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Work Related Upper Limb Disorders

A rising tide of litigation has highlighted a growing problem of work related upper limb disorders (WRULDs), including the non-specific arm pain popularly known as RSI which is increasingly prevalent amongst keyboard workers.

This paper discusses the variety of work related upper limb disorders, the legislation and guidance in place to protect the worker, and issues of compensation.

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Summary

Changes in work practices, in particular the introduction of the keyboard have co-incided with a growing problem of work related upper limb disorders (WRULDs). The term repetitive strain injury (RSI) has been popularly applied to non-specific arm pain associated with repetitive movements and frequently implying an occupational cause.

This paper discusses the controversy surrounding the nature and cause of these conditions. There are problems in terminology. In medical circles the unwieldy term 'work related upper limb disorders' is now preferred, whereas RSI remains in popular parlance. The range of specific and non-specific upper limb disorders which may be related to work is discussed. Physical and psychosocial factors which may promote WRULDs, together with preventative measures and management of the conditions are addressed, with particular emphasis on the non-specific WRULDs.

Legislative control is affected through the *Health and Safety at Work etc. Act 1974* and the 'six-pack' regulations made under it. These reflect the EU Framework Directive on health and safety and daughter directives.

Compensation for industrial injury may be sought through the civil courts for breach of statutory duty and/or breach of common law duty of care.¹ In addition, compensation can be claimed under the social security system.

¹ The authors would like to thank Arabella Thorp who provided invaluable guidance about the breach of statutory duty and common law duty of care.

I Variety and nature of Work Related Upper Limb Disorders

A. Introduction and terminology

The term Repetitive Strain Injury, or RSI, has been popularly applied to a condition in which repetitive movements are associated with chronic incapacitating forearm pain and disability, and more specifically to occupational causation of arm pain. Lack of objective measurements in a condition with diverse symptoms, few physical signs, and uncertain pathology is a major problem,² and has been a matter of contention for a number of years. Evidence linking the condition with repetitive movement is plentiful but largely circumstantial.

Confusion over the nature of the condition has been reflected in the change of nomenclature and definition. A variety of terms have been used including overuse syndrome, chronic occupational pain and cumulative trauma disorder. The most popular of these descriptive terms is RSI. These terms have been criticised because they suggest a pathological mechanism that is usually not proved.

The term now preferred, “Work Related Upper Limb Disorders (WRULDs)”, does not define the pathological mechanism, nor the diagnostic criteria but encompasses a range of conditions affecting the soft tissues and nerves of the hand, wrist, arm, elbow, shoulder and neck. Repetitive movements or sustained posture may result in a range of symptoms. These include pain, tingling, pins and needles, swelling, reduced ability to move the affected limb, stiffness and cramp. Though symptoms usually disappear with rest, they can lead to permanent disability particularly in individuals with existing musculoskeletal disorders.

The term WRULD, although unwieldy, is technically more precise than RSI as the symptoms described above can also arise from the non-repetitive handling of heavy loads. It may be caused by a single strain or trauma, not necessarily a repetitive or cumulative one. Furthermore, both psychological and social factors play an important role in the genesis and perpetuation of work related musculoskeletal disorders. The World Health Organisation considers the cause of such work related musculoskeletal disorders to be multifactorial.³

² “Thermographic changes in keyboard operators with chronic forearm pain” SD Sharma et al. *British Medical Journal* vol 314 11 January 1997

³ “ABC of work related disorders” 17 August 1996 *British Medical Journal* vol 313

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Some well defined WRULDs (e.g. tenosynovitis and carpal tunnel syndrome)⁴ are recognised by Government as prescribed in relation to specific occupations, thus acknowledging that the link between work in that occupation and disease can reasonably be presumed. While regulations to guard against development of the variety of disorders covered by this term are in place, there is often difficulty in obtaining compensation, due to the problems in obtaining evidence of causation.

B. History of WRULDs

Recognition of pain and disability in relation to repetitive movement is not new. In 1713 the Italian physician Bernardino Ramazzini observed that clerks suffered from a condition caused by “incessant movement of the hand – always in the same direction”. Similarly, symptoms of writer’s cramp reported in the British civil service 160 years ago, were thought to be due to the introduction of the steel nib.

In 1908 telegraphist’s cramp was included in the schedule of diseases that was covered by the *British Workmen’s Compensation Act* of 1906. Subsequently, within a period of three years 60 per cent of the workforce were reporting symptoms of muscle weakness, cramp or pain which they attributed to the new technology. As a result a committee was established which reported the cause as being to “a nervous instability on behalf of the operator and to repeated fatigue during the complicated movements required for sending messages”. The psychological aspects contributing to the condition were emphasised, and the term “nervous breakdown” was coined.⁵

A dramatic increase in what became known as RSI occurred in Australia in the late 1970s and mid-1980s. A rise in upper limb disorders was also causing concern in Finland, Japan, Russia, the US and UK during the same period.⁶ The rates of reported upper extremity disorders in the US tripled between 1986 and 1993.⁷ This rise coincided with the widespread replacement of typewriters with computer keyboards. It is paradoxical that introduction of lighter, easier machines should result in an increase in these work related problems. Due in part to the Australian “epidemic” and the rising tide of litigation in the mid-to-late 1980s, opinions became polarised between those who saw a real occupational health problem developing, and those who failed to see any real demonstrable medical condition. Some commentators thought the problem was due to constitutional factors, exaggerated or extended by emotional or psychological overlay, and possibly to involvement of the middle classes. At the far end of the spectrum it was considered to be mass hysteria with an element of joining

⁴ Tolley’s Health and Safety at Work Handbook 1998 01046

⁵ *Journal of psychosomatic research* 1994 vol 38 no6 p 493-498 Editorial “Repetitive Strain Injury”

⁶ “Work related upper limb disorders – the situation today” Christopher Hayne, Chartered Physiotherapist of Human Factors Occupational Safety and Risk Management, *Croner Health and Safety Briefing* 15 September 1997 p5

⁷ *The Lancet* 1997; 349: 943-47 “Repetitive Strain Injuries”

the bandwagon. In addition, the term RSI was more often used than repetitive strain disorder, in a move which reflected the rising numbers of employees embarking upon litigation. In Australia, claims had grown to such a level that the government changed the compensation system so that symptoms associated with using keyboards were no longer compensated.⁸ The incidence of the condition subsequently declined. There has been much debate in the medical press about the reality of the condition, and the relation to compensation:

A country's compensation system has a great effect on the reporting and control of work related disorders. In Sweden there has been a substantial decrease in reported work related diseases, possibly due to an increased demand for evidence of work-relatedness before compensation is approved. A generous compensation scheme can lead to patients becoming medicalised and lacking the motivation to attempt rehabilitation. However, a compensation scheme that facilitates early reporting of work related disorders allows early identification of hazards that may constitute a serious hazard to the workforce.⁹

Another commentator has said:

Symptoms of pain, numbness, swelling and weakness are frequent in those carrying out repetitive actions of the upper arms, are related to their work, and are in the vast majority of cases unrelated to psychiatric factors. However, those who are depressed, who are dissatisfied with their work, who believe they have been injured by activities at work and who are involved in compensation are more likely to have persistent symptoms. Attitude and attributional factors are more important than physical or mental illness in maintaining symptoms. Attitude to the work environment and psychological adjustment in those with severe or persistent symptoms is more likely to explain the condition than close adherence to the medical model of illness.¹⁰

Some orthopaedic experts hold the opinion that RSI is not a valid pathological condition. The British Orthopaedic Association undertook a review of the published literature and advised the Industrial Injuries Advisory Council (an independent statutory body) that, with the exception of writer's cramp and tenosynovitis, there is insufficient conclusive evidence of occupational causation to prescribe any further types of "repetitive strain injuries".¹¹ On the other hand, ergonomists, physiotherapists, chiropractors, lawyers, Health and Safety inspectors and trade unionists conclude that, in spite of problems of definition, these disorders comprise a growing phenomenon.

