into account are ways of minimising strain when working on computers including devices that can reduce risk of injury. An occupational therapist will also advise on posture, breaks, improvements in the work environment and ways of reducing levels of stress. Many large companies and organisations will employ an occupational therapist to advise on how to reduce the risk of RSIs among employees.

### **Other options**

An Osteopath is another healthcare professional who can help with RSIs. An osteopath can help determine the cause of the problem and an osteopath can use techniques such as stretching and massage to treat injured muscles, tendons and ligaments as well as mobilisation of specific joints and soft tissues.

Other activities that can provide relief from RSIs include walking, swimming, yoga, tai chi, acupuncture and relaxation techniques such as meditation.

Through the use of preventative techniques and with professional help, many people completely or partially relieve the symptoms of RSIs. However, in some cases there is no cure so unfortunately in these cases, the sufferer must give up the job or activity causing the problem.

### **How can Omega 3's give relief?**

Omega 3s have an anti-inflammatory effect, which reduces the pain and stiffness associated with inflammation. Lyprinol<sup>®</sup> is a highly potent anti-arthritis omega 3 supplement available in Whelehans Pharmacy. Trials have shown that Lyprinol<sup>®</sup> has 200 to 300 times more anti-inflammatory potency than other Omega 3 supplements and is as effective as prescription medicines for inflammatory conditions such as repetitive strain injury.

**Disclaimer: Please ensure you consult with your healthcare professional before making any changes recommended**

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