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## Repetitive Strain Injury (RSI)

Repetitive strain injury (RSI) is a condition where pain and other symptoms occur in an area of the body which has done repetitive tasks (often the arms or hands). Repetitive strain means strain related to actions which are frequently repeated.

### What is repetitive strain injury?

The term repetitive strain injury (RSI) is used to describe a range of painful conditions of the muscles, tendons and other soft tissues. It is mainly caused by repetitive use of part of the body. It is usually related to a task or occupation but leisure activities can also be a cause. Unlike a normal strain following a sudden injury, symptoms of RSI can persist well beyond the time it would take symptoms of a normal strain to ease.

You may also see the term overuse injury. This is a general name for conditions in which the muscles, tendons or soft tissues are used excessively but, unlike RSI, do not necessarily involve repetition of the same movement.

### Which areas of the body are affected by repetitive strain injury?

Symptoms depend on what the repetitive actions are. In most cases the symptoms develop in an arm, wrist or hand, as these parts of the body most commonly do repetitive tasks. In recent years it is computer operators, typists, musicians and people doing repetitive tasks in factories who most commonly develop RSI. In wheelchair users it's often the shoulders which are jerked when the chair is manually propelled. People who do a lot of DIY around the house may develop RSI, or people who do certain sports which involve repetitive movements.

### What are the symptoms of repetitive strain injury?

The symptoms tend to develop gradually. At first the symptoms may only occur whilst you do the repetitive task and ease off when you rest.

RSI symptoms in the affected area can include:

- Pain
- Tightness
- Dull ache
- Throbbing
- Numbness
- Tingling

The symptoms tend to develop gradually. At first the symptoms may only occur whilst you do the repetitive task and ease off when you rest. In time the symptoms can be present all the time but tend to be made worse by doing the repetitive task. Symptoms can range from mild to severe.

Some people divide RSI into two main categories: Type 1 RSI and Type 2 RSI.

#### Type 1 RSI

This includes well-defined syndromes such as:

- Carpal tunnel syndrome: pain and squashing (compression) of a nerve in the wrist.
- Tendinopathy: inflammation of a tendon.
- Tenosynovitis: inflammation of a tendon sheath.

See separate leaflets called [Carpal Tunnel Syndrome](#) and [Tendinopathy and Tenosynovitis \(Tendinosis\)](#) for more details. These conditions may be due to, or be made worse by, repetitive tasks. However, these syndromes are also common in people who have not done repetitive tasks. These syndromes may have other symptoms such as swelling, inflammation, nerve compression problems, etc.

#### Type 2 RSI

This is where symptoms do not fit into a well-defined syndrome. Also, there are no objective or measurable signs such as inflammation, swelling or problems with nerve function. It is sometimes called diffuse RSI or nonspecific pain syndrome.

### What causes repetitive strain injury?

The main cause is frequent and repetitive movements of the same part of the body - for example, typing, using a computer mouse a lot, etc. Other factors may contribute, such as poor posture whilst doing the movement, using excessive force whilst doing the movement and not having enough breaks from the task.

However, the precise reason why RSI develops is not clear. In many cases there is no swelling or inflammation and there are no other obvious problems which develop in the muscles or tendons, and yet symptoms develop. Also, it is not clear why some people develop RSI and not others who do the same repetitive tasks.

Research suggests that psychosocial workplace factors (which usually means stress at work) can also contribute to RSI. It may be that stress increases muscle tension and/or affects how the body feels pain in general.

## How is repetitive strain injury diagnosed?

There is no test that a doctor can do to diagnose RSI. This is where difficulties may arise. Pains in the areas affected by RSI are common and can be due to various causes.

If you develop a well-defined condition, such as carpal tunnel syndrome, frozen shoulder, tendinopathy, etc, it may or may not be related to repetitive tasks. Biomechanics may help to sort this out. Biomechanics use the science of mechanics to study the way various parts of the body move. In certain sports, for example, biomechanics have discovered that people sometimes overstretch their muscles when doing various movements, such as kicking a football. Some wheelchair users have been found to jerk their shoulders when manually propelling their chairs, leading to persistent pain in the joint. This sort of information can help to plan treatment strategies.

[Blood tests](#) are sometimes done to rule out inflammatory joint disease. [X-rays](#), scans or [nerve conduction tests](#) may be needed if surgical treatment of a Type 1 condition is being considered. Otherwise, the diagnosis is usually made on the basis that the condition developed only following a repetitive task and is relieved or partially relieved by rest from that task.

## How can I treat repetitive strain injury?

To date, studies have not found good evidence to support any of the available treatments for RSI. There is no evidence that any treatment is positively harmful, so it is worth carrying on with conventional approaches until more information becomes available. It has always been advised, for example, that the earlier the problem is recognised and dealt with, the better the outcome. A doctor may advise various things such as:

- Stopping or reducing the tasks or activities which seem to be causing the symptoms. This may be easier said than done if your job or livelihood depends on the task. If possible, discuss the problem with your employer. A change of task, or changes to your work environment, may be possible.
- Looking into practical ways of adjusting your work set-up so as to reduce strain. Larger companies often have an occupational health department which can carry out an assessment. In smaller companies, you can ask your employer about an occupational health assessment.
- Taking [anti-inflammatory medicines](#), although recent studies suggest that [simple painkillers](#) such as [paracetamol](#) work just as well.
- Taking [muscle relaxant tablets](#) and a low dose of a [tricyclic antidepressant](#).
- Seeing a physiotherapist who can give advice to help with posture and how to strengthen or relax the muscles involved. Physiotherapists can also offer other treatments such as:
  - [Transcutaneous electrical nerve stimulation \(TENS\)](#) which uses a mild electrical current to block pain signals.
  - Ultrasound therapy.
  - Infrared wave treatment.
- Trying relaxation techniques and regular general exercise (such as swimming), which some people find useful in easing the symptoms.
- Having an injection of steroid, sometimes combined with a local anaesthetic, into an area which has definite inflammation, such as a tenosynovitis or carpal tunnel syndrome.

Symptoms often ease with the above measures. It is then wise to review your work or other activities to prevent further bouts of RSI. For example:

- If you work with a computer: is your seat, keyboard, mouse, etc, positioned in the correct way with the least strain likely on your hands and fingers?
- Do you work with a good posture? Do you sit correctly if you have a desk job?
- If you do a repetitive task at work, do you get enough breaks?
- Is there anything your employer could do to improve your working environment?
- If you are under stress at work, is there anything you or your employer could do to improve this? If a lot of people at work have RSI, your employer may consider asking an occupational therapist for advice.

## What is the outlook for repetitive strain injury?

Most people with RSI recover in three to six months. Prevention and treatment measures speed up recovery. However, some people develop symptoms that persist long-term, which can be debilitating. Sometimes a change of job is the only answer.

## Further reading & references

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