⁸ "ABC of work related disorders" Mats Hagberg, Professor of work and environmental physiology at the National Institute for Working Life, Solna, Sweden 17 August 1996 *British Medical Journal* vol 313

⁹ *ibid*

¹⁰ *Journal of psychosomatic research* 1994 vol 38 no6 p 493-498 Stephen Tyrer Editorial "Repetitive Strain Injury"

¹¹ "Occupational causes of disorders in the upper limb" N J Barton et al *British Medical Journal* vol 304, 1 February 1992 p309-311

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In recent years, a consensus towards recognition and management of the problem has been developing:

There are signs of a more objective and rational approach to the subject of WRULDs and a basic agreement that, like any other occupational health problem, WRULDs need to be managed and that preventive measures are preferable to sickness absence, reduced production and litigation.¹²

C. Size of the problem

In the wider context of WRULDs, problems are not limited to occupations traditionally associated with repetitive work such as keyboard workers. The following list of the industries and groups of workers in the UK with a particularly high risk of WRULDs indicates the scale of the problem:¹³

- Electronics and telecommunications
- Armed forces
- Construction workers
- Poultry and food processing
- Garment and carpet manufacture
- Domestic appliance manufacture
- Packing and manufacture of small items eg biscuits
- Cleaning operations involving the use of heavy polishers
- Display screen equipment users
- Supermarket checkout operators
- Laboratory technicians

1. Prevalence

Studies by the Health & Safety Executive in 1990 and 1995-96 have attempted to ascertain the true one year prevalence¹⁴ of work-related illness. The 1995-96 survey¹⁵ interviewed around 1,500 people reporting a recent work-related illness in the quarterly *Labour Force Survey* about the nature and origin of their condition. Interviewees' accounts were confirmed through GP assessment. By grossing up the results from this sample, the report attempts to estimate how many people in the population of Great Britain as a whole suffer from an illness

¹² "Work related upper limb disorders – the situation today" Christopher Hayne, Chartered Physiotherapist of Human Factors Occupational Safety and Risk Management, *Croner Health and Safety Briefing* 15 September 1997 p5

¹³ Adapted from "Work related upper limb disorders – the situation today" Christopher Hayne, Chartered Physiotherapist of Human Factors Occupational Safety and Risk Management, *Croner Health and Safety Briefing* 15 September 1997 p5 [no order of importance implied]

¹⁴ The number of people affected by a particular condition within a one year period.

¹⁵ HSE *Self-reported work-related illness in 1995*

related to their work. This section summarises their findings relating to musculoskeletal disorders of the upper limbs and neck and vibration white finger.

Because of the survey's small sample size, the estimates for the population as a whole must be treated with caution. National estimates are given as a single figure together with the lower and upper ends of the 95% confidence range.¹⁶

302 respondents reported a musculoskeletal condition affecting their upper limbs or neck,^{17,18} suggesting that 506,000 people (confidence range 447,000-565,000) in Great Britain as a whole suffer from such a condition. This estimate suggests that slightly over one in a hundred people ever employed were affected. Prevalence was around 30% higher in women than in men and, for both sexes, increased with age. 38% of respondents attributed their condition to "repetitive work", 37% to "manual handling", 23% to "posture" and 10% to "physical work".¹⁹ Four occupational groups – the armed forces, construction workers, textile processing workers and other processing workers – have particular high rates of prevalence. The survey suggests that over two in every hundred people employed in one of these occupations is affected.

Nineteen people, all men, reported vibration white finger, suggesting that 36,000 (confidence range 19,000-53,000) men in Great Britain suffer from this condition. Two-thirds of respondents reported difficulties in picking up and handling small objects because of their condition. All respondents reported use of hand held power tools as the cause of their condition.

D. Range of Work Related Upper Limb Disorders

All the tissues of the musculoskeletal system can be affected by occupationally related disorders.

Involvement of the joint can lead to inflammation and the degenerative changes of arthritis. Inflammation of the tissues around the joint can cause a range of conditions including tenosynovitis (inflammation of the tendons and surrounding synovial sheaths)²⁰ and bursitis (soft tissue inflammation). The muscles can suffer cramp, fatigue and inflammation. Nerves can become entrapped and inflamed and bones may be subject to stress fractures. Presenting

¹⁶ The range within which it can be said with 95% certainty that the true value lies.

¹⁷ HSE *Self-reported work-related illness in 1995* Table 70 page 159

¹⁸ Carpal tunnel syndrome, frozen shoulder, tenosynovitis, RSI tennis elbow and golfer's elbow.

¹⁹ Respondents could cite more than one cause.

²⁰ Surrounding membrane that produces lubricating fluid

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symptoms include pain, tingling, pins and needles, swelling, reduced ability to move the affected part, stiffness and cramp.

1. Specific WRULDs

Within the range of WRULDs a number of specific pathological disorders can be clearly identified.

The following table²¹ shows some of the more common specific identifiable WRULDs

Medical condition	Symptoms	Associated activities
Bursitis: Inflammation of the soft pad of tissue between skin and bone, or bone and tendon. Can occur at the elbow (known as beat elbow) and shoulder (frozen shoulder).	Pain and swelling at the site of the injury	Pressure at the elbow, repetitive shoulder movements. Assembly line workers are particularly liable to beat elbow.
Carpal tunnel syndrome: Pressure on the nerves which pass up the wrist.	Tingling, pain and numbness in the thumb and fingers, especially at night.	Repetitive work with a bent wrist. Use of vibrating tools. Sometimes follows tenosynovitis
Cellulitis: Infection of the palm of the hand following repeated bruising (called beat hand)	Pain and swelling of the palm.	Use of hammer tools, like hammers and shovels, coupled with abrasion from dust or dirt.
Epicondylitis: Inflammation of the area where bone and tendon are joined. Called tennis elbow when it occurs at the elbow.	Pain and swelling at the site of the injury.	Repetitive work, often from strenuous jobs like joinery, plastering, bricklaying.
Ganglion: A cyst at a joint or in a tendon sheath. Usually on the back of the hand or wrist.	Small, hard round swelling, usually painless.	Repetitive hand movement.
Osteo-arthritis: Damage to the joints resulting in scarring at the joint and the growth of excess bone.	Stiffness and aching in the spine and neck, and other joints.	Long-term overloading of the spine and other joints.

