Preventing work-related upper limb disorders

Self-care training programme for hand-intensive occupations
Aims of the programme

- To increase awareness of work-related upper limb disorders (WRULDs) associated with hand-intensive tasks at work
- To promote the health, safety and wellbeing of workers performing hand-intensive tasks
Acknowledgment

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Objectives

At the end of the training programme, you’ll:
- be familiar with the basic principles of health and safety in the workplace
- know employers’ and employees’ basic health and safety duties
- be able to identify risk factors at work, including workplace hazards, ergonomic hazards and organisation of work hazards
- be aware of major upper limb injuries affecting manual therapists
- be able to carry out risk assessments
- be able to identify preventive strategies that can be introduced into your daily work practices
Programme outline

- Health and safety legislation
- What is ergonomics?
- Hazard identification and risk assessment
- Work-related musculoskeletal disorders (WRMSDs)
- Work-related upper limb disorders (WRULDs)
- Hierarchy of controls
- Reactive vs. proactive strategies
- Self-care maintenance
Legislation

Safety, Health and Welfare at Work Act 2005
- Sets out a preventive approach to avoiding accidents and ill health at work

Safety, Health and Welfare at Work (General Application) Regulations 2007
- Implement a number of European Directives
- Manual Handling Regulations 2007
- Pregnant Employee Regulations 2007
Safety, health and welfare at work

Duties of the employer
- Safe place at work
- Safe access and egress
- Safe systems of work
- Safe plant and equipment
- Provide personal protective equipment (PPE)
- Training
- Risk assessment
- Supervision

Duties of the employee
- Keep the workplace safe
- Ensure entrances and exits are clear at all times
- Follow safe work practices
- Follow safe operating procedures
- Use PPE correctly
- Participate in the training provided
- Co-operate with the employer, including when carrying out risk assessments
What is ergonomics?

Ergonomics is the study of workers and their relationship with their occupational environment.

How do you position yourself and your patient? How is equipment used? How is the workplace designed, and how does it affect your health?

Ergonomics helps you work smarter and more efficiently, with less effort and discomfort to the body.
Ergonomics: the human factor

People are different...
- We come in different shapes and sizes, yet the workplace is often set up ‘one size fits all’

People have physical and mental limits for working...
- The **wrist** can’t tolerate excessive extension
- The **back** can’t tolerate excessive bending and twisting
- The **neck** isn’t meant to be in constant flexion
- **Muscles** will fatigue if under constant tension
Consequences of poor ergonomics

- Fatigue
- Pain and discomfort
- Illness/injury
- Missed days at work
- Errors
- Lower productivity
- Client dissatisfaction
What is a ‘healthy workplace’?

‘A healthy workplace is one in which workers and managers collaborate to use a continual improvement process to protect and promote the health, safety and wellbeing of all workers and the sustainability of the workplace...’

Risk assessment made easy

Step 1: Identify the hazard
Step 2: Decide who might be harmed
Step 3: Evaluate the risks and decide on precautions
Step 4: Record your findings and introduce them
Step 5: Review your assessment and update if necessary
Hazard and risk

- A **hazard** is a potential source of harm or adverse health effect on one or more people.

- **Risk** is the likelihood that someone may be harmed or suffer adverse health effects if exposed to a hazard.
Factors to be considered when carrying out a task-specific risk assessment

Step 1: Collect information on how the task is performed
- Identify the key stages of the task

Step 2: Collect technical information
- Details of the client/patient, eg weight, mobility
- Physical effort required to do the task
- Characteristics of the environment

Step 3: Identify problems or risk factors of the task
- Over-frequent or prolonged physical effort
- Insufficient bodily rest or recovery periods
**Step 4:** Identify improvements needed to avoid or reduce the risk
- Consider organisational or mechanical measures

**Step 5:** Review the effectiveness of the measures
- Assess if the controlled measures reduced the risks
Workplace hazards in relation to hand-intensive tasks

Workplace hazards refer to workplace conditions that pose a risk of injury to workers. For example:
- slips, trip and falls
- trailing leads from equipment
- unsuitable equipment
- wet floors
- poor maintenance procedures
- lack of training in safe systems of work
Ergonomic hazards refer to workplace conditions that pose a risk of injury to the musculoskeletal system of the worker, eg:
- repetitive tasks
- poor or awkward static posture/joints held in a fixed position
- excessive force involved in carrying out the task
- improperly adjusted workstation
- improperly adjusted bed/plinth
- frequent lifting
- duration of the task
- poor lighting
- draughty or cold work area
Work organisation/psychosocial hazards in relation to hand-intensive tasks

This category of hazards refers to workplace conditions that have the potential to cause physical/psychological harm, eg:

- quantitative demands: the amount of work and its distribution over the course of the work day
- emotional demands: demands as a result of emotional involvement
- tempo: demands that have an impact on the pace of work
- influence: the degree of influence on the amount of work and the specific work tasks assigned or taken on
- predictability: the availability of necessary information to carry out the job well
- support: the extent of supervisory support for employed workers or professional support for self-employed workers
Work-related musculoskeletal disorders

WRMSDs are a global problem affecting all occupations. WRMSDs can result in:
- sickness absenteeism
- long-term illness
- costs to the employer and employee

They generally affect the limbs and upper back, specifically:
- tendons
- muscles
- nerves
- ligaments
- joints
- circulation
Work-related musculoskeletal disorders

Symptoms can include:
- pain
- tenderness
- swelling
- cramps
- numbness
- loss of function
Work-related upper limb disorders

WRULDs are musculoskeletal symptoms or clinical diagnoses.
- Caused or made worse by hand-intensive work
- Long-term illness
- Costs to the employer and employee

They affect:
- neck
- shoulder
- upper arm
- elbow
- forearm
- wrist
- hand
- fingers and thumb
Work-related upper limb disorders

WRULDs

Specific
- Conditions with a characteristic medical feature

Non-specific
- Non-specific pain syndrome with no underlying medical cause
WRMSDs in hand-intensive healthcare occupations

Literature review

88 per cent of physiotherapists altered manual techniques as a result of thumb pain (Snodgrass et al, 2003)

Prevalence of MSD pain in dentists ranged from 64 per cent to 93 per cent (Hayes et al, 2009)

Career prevalence of WRMSDs was 68 per cent for Chartered physical therapists in the UK (Glover et al, 2005)

80 per cent of surgeons reported discomfort in the neck (Szeto et al, 2009)

65 per cent of sonographers reported pain in the wrist (Evans et al, 2010)
Common injuries sustained from hand-intensive tasks

**Muscle and tendon injuries**
Cumulative tissue damage caused by repetitively stressing the tissues beyond their anatomical and physiological limits
- Tendinitis
  - Irritation of the tendon
- Tenosynovitis
  - Irritation of the synovial sheath
- Costs to the employer
  - Combination of tendinitis and tenosynovitis
Common injuries sustained from hand-intensive tasks

Nerve impingement injuries
Carpal tunnel syndrome
- Impingement of the median nerve caused by irritation and swelling of the tendons in the carpal tunnel

Thoracic outlet syndrome
- Compression of the blood vessels between the neck and shoulder caused by reaching above shoulder level or carrying heavy objects
Hierarchy of control measures

- Eliminate the hazard
- Substitute the hazard
- Isolate the hazard
- Use engineering controls
- Use administrative controls
- Use PPE
Workstation layout: health and safety measures

- Clutter puts at risk the safety and cleanliness of treatment rooms
- Good layout allows convenient positioning, when required
- What measures can be taken to ensure good workstation layout?
  - Ensure the room fits the equipment and the equipment fits the room
  - When buