

# Upper limb disorders

Occupational aspects of management

Evidence-based guidance for  
**healthcare professionals**



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## Introduction

This leaflet summarises the findings of a systematic review of the published scientific evidence on the workplace management of four upper limb disorders: carpal tunnel syndrome, non-specific arm pain, tenosynovitis and lateral epicondylitis (tennis elbow).<sup>1</sup> The work was carried out by a Guideline Development Group including representatives from employers, patients (employees), occupational health, general practice, rheumatology, ergonomics, physiotherapy, occupational therapy and the Health and Safety Executive (HSE). There has been limited high-quality research on the workplace management of upper limb disorders. This leaflet is intended for healthcare practitioners. It summarises the evidence-based guidance on measures to support workers with upper limb disorders.

## What are upper limb disorders?

'Upper limb disorders' is an umbrella term for more than 150 different musculoskeletal conditions of the upper limbs. There is little consensus as to the names used to describe these conditions, especially non-specific arm pain. Carpal tunnel syndrome, tenosynovitis and lateral epicondylitis are better described and there is greater agreement on the diagnostic criteria for these conditions.

## Epidemiology

The prevalence of upper limb disorders is difficult to establish but they are undoubtedly very common. Carpal tunnel syndrome affects approximately 5% of the general adult population (point prevalence) and has an annual incidence of 1/1,000 person years. Non-specific arm pain is the most common work-related upper limb complaint and accounts for 25% of adults with upper limb disorders. Tenosynovitis has a point prevalence of 1.1% among

men and 2.2% among women. Lateral epicondylitis has a point prevalence of 1.3% among men and 1.1% among women.

Upper limb disorders are frequently attributed to work although the evidence that occupational factors are important in the development of many of these multifactorial conditions is limited. Nonetheless, many studies and systematic reviews have suggested that physical workplace factors eg sustained abnormal posture, abnormal force, vibration, rapid repetitive movements and computer use may be associated with upper limb disorders. Psychosocial and cultural factors are also relevant in the development of upper limb disorders. For example, organisational factors, such as low supervisor support, have been implicated in some upper limb disorders. Rehabilitation, to be effective, must identify and address the barriers (health, personal/psychological, social/occupational) to recovery and return to work.

## **Definitions**

Carpal tunnel syndrome (CTS) is a compression neuropathy due to entrapment of the median nerve within the carpal tunnel at the wrist. Non-specific arm pain describes upper limb pain which is not due to a well-defined condition. It is sometimes termed repetitive strain injury (RSI). Tenosynovitis is due to inflammation of the synovial sheath around the extensor or flexor tendons at the wrist. Lateral epicondylitis is characterised by pain over the lateral epicondyle of the humerus, aggravated by loading of the hand extensor muscles at the elbow.

## **Management of upper limb disorders**

The recommendations from this review focus on the limited published evidence as to what can be done in the workplace to support someone with an upper limb disorder once it has

developed. There may be other interventions which help but which have not yet been trialled and so lack the evidence base to be recommended. Further research is required in this area.

#### Carpal tunnel syndrome

- 1 For those workers with carpal tunnel syndrome using display screen equipment, the existing workstation assessment should be reviewed by the employer, with the involvement of the employee, and the findings acted on. This assessment should be revised whenever a substantive change to the workstation or work processes occurs, as required by the Display Screen Equipment Regulations.<sup>2</sup>
- 2 Employers should consider offering computer operators with carpal tunnel syndrome the opportunity to trial different computer keyboards.
- 3 Workers with carpal tunnel syndrome who are exposed to hand-transmitted vibration should have their risk from vibration exposure reassessed and, depending on medical advice and reasonable practicability, should have their exposure reduced.
- 4 Employers should consider offering those workers with carpal tunnel syndrome whose condition is aggravated by work, temporarily modified duties to allow time for the condition to improve.

#### Non-specific arm pain

- 1 For those workers with non-specific arm pain using display screen equipment, the existing workstation assessment should be reviewed by the employer, with the involvement of the employee, and the findings acted on. This should be revised whenever a substantive change to the workstation or work processes occurs, as required by the Display Screen Equipment Regulations.

- 2 In workers with non-specific arm pain who have been absent from work for at least four weeks, multidisciplinary rehabilitation programmes including both physical and psychosocial approaches should be offered, or facilitated, by employers.

The physical sessions, which should be led by a health professional (eg physiotherapist, occupational therapist), are aimed at improving strength and endurance using graded activity. Relaxation and energy conservation sessions should be included and should aim to equip the employee with effective coping strategies. Education on ergonomics may be included as well.

The psychosocial component, which should be led by a health professional (eg psychologist, occupational therapist), is aimed at improving coping strategies using cognitive behavioural techniques, and preparation for return to work including liaison with the employer. Education on effective coping mechanisms for pain should also be included.

- 3 For employees absent from work with non-specific arm pain for more than four weeks, an individualised return-to-work plan should be agreed, in advance of the individual's return to work, following liaison between the rehabilitation team, the employer and the worker.
- 4 Employers should consider offering those workers with non-specific arm pain whose condition is aggravated by work, temporarily modified duties to allow time for the condition to improve.

## Tenosynovitis

- 1 For those workers with tenosynovitis using display screen equipment, the existing workstation assessment should be reviewed by the employer, with the involvement of the

employee, and the findings acted on. This should be revised whenever a substantive change to the workstation or work processes occurs, as required by the Display Screen Equipment Regulations.

- 2 Employers should consider offering those workers with tenosynovitis whose condition is aggravated by work, temporarily modified duties to allow time for the condition to improve.

#### Lateral epicondylitis

- 1 Employers should consider offering those workers with lateral epicondylitis whose condition is aggravated by work, temporarily modified duties to allow time for the condition to improve.

**Note:** the recommendations given above are restricted to those occupational groups for which clear evidence of the effect of interventions has been published. Although no specific interventions have been studied, there is scientific evidence relating to causal factors for which it can be reasonably suggested that reducing the extent of these factors in the workplace will be beneficial. For carpal tunnel syndrome, other than the use of vibrating hand tools, the strongest causal evidence relates to repeated wrist movements (flexion/extension) and task modification to reduce this should help. Repeated gripping and manipulating, especially with the fingertips (eg some packing tasks) increases carpal tunnel pressure and might play a role. Again, reducing these activities might be helpful. For tenosynovitis, there is evidence that rapid, repeated gripping and twisting actions (eg using a manual screwdriver) can create problems and reducing these might help. There is evidence that some 'work hardening' can occur. Particular care should be taken with new employees or those returning to such work after a period of absence.

## What advice should I provide my patients with these upper limb disorders?

These conditions are common and while most people will recover, some will have ongoing problems. Reducing tasks that make pain worse may help. Work may worsen problems and so may hobbies like gardening, sport or DIY. Early action may reduce the risk of a problem getting worse or lasting longer. Employers can do several things which may help people with upper limb disorders. These include task modification (doing the job differently), job rotation (varying the job), job enlargement (reducing the need for the same repetitive action), temporarily reducing working hours, staff training (ensuring good working technique) and introducing regular short breaks into the working day (to allow time for recovery). For example, computer users can use keyboard shortcuts to minimise mouse use or trial alternative mice. For some people, voice-activated software or administrative support may also help.

Health professionals who are treating patients with upper limb disorders should take an occupational history and consider the possibility of work relatedness. If occupational factors seem relevant, then seek your patient's consent to contact their employer's occupational health department to engage them in investigating this. Occupational health staff can advise both your patient and their employer regarding measures to manage upper limb disorders in the workplace.

If your patient does not have access to an occupational health department, you may have to offer advice on occupational aspects of the management of their upper limb disorder. The HSE publication on upper limb disorders in the workplace<sup>3</sup> contains useful advice for employers. Information is also available from the HSE website and the HSE Infoline (Tel: 0845 345 0055).

The law says employers must identify jobs likely to cause upper limb disorders, assess the risks, prevent or control those risks as far as it is reasonably practicable to do so and inform workers about these risks. It is important that employers also assess and manage workplace stress. The HSE stress management guidelines ([www.hse.gov.uk/stress/index.htm](http://www.hse.gov.uk/stress/index.htm)) provide useful advice on this subject. The Disability Discrimination Act 2005 requires that employers make reasonable changes to help disabled workers. Some workers with upper limb disorders may be covered by this Act.

People disabled from tenosynovitis or carpal tunnel syndrome thought to be caused by work may be eligible for Industrial Injuries Disablement Benefit in relation to certain occupations. Read more about this benefit in the Department for Work and Pensions guide to Industrial Injuries Disablement Benefits.<sup>4</sup>

## Useful information

- HSE musculoskeletal disorders webpage:  
[www.hse.gov.uk/msd/index.htm](http://www.hse.gov.uk/msd/index.htm)
- HSE Infoline – Tel: 0845 345 0055, Fax: 0845 408 9566,  
Minicom: 0845 408 9577 or email: [hse.infoline@natbrit.com](mailto:hse.infoline@natbrit.com)

## References

- 1 NHS Plus, Royal College of Physicians, Faculty of Occupational Medicine. *Upper limb disorders: occupational aspects of management. A national guideline*. London: RCP, 2009.
- 2 Health and Safety Executive. *Work with display screen equipment: Health and Safety (Display Screen Equipment) Regulations 1992 as amended by the Health and Safety (Miscellaneous Amendments) Regulations 2002*. Rev edn. London: HSE Books, 2003.
- 3 Health and Safety Executive. *Upper limb disorders in the work place*. HSG60, 2nd edn. London: HSE Books, 2002.
- 4 Department for Work and Pensions. *DB1 – a guide to Industrial Injuries Disablement Benefits*. London: DWP, 2008. Available at [www.dwp.gov.uk/advisers/db1/](http://www.dwp.gov.uk/advisers/db1/)

Further copies of these booklets are available from NHS Plus:

Email: [nhsplus@nhs.net](mailto:nhsplus@nhs.net)

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For the full version of the guidelines on the occupational management of upper limb disorders, see:

[www.nhsplus.nhs.uk](http://www.nhsplus.nhs.uk)

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