²¹ Adapted from Tolley's Health and Safety at Work Handbook 1998 010/19

Medical condition	Symptoms	Associated activities
Tendinitis: Inflammation of the tendons.	Pain, swelling, tenderness and redness of the hand, wrist, and/or forearm. Difficulty in using the hand.	Repetitive movements.
Tenosynovitis: Inflammation of the tendons and surrounding tendon sheaths.	Aching, tenderness, swelling, extreme pain, difficulty in using the hand.	Repetitive movements, often non-strenuous. Can be brought on by sudden increase in workload or by introduction of new processes.
Tension of the neck or shoulder: Inflammation of the neck and shoulder muscles and tendons.	Localised pain in the neck or shoulders.	Having to maintain a rigid posture.
Trigger finger: Inflammation of tendons and/or tendon sheaths of the fingers.	Inability to move fingers smoothly, with or without pain (finger becomes "locked" in a bent position).	Repetitive movements. Having to grip too long, too tightly, or too frequently.

A further disorder affects the blood supply to one or more fingers:

Medical condition	Symptoms	Associated activities
Vibration white finger: Vascular spasm (constriction of small blood vessels) and neurological changes in fingers and forearm; extensive changes called "hand-arm vibration syndrome".	Painful white fingers particularly in cold weather (Raynaud's phenomenon). Also tingling, numbness, loss of manual dexterity.	Use of power hand held vibration tools, such as chain saws, compressed air pneumatic hammers and rotary tools.

2. Non-Specific Arm Pain

There remains a proportion of WRULDs which comprise non-specific use-related pain and fatigue in the forearms associated with non-specific physical signs such as diffuse tenderness. The term non-specific arm pain is employed for these sufferers, and some still refer to this as RSI. Workers as diverse as keyboard operators, hairdressers, packers, assembly workers and pianists can be affected. Though symptoms usually disappear with rest, they can lead to permanent disability particularly in individuals with existing musculoskeletal disorders.

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3. Occupational link

It is important to remember that most conditions that can be categorised as WRULDs also occur without any connection to occupation. They can be the result of leisure, sport and domestic activities, and the specific cause can often be difficult to confirm. In addition it may be that the presenting “occupational” complaint is the first indication of any one of a number of chronic rheumatic conditions which are common in the general population. For example, isolated carpal tunnel syndrome²² can be a presenting feature of rheumatoid arthritis, hypothyroidism,²³ and systemic lupus erythematosus,²⁴ as well as being of occupational or idiopathic²⁵ origin.

Because the rheumatic diseases are common, it is likely that some employees will be able to attribute their symptoms to these conditions. Only up to 20 per cent of musculoskeletal disorders which affect the neck, and upper limbs can be satisfactorily linked to work activities.²⁶

Ergonomic factors, or conditions associated with the nature of the job or work, have particular impact in the generation of WRULDs. Symptoms may be associated with repetitive movements of low impact, sustained posture, repeated heavy impact loading (for example in coalface workers, farmers and less obviously in professional dancers).

Some examples include:²⁷

- working with the hands at or above shoulder level may be a factor in generation of shoulder tendinitis in assembly workers
- neck flexion while working at a visual display unit (VDU) may be associated with non-specific neck and shoulder symptoms – neck pain is more prevalent amongst workers who flex the neck more acutely.
- Use of a computer mouse may result in adoption of new postures resulting in a combination of symptoms at the wrist and shoulder. Work tasks of long duration with flexed and, to some extent extended wrists, have been reported as risk factors for carpal tunnel syndrome.

²² pain and tingling in the hand and arm due to pressure on the median nerve at the wrist

²³ underactive thyroid

²⁴ A chronic inflammatory disease of connective tissue

²⁵ arising spontaneously, of no known origin

²⁶ “Work related upper limb disorders – the situation today” *Croner Health and Safety Briefing* 15 September 1997 p5

²⁷ “Neck and arm disorders” Mats. Hagburg *British Medical Journal* vol 313, 17 August 1996

It has become apparent that there is often no simple explanation for the onset of WRULD symptoms. There may be a number of contributory factors which interact. While physical factors such as excessive stress on joints, poor posture and repetitive tasks with insufficient rest periods may interact to cause symptoms, in some individuals psychosocial factors may also play a part. Peer pressure or workers incentive schemes, for example, may lead a worker to attempt to complete a task quickly with insufficient rest breaks. Lack of knowledge may also be a factor – it is essential that workers are well informed and can therefore guard against these problems.

Some of the factors which may interact to produce symptoms of WRULDs are detailed below.²⁸

Physical factors	Psychosocial factors
Systems of work/poor postures	Job demands
Stressful upper limb postures	Job complexity
Repetitive actions and short cycle tasks	Job security
Excessive joint loading	Perceived threat of technological advances
Static muscle work	Interpersonal relationships
Inadequate rest pauses	Lack of knowledge
Noise, light, heat etc.	Work incentive schemes
Individual susceptibility	Peer pressure
Pre-existing medical conditions	Desire to conform

E. Management and prevention

Following increased recognition of the problem of WRULDs, including non-specific arm pain, management and prevention are now being addressed.

The clinical course of non-specific arm pain may be considered in three stages:²⁹

- Stage 1 During this stage most patients experience aching and weakness during the work activity, but improve during days off work. There are no physical signs and no interference with work. This stage may last several weeks or months.

²⁸ “Work related upper limb disorders – the situation today” *Croner Health and Safety Briefing* 15 September 1997 p.5

²⁹ *The Lancet* vol 349 March 29 1997 “Repetitive strain injuries”

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- Stage 2 Symptoms begin more quickly, persist for longer, and interfere with work. Physical signs may be present, and sleep may be disturbed. The stage may last for some months.
- Stage 3 Symptoms are present even at rest. Non-occupational activities and sleep are disturbed, and the patient is unable to carry out light duties. This stage may persist for months or years, and the outlook is generally poor.

There is a consensus of opinion that early treatment reduces ultimate disability, and therefore early reporting and intervention should be encouraged. WRULDs with a specific diagnosis may require specific intervention, including surgery in some cases. However, the following general principles of management apply, especially for the non-specific WRULDs.

The most effective preventative measure, which is also a part of early treatment of a developing WRULD, is to reduce or eliminate exposure to the ergonomic hazards associated with the disorder. This can be achieved by regular rest breaks, job rotation, restricted duty or temporary job transfer. Complete removal from the work environment should be reserved for those with severe disorders or when job modifications or other work assignments are not available.

Any necessary ergonomic modifications to the workstation should also be carried out early on and ideally be replicated on all workstations as a preventative measure. Indeed, ergonomic factors should be considered in engineering design of equipment.

The focus of medical intervention is to rest the part with symptoms and to reduce soft-tissue inflammation. Cold treatment can reduce symptoms associated with tendon-related disorders, and anti-inflammatory drugs³⁰ (aspirin and other non-steroidal anti-inflammatory agents) can reduce soft-tissue inflammation. Splinting the affected part is worthwhile in some circumstances, but care must be taken that their use does not lead to muscle wastage. Physiotherapy can be useful in treatment and rehabilitation. Relaxation and exercises, heat application, massage and ultrasound treatment can all be helpful. Stretching exercises should initially be done under supervision to ensure they are correctly performed, and do not aggravate the injury.

For most people ergonomic interventions and conservative treatment³¹ will provide relief. If conservative measures fail local injection of anaesthetic agent and a corticosteroid may be indicated in some cases,³² and in a few surgery will be required. For example, in carpal tunnel syndrome, where conservative treatment fails, surgery may sometimes be necessary to relieve pressure on the median nerve.

³⁰ "Repetitive Strain Injuries" *The Lancet* 29 March 1997

³¹ Treatment aimed at preventing the condition from becoming worse, in the expectation that the natural healing will occur, and no drastic treatment will be necessary

³² "Repetitive Strain Injuries" *The Lancet* 29 March 1997

Some patients with non-specific WRULDs do, however, develop an intractable problem. Pain and disability may subside when the limb is rested only to return when the patient resumes normal work activities. These individuals may have to change their work methods, for example by dictating work for others to type up, or by using voice activated word processors.

The general principles of managing hand and arm pain in keyboard operators can be summarised.³³

- Exclude clear pathological causes such as carpal tunnel syndrome
- Reassure patient that the condition is curable
- Keep patient at work if possible but away from keyboard work if necessary
- Monitor patient's progress with regular follow up
- Explore psychological profile, including attitudes to work and support from management and colleagues
- Liaise with patient's workplace, if possible with an occupational physician or nurse
- Ensure that workstation ergonomics have been evaluated and are satisfactory and that patient has been taught to use the equipment properly and has the right glasses
- Enquire about variation of work tasks, work or job rotation
- Hospital admission is rarely needed, physiotherapy may be appropriate for some
- Those few patients who do not respond to this multidisciplinary management may eventually have to be trained to use voice activated word processors etc.

F. Theories to explain diffuse WRULD and research

Various hypotheses have been put forward to explain symptoms of non-specific arm pain of diffuse WRULD. These include the suggestion that abnormal postures producing overuse of one set of muscles and underuse of an opposing set, causes pain and tension in the muscles. In addition, certain positions of the limb increase pressure on or stretching of nerves. If both chronic tension and direct mechanical compression occur together this can result in decreased blood flow to the nerve producing scarring in and around it and leading to tethering and nerve compression.³⁴

An alternative theory put forward by Fry in 1988, proposed that muscle overuse leads to a direct painful sequelae (resulting conditions) and changes to muscle fibres.³⁵ He reported

³³ "ABC of work related disorders" Mats Hagberg, Professor of work and environmental physiology at the National Institute for Working Life, Solna, Sweden 17 August 1996 *British Medical Journal* vol 313

³⁴ "Repetitive motion injuries" Philip E Higgs et al *Ann. Rev. Med.* 1995, 46:1-16

³⁵ Dennet X, Fry HJH 1988 "Overuse syndrome: a muscle biopsy study" *Lancet* 1: 905-8

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changes in muscle biopsy specimens. However, others have suggested that when compared to controls (ie “normal” specimens), these changes were not significant.³⁶

Neurogenic theories suggest that nerves are sensitised by mechanical irritation and traction caused by overuse.³⁷ The nerve becomes less tolerant of compression and stretching. Muscle tenderness is explained on the basis of referred pain³⁸ in the distribution of the sensitised nerves.

Since the non-specific WRULDs present with few physical signs, lack of objective measurements is a major problem in achieving a diagnosis. Efforts have been directed to address this.

A research study reported in 1997³⁹ assessed heat changes in the hands in keyboard operators suffering from non-specific chronic forearm pain. The authors suggest that heat measurements could possibly be used as a diagnostic tool to evaluate non-specific arm pain, and to monitor progress during treatment. Although further work is needed in this field it offers the exciting possibility of quantitative measurement of non-specific WRULD.

Another study (by Lynn and co-workers)⁴⁰ measured vibration thresholds in sensory nerves running up the arm (median, ulnar and radial). Researchers found that keyboard operators who suffered diffuse arm pains, had raised vibration thresholds for the median and ulnar nerves, (which meant that they were less able to feel low intensity vibrations). The control group of office workers had raised vibration thresholds only for the median nerve. The patient group felt more pain than the control group when their tolerance to vibration was tested by making the stimulus stronger. The authors say:

Patients with repetitive strain injury have objective signs of minor polyneuropathy,⁴¹ with the median nerve being more severely affected than the ulnar nerve or radial nerve⁴².

³⁶ “Occupational causes of disorders in the upper limb” N J Barton et al *British Medical Journal* vol 304, 1 February 1992 p309-311

³⁷ “Repetitive motion injuries” Philip E Higgs et al *Ann. Rev. Med.* 1995, 46:1-16

³⁸ Referred pain is felt at a site other than the injured part. Sensory nerves converge before they enter the brain, causing confusion about the source of the pain signals.

³⁹ “Thermographic changes in keyboard operators with chronic forearm pain” SD Sharma et al. *British Medical Journal* vol 314 11 January 1997

⁴⁰ “Vibration sense in the upper limb in patients with RSI and a group of at-risk office workers” Dr Bruce Lynn et al *International archives of occupational and environmental health* vol 71, p29-34 11 February 1998

⁴¹ disease involving all of the peripheral nerves in the area

⁴² See footnote 39

They are optimistic that the use of vibration testing, which is relatively inexpensive to carry out, may offer a simple way to monitor the progress of patients with non-specific WRULD. Dr Lynn accepts that more research is needed before a link between vibration loss and non-specific WRULD can be established. Furthermore, this was a small study and more work is needed on a larger group of sufferers to establish causation and pin point areas of nerve damage.⁴³ The Health and Safety Executive argues that a precise definition for RSI remains elusive.⁴⁴

Current research in the ergonomic field being carried out by the Health and Safety Executive includes:⁴⁵

- A study of musculoskeletal disorders among users of floor cleaning machines;
- the development of a practical procedure to evaluate change in exposure to risk of musculoskeletal disorders;
- manual handling (weightload/frequency of lift)
- guidance on manual handling in the construction industry through case studies
- the discomfort associated with display screen equipment
- a case-control study of osteoarthritis of the knee
- the development of “tools” (procedures) to study the health effects of virtual reality use

Planned projects for 1998/99 include:

- Review of the current medical management of Upper Limb Disorders
- Investigation of muscle fatigue and biomarkers
- Survey of user’s views on the acceptance, use and compliance of back support belts

⁴³ 21 February 1998, British Medical Journal

⁴⁴ *New Scientist* 14 February 1998 “A call to arms”

⁴⁵ <http://www.open.gov.uk/hse/mrm9899c.htm#1>

II Legislation and guidance

A. The Health and Safety at Work etc Act 1974

Historically, control of workplace health and safety in the UK was by means of industry-specific legislation. Following the Robens report⁴⁶ in 1972 this approach was altered. The recommendations of the report were implemented in the *Health and Safety at Work etc Act 1974* (cap 37) which created a more consensual approach towards occupational health and safety laying down general duties applicable to *all* workplaces. This Act imposes a general duty on "every employer to ensure, so far as is reasonably practicable, the health, safety and welfare at work of all his employees". There are also general duties requiring employers and employees to safeguard the health and safety of members of the public. It is arguable that if these provisions were applied to the letter of the law WRULDs would be prevented. The Act, however, allows for the introduction of secondary legislation in the form of specific regulations and codes of practice which aid this process. In particular recent regulations starting with the 'six-pack', which enact EC Directives, have placed a more explicit duty on employers to assess and remove risks in the workplace.

B. The 'Six-Pack'

The Single European Act 1986⁴⁷ inserted Article 118A into the Treaty of Rome and this allowed health and safety directives to be adopted by qualified majority voting. This led to the introduction of a key health and safety measure commonly called the Framework Directive (89/391/EEC).⁴⁸ It laid down general duties on employers and employees, analogous to the UK's *Health and Safety at Work etc Act*, for European countries that did not have the benefit of such an all-embracing measure. In addition it required employers to assess risks at work to employees and others and to take steps to reduce and prevent them.

The Framework Directive and five daughter directives were adopted in the UK at the same time, at the beginning of 1993, as a set of regulations usually referred to as the 'six-pack'. These are:

⁴⁶ Report of the Committee on Safety and Health at Work Cmnd 5035 1972

⁴⁷ implemented in UK by *European Communities (Amendment) Act 1986* cap58

⁴⁸ Note- There are other framework directives on different issues. Such directives establish general principles from which further directives flow.

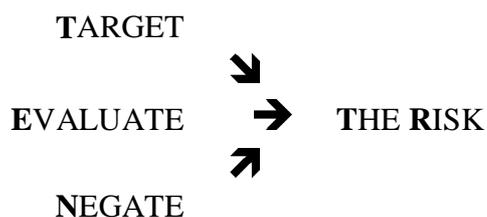
- The Management of Health and Safety at Work Regulations 1992 (SI 1992/2051)
- The Manual Handling Operations Regulations 1992 (SI 1992/2793)
- The Health and Safety (Display Screen Equipment) Regulations 1992 (SI 1992/2729)
- The Provision and Use of Work Equipment Regulations 1992 (SI 1992/2932)
- The Workplace (Health, Safety and Welfare) Regulations 1992 (SI 1992/3004)
- The Personal Protective Equipment at Work Regulations 1992 (SI 1992/2966)

The key regulations are the Management of Health and Safety at Work Regulations that implement the Framework Directive. This and all of the five daughter regulations have implications for WRULD, but the most significant are the Health and Safety (Display Screen Equipment) Regulations.

1. The Management of Health and Safety at Work Regulations (SI 1992/2051)

These are a new departure in the law, imposing a positive duty on employers to assess risks to health on the assumption that there may be risks even if there is no obvious evidence of any. It is the *risk assessment* that is the cornerstone of these regulations, and it is essential that employers understand this and carry it out successfully because everything else follows from it.

There are a number of methods of carrying out risk assessments. One method, known as 'The Rule of TEN', provides an illustrative example of how such assessments can be applied to prevent WRULDs.⁴⁹ This three-stage concept is equally applicable to the factory or office:



⁴⁹ Croner's Health and Safety Briefing No133, 29 Sept 1997, p4-5.

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Each stage is further sub-divided as follows:

A. TARGET	B. EVALUATE	C. NEGATE
Understanding Observations Consultations	Posture Lay outs Task cycles Task frequency Task rotations Rest and recovery Work organisation Suitability of employees	Ergonomise Regulate Monitor Educate Encourage Involve Respond

The regulations require employers to:

- Make a suitable and sufficient assessment of the risks to their employees' health and safety and to identify measures to minimise them (reg 3);
- Make health and safety arrangements for the effective planning, organisation, control, monitoring and review of preventive and protective measures (reg 4);
- Provide appropriate health surveillance (reg5);
- Appoint one or more competent persons to assist in carrying out their duties (reg 6);
- Establish procedures to avert serious and imminent danger (reg 7);
- Provide relevant information to employees (reg 8);
- Provide health and safety training to employees both at recruitment and subsequently if there are new or increased risks due to change of work responsibilities, systems of work, new technology or equipment (reg 11).

2. Manual Handling Operations Regulations (SI 1992/2793)

Under these regulations manual handling means any transporting or supporting of a load, whether by lifting, putting down, pushing, pulling, carrying or moving it. These operations can be carried out by hand or body force. Injury implies damage to any part of the body, not only the back. Assessments should address the task, load, working environment and individual capability.

All employers are required to:

- Avoid, where reasonably practicable, the need for employees to undertake any manual handling operations involving risk of injury;
- Where avoidance is not reasonably practicable to:

- Make a suitable and sufficient assessment of the manual handling operation to be undertaken;
 - Reduce the risk of injury to the lowest level reasonably practicable;
 - Provide employees with general indications or, if possible, precise information about the weight, heaviest side and centre of gravity of a load.
(reg 4)
- All employees involved in manual handling operations must comply with the work system provided (reg 5).

3. Health and Safety (Display Screen Equipment) Regulations (SI 1992/2792)

The introduction of VDUs during the last decade has led to a range of health complaints by operators. It is reported that one in three suffers from eye strain, back pain or lethargy, while one in four complains of headaches.⁵⁰ The incidence of visual discomfort depends upon occupation. Symptoms include eye irritation, redness and soreness, temporary blurring and visual confusion. Some people experience spots, shapes, chromatic halos around objects, and photophobia (the dislike of lights). These often lead to headaches. Occasionally operators may suffer from photogenic epilepsy.

There are a number of methods of combating visual fatigue, these include the use of a non-reflective, protective VDU glare filter screen; limiting the length of each session and the proportion of the working day devoted to VDU work; and location of the screen and optimum use of window coverings to minimise glare.

Operators of VDU and associated equipment may also suffer from musculo-skeletal strain which presents itself as stiffness and tenderness on the neck, shoulders and forearms, and can lead to Repetitive Strain Injury (RSI) which is now termed work related upper limb disorder (WRULD).

The regulations require employers to:

- Assess, by making a suitable and sufficient analysis, the health and safety risks to all employees using a VDU workstation. These health risks are described as musculo-skeletal and postural problems, visual problems, mental stress and fatigue. This is mandatory for all employees including home-workers, temporary employees (temps), and the self-employed (reg 2);
- Reduce the risks identified (reg 2);

⁵⁰ Tolley's Health and Safety at Work Handbook 1998

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- Review the risk assessment if there are major changes to hardware, software, workstation furniture, or relocation of the workstation, modification of lighting, or changes to the VDU operators workload (reg 2);
- Ensure that workstations comply with the standards specified (reg 3);
- Plan work so that VDU work is periodically interrupted by breaks or other work so as to reduce the VDU workload (reg 4);
- Provide employees with an initial eye/eyesight test, subsequent tests at regular intervals, additional tests on request if employees are experiencing visual difficulties, and corrective glasses where normal glasses cannot be used. Employees cannot, however, be forced to take tests (reg 5);
- Provide health and safety training in the initial use of the workstation and whenever it is modified (reg 6);
- Provide health and safety information to enable employees to comply with regs 2-6 (reg 7).

The Health and Safety Executive has recently carried out a review of these regulations.⁵¹ As a result of this it has issued a revised guidance booklet⁵² which includes advice on recent developments such as the use of portable computers and work with a mouse.⁵³ The HSE has also recently highlighted the problem of unsuitable posture at work which is often caused by poor seating arrangements and is one of the main contributors to musculo-skeletal disorders. This was accompanied by the publication of revised guidance about seating at work⁵⁴ which aims to help employers assess suitable and safe seating, and seating design. It also includes examples of good seating and workstation layout.⁵⁵

4. Provision and use of Work Equipment Regulations (PUWER) (SI 1992/2932)

Under PUWER employers are required to provide suitable, safe, new or second-hand equipment, maintain it correctly and inform operators of foreseeable dangers. The main aim of these regulations is to protect employees from dangerous machinery with parts that could cause operator injury when properly used. Clearly such regulations are designed to cover a wide range of equipment, with only some of the provisions of direct relevance to the prevention of WRULD. Of importance in the current context are the requirements on employers to:

⁵¹ Evaluation of the Display Screen Equipment Regulations, HSE Contract research No 130/1997

⁵² Working with VDUs HSE 1998

⁵³ HSE Press Release E017:97 5 Feb 98

⁵⁴ Seating at Work HSE 1998

⁵⁵ HSE Press Release E25:98 16 Feb 98

- Select equipment having regard to the working conditions and any existing hazards on the premises, to the risks to health and safety of employees, and to any additional hazards posed by the equipment (reg 5);
- Ensure that equipment provided is constructed or adapted to be suitable for its purpose (reg 5);
- Ensure that equipment provided is used only for operations and under conditions for which it is suitable (reg 5);
- Make available to all persons who use, or supervise the use of equipment, health and safety information and instructions (reg 8), and training (reg 9) about the operation of the equipment.

In guidance to the regulations the value of risk assessments made under the Management of Health and Safety at Work Regulations is emphasised as an aid to the choice of suitable equipment.

The requirements of the Amending Directive to the Use of Work Equipment Directive, 95/63/EC must be implemented in the UK by 5 December 1998. To this end the Health and Safety Commission has published consultative documents containing proposals to amend the above regulations on the use of work equipment generally, and the use of lifting equipment and power presses in particular.^{56,57}

5. The Workplace (Health, Safety and Welfare) Regulations (SI 1992/3004)

These regulations apply to all aspects of the workplace. Employers have duties to provide amongst other things

- A well maintained workplace (reg 5);
- Adequate ventilation (reg 6);
- A suitable temperature (reg 7);
- Effective lighting (reg 8);
- Sufficient space (reg 10);
- Workstation and seating arrangements suitable to the person using them and for the work that they do (reg 11);
- Rest facilities that are suitable and sufficient (reg 25).

⁵⁶ Consultative Document 113, HSC, 1 June 1997

⁵⁷ Consultative Document 116, HSC, 1 June 1997

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6. Personal Protective Equipment (PPE) at Work Regulations (SI 1992/2966)

These regulations control personal protective equipment (PPE) provided by employers. They are significant to risk of WRULDs because wearing PPE can alter an employees ability to perform tasks. Regulation 4 is the most relevant in this context. This requires employers to provide suitable PPE when there is no other method of controlling health and safety risks. Suitable PPE is:

- Appropriate to the work involved;
- Takes into account the health of the employee wearing it and his ergonomic requirements;
- Fits the employee;
- Prevents the specific risk without increasing the overall risk.

7. Updating the 'Six-Pack' Regulations

The 'six-pack' regulations have been amended and added to subsequently by the following:

- The Management of Health and Safety at Work (Amendment) Regulations 1994 (SI 1994/2865). This requires employers to minimise risks to pregnant, new and breast-feeding mothers;
- The Personal Protective Equipment (EC Directive) Regulations 1992 (SI 1992/3139), and the Personal Protective Equipment (EC Directive)(Amendment) Regulations 1993, 1994&1996 (SIs 1993/3074, 1994/2326, and 1996/3039). These give details of the specification and enforcement of standards for personal protective equipment.

III Compensation

Victims of industrial injury and disease may seek compensation through the civil courts for breach of statutory duty and/or of the common law duty of care. In the majority of cases the latter is used. In addition they may claim benefits which are paid under the social security system. Compensation awarded by the courts depends upon the establishment of fault whereas industrial injuries benefit is awarded without establishing fault and is referred to as 'no-fault' compensation.

Personal damages awarded by a court to an employee against an employer are met by private insurance funded by the employer's liability insurance premiums. On the other hand social security payments are a form of public insurance which are funded by employers, employees and taxpayers whether liability on the part of the employer can be established or not.

A. Fault versus No-Fault Compensation

There has been much controversy about the relative merits of fault and no-fault compensation. A Royal Commission on Civil Liability and Compensation for Personal Injury, chaired by Lord Pearson, reported in 1978.⁵⁸ The appointment of the Commission was motivated in part by the legal expenses, delays and complexities that often occurred during civil actions for compensation. In respect of industrial injuries, the Pearson Commission concluded that the (no-fault) industrial injuries scheme administered by what was then the DHSS should "provide the basis for improved provision for those injured at work" and that the "conditions for compensation for occupational diseases should be less restrictive". These increased compensation costs should be met, the Commission argued, by employers. The Commission concluded that⁵⁹ "Tort (civil wrong) should be retained for work injuries as a means of supplementing the no-fault industrial injuries benefits", despite the acknowledged criticisms.

Reform along the lines recommended has been slow despite the problems of the fault system which may be summarised as follows:⁶⁰

⁵⁸ Cmnd 7054-I March 1978

⁵⁹ para 937

⁶⁰ Tolley's Health and Safety Handbook 1998 p Int/40

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1. It lays too much emphasis on the behaviour of the defendant (i.e. culpability) rather than the suffering of the plaintiff.
2. It is liability-oriented rather than accident-compensation oriented, and so adversarial.
3. It is not related to the need of the plaintiff or to the defendant's ability to pay, but relies on liability insurance.
4. It aspires to deter the defendant from further acts of negligence, by imposition of damages; imposition of 'penalties', however, is the hallmark of criminal law.
5. Since social security benefits are payable almost immediately after injury at work whilst personal injury damages are payable much later, the fault system would probably have collapsed in the absence of a framework of compulsory liability insurance. However, structured settlements may eventually become the norm for accident victims, whereby they would receive monthly payments.

In some countries, such as the Netherlands, the government has introduced a wide-ranging, national, no-fault compensation scheme. In the absence of this in the UK some trades unions have negotiated individual schemes with employers. One example is the compensation agreement on keyboard and workstation-related upper limb disorders negotiated between the taxworkers' union, PTC, and the Inland Revenue. This scheme covers clearly defined and diffuse WRULDs resulting from VDU and keyboard activities including the use of a mouse. Such schemes have the advantages that compensation is paid quickly without the stress and costs of legal proceedings. The disadvantages include lower payouts and reduced pressure on employers to pay primary attention to prevention.

B. Breach of statutory duty

It is important to be aware that the remedies of Health and Safety at Work etc Act (HSWA) 1974 are purely criminal and punitive and therefore not compensatory. Convictions under the Act do not of themselves give the right to compensation in a civil action for breach of statutory duty (Section 47(1) of HSWA) but they can be used as evidence of civil liability. Regulations made under the Act may, however, allow the injured person to seek compensation in the civil courts for breach of statutory duty, unless this is specifically disallowed in the relevant regulations (Section 47(2) of HSWA). The Management of Health and Safety at Work Regulations 1992, is the only one of the 'six-pack' *et seq* to disallow this. Regulation 15 states:

'Breach of a duty imposed by these Regulations shall not confer a right in any civil proceedings'.

Although it is arguable that this restriction may be ineffective for, amongst other considerations, it may be in breach of EC law because it could be considered as failure to implement the Framework Directive in full.⁶¹

C. Common Law Duty of Care

Additional to the legal responsibilities in statutes and their associated regulations, employers are subject to obligations imposed by the common law of tort (or civil wrongs). Common law is a body of case law that comprises decisions made by judges about individual cases over the centuries. This has evolved, and is still evolving, based on custom and precedent. The common law duty of care in tort imposes a duty on employers to take reasonable care to protect their employees from risk of foreseeable injury, disease or death at work. Most civil actions for compensation are brought under this. Breach of duty of care may give rise to liability in negligence (one of the branches of tort) for which compensation may be payable.

1. Individual cases

The TUC has reported⁶² that approximately 2000-2500 claims for WRULD compensation are pursued annually, but only a small number proceed to a court hearing. Many cases are settled out of court, some for large sums. These include awards to:⁶³

PTC member Kathleen Tovey and Kathleen Harris, both typists at the Inland Revenue, who were awarded £82,000 and £79,000 respectively, (and) to Kath Watson, giro processing machine operator and CPSA member at the Benefits Agency, who was awarded £38,000 on the eve of the court hearing. UNISON won an out of court settlement of £60,000 for a council chainsaw worker. USDAW achieved two settlements of over £30,000 for check-out operators in the north-east of England and MSF won £72,000 for an industrial radiographer in Scotland.

Of those awards that do reach court the cases most likely to succeed are those in which there is a clearly diagnosed condition: cases of diffuse WRULD remain difficult to prove. This was reflected in the pronouncement made by Judge Jon Prosser in the case of *Mughal v Reuters*⁶⁴ when litigation was in its infancy. He reportedly stated that keyboard operators forced to give up their jobs because of aching muscles and joints were "eggshell personalities who needed to get a grip on themselves". He added that their medical condition was meaningless and had "no place in the medical text book". Although this judgement was considered by some experts to be anomalous, few cases of diffuse WRULD have succeeded in court.

The following are examples of WRULD cases that have succeeded on the basis of common law negligence. These include:⁶⁵

⁶¹ Health and Safety: The New Legal Framework, Smith, Goddard and Randall, 1993, p26

⁶² RSI Hazards Handbook, London Hazards Centre 1996

⁶³ *ibid*

⁶⁴ Guardian, 29 Oct 93, *Keyboard injury does not exist, judge rules*

⁶⁵ Croner's Health and Safety at Work Special Report: Health and Safety Case Law Review, Issue 27 Feb 1997

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Ping V Esselte-Letraset (1992)

Nine employees of Esselte-Letraset worked in its factory at Ashford, Kent. Their work involved general tasks in the printing industry. All nine developed injuries including tenosynovitis, tennis elbow and trigger thumb, generally categorised as upper limb disorders. They claimed damages from the company on the ground that their injuries had been caused by the repetitive movements involved in their work.

The court's decision was as follows:

- the injuries had been caused by the work
- the injuries had been foreseeable
- there was a duty of care on behalf of the employers which could have been discharged by giving a proper warning before the dangerous work had begun
- the warning should include an explanation of the reason for, and importance of, reporting any wrist or arm pain without delay
- there should also be a regular educational process in relation to the risks
- since there had been no adequate warnings, the employer was liable.

McSherry and Others v British Telecom (1993)

A county court award damages of £6000 to two British Telecom employees in respect of RSI caused by keyboard work at high speed, using inappropriate furniture. British Telecom appealed against the judgement, but the matter was settled out of court on undisclosed terms, and the appeal was effectively abandoned.

This case is not a binding precedent, but it was the first of its type to come to court.

Mitchell V Atco (1995)

A motor tester employed by Atco, whose job involved much turning and twisting and lifting, was diagnosed as suffering from repetitive strain injury. Her claim for compensation succeeded on the following grounds:

- the evidence of M's doctors should be accepted over that of the employer
- Atco had known that the work carried out by the employee carried a foreseeable risk of injury
- the employer had given no advice on the risks and consequences of RSI
- there had been no system of job rotation
- the following compensation was awarded: £8500 for pain and injury, £27500 for loss of earnings, and £6600 for future loss of earnings.

Hunter V Clyde Shaw plc (1995)

H worked as a radiographer for the defendants. His work involved moving castings, weighing up to five tonnes, on a turntable. He and his colleagues complained repeatedly about the difficulty of the work, and H developed lateral epicondylitis (tennis elbow).

His claim for compensation succeeded: the Scottish court ruled that the employer had been negligent in not taking all reasonable steps to provide him with safe equipment.

The first WRULD common law case to be decided in the Court of Appeal took place in 1996. This was *Pickford v ICI*:⁶⁶

The Court of Appeal ruled that a secretary who had developed writer's cramp could recover damages from her employers, because they had failed to supervise her work adequately, and had not provided information, warnings or instruction relating to the risks associated with the use of display screen equipment.

D. Social security benefits for prescribed diseases.

A disease is prescribed for social security purposes if there is a recognised risk to workers in a particular occupation and the link between disease and occupation can be reasonably presumed or established in individual cases.⁶⁷

The social security system assists people disabled through prescribed diseases, including those affecting the upper limbs,⁶⁸ through three benefits. Industrial Injuries Disablement Benefit (IIDB) is payable to employed people disabled through a prescribed industrial disease. It is not payable to the self-employed. Entitlement to IIDB depends upon medical assessment of the degree of a person's disability and, in general, it is paid only where a person is assessed as more than 14% disabled. People who are assessed as disabled below this threshold can receive Reduced Earnings Allowance (REA) to meet the shortfall between the remuneration in their previous occupation and the remuneration available in any work which they remain able to do. At retirement age recipients of REA receive Retirement Allowance (RA) instead.

As the table below shows, few people in fact receive benefits in respect of a prescribed disease of the upper limbs. At April 1997, around 22,000 people were receiving one of these benefits.

⁶⁶ *ibid*

⁶⁷ Cm 1936, "Report on Work Related Upper Limb Disorders" *Industrial Injuries Advisory Council*, 1992

⁶⁸ see Appendix 1 for conditions of prescription and list of prescribed diseases

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Benefits in payment to persons affected by upper limb disorders

Great Britain^(a), April 1997

	Industrial Injuries Disablement Benefit	Reduced Earnings Allowance	Retirement Allowance	Total
Cramp of the hand or forearm	419	105	23	547
Beat hand	20	12	-	32
Beat elbow	53	-	-	53
Synovial inflammation (tendonitis)	2,521	1,449	304	4,274
Vibration white finger	4,722	8,318	3306	16,346
Carpal tunnel syndrome	602	187	23	812
Total	8,337	10,071	3,656	22,064

a) Including some cases payable overseas.

Source: DSS IIDB/REA Statistics 1996/97

1. Industrial Injuries Advisory Council Review

The Industrial Injuries Advisory Council (IIAC) is an independent statutory body set up in 1946 to advise the Secretary of State for Social Security on matters related to the IIDB, and is responsible for designation of prescribed diseases. IIAC has undertaken detailed reviews of a number of WRULDs eg rotator cuff syndrome⁶⁹ and has found that, in spite of a large volume of anecdotal evidence, there is insufficient epidemiological evidence to support their prescription. A review of WRULDs in 1992 added only carpal tunnel syndrome in relation to hand-held vibrating tools to the list. However, it considered that many other cases of carpal tunnel syndrome are occupationally caused, and recommended that the condition of carpal tunnel syndrome alone be prescribed on an individual basis where relevant work place exposure at the appropriate time can be demonstrated.⁷⁰

This system of individual proof is becoming more common and has been applied to occupational asthma and chronic bronchitis and emphysema in coal miners working underground for 20 years.

⁶⁹ Rotator cuff syndrome results from inflammation, tears or rupture of the tendons of the muscles that rotate the shoulder joint

⁷⁰ Cm 1936, "Report on Work Related Upper Limb Disorders" *Industrial Injuries Advisory Council*, 1992

IIAC is currently undertaking a further comprehensive review of the list of occupations for which IIDB is paid, both in relation to examining the links between specific occupations and diseases, and in order to simplify the structure of the scheme. IIAC started taking evidence in October 1997, but there is as yet no date for completion of the review.⁷¹

2. Compensation Recovery Scheme

In 1990 a compensation recovery scheme⁷² was introduced which required that benefits must be paid back in full by the claimant if a civil compensation award of more than £2,500 was awarded. (Below this figure no recovery took place). The effect was that many claimants had to pass on the total amount of any settlement to the DSS.

This scheme has now been modified with the result that after 6 October 1997⁷³ the small payments limit of £2,500 has been removed and the responsibility for paying back benefits will fall to the compensator. That element of the compensation award for pain and suffering will be payable in full to the claimant. Compensation for loss of earnings will be paid by the compensator to the DSS to repay benefit, and that in excess of social security payments will be paid to the litigant.

⁷¹ IIAC spokesman 17 March 1998

⁷² Social Security Administration Act 1992

⁷³ *Social Security (Recovery of Benefits) Act 1997*

IV Appendix 1

Section 76(2) of the *Social Security Act 1975* sets out the conditions that must be satisfied before a disease is prescribed.

“A disease or injury may be prescribed in relation to any employed earners if the Secretary of State is satisfied that:

- (a) it ought to be treated, having regard to its causes and incidence and any other relevant considerations, as a risk of their occupations and not as a risk common to all persons; and
- (b) it is such that, in the absence of special circumstances, the attribution of particular cases to the nature of the employment can be established or presumed with reasonable certainty”.

In other words, a disease can only be prescribed if there is a recognised risk to workers in a certain occupation and the link between disease and occupation can be reasonably presumed or established in individual cases.⁷⁴

Under the *Social Security (Industrial Injuries) (Prescribed diseases) Regulations 1985 (SI 1985 No. 967) as amended* the following WRULDs are prescribed occupational diseases:

Disease number	Prescribed disease or injury	Any occupation involving
A4	Cramp of the hand or forearm due to repetitive movements. <i>For example, writer’s cramp</i>	Prolonged periods of handwriting, typing or other repetitive movements of the fingers, hand or arm. <i>For example, typists, clerks and routine assemblers.</i>
A5	Subcutaneous cellulitis of the hand (Beat hand)	Manual labour causing severe or prolonged friction or pressure on the hand. <i>For example, miners and road workers using picks and shovels.</i>
A7	Bursitis or subcutaneous cellulitis arising at or about the elbow due to severe or prolonged external friction or pressure at or about the elbow (Beat elbow)	Manual labour causing severe or prolonged external friction or pressure at or about the elbow. <i>For example, jobs involving continuous rubbing or pressure on the elbow.</i>

⁷⁴ Cm 1936, “Report on Work Related Upper Limb Disorders” *Industrial Injuries Advisory Council*, 1992

Disease number	Prescribed disease or injury	Any occupation involving
A8	Traumatic inflammation of the tendons of the hand or forearm, or of the associated tendon sheaths (<i>Tenosynovitis</i>)	Manual labour, or frequent or repeated movements of the hand or wrist. <i>For example, routine assembly workers.</i>
A11	Episodic blanching, occurring throughout the year, affecting the middle ear or proximal phalanges or in the case of a thumb the proximal phalanx, of (a) in the case of a person with 5 fingers (including thumb) on one hand, any 3 of those fingers, or (b) in the case of a person with only 4 such fingers, any 2 of those fingers, or (c) in the case of a person with less than 4 fingers, any one of those fingers or, as the case may be, the one remaining finger (vibration white finger)	(a) The use of hand-held chain saws in forestry; or (b) The use of hand-held rotary tools in grinding or polishing of metal, or the holding of material being ground, or metal being sanded or polished by rotary tools; or (c) The use of percussive metal-working tools, or the holding of metal being worked on by percussive tools, in riveting, caulking, chipping, hammering, fettling or swaging; or (d) The use of hand-held powered percussive drills or hand-held powered percussive hammers in mining, quarrying, demolition, or on roads or footpaths, including road construction; or (e) The holding of material being worked upon by pounding machines in shoe manufacture.
A12	Carpal tunnel syndrome	Use of hand-held vibrating tools whose internal parts vibrate so as to transmit that vibration to the hand, but excluding those which are solely powered by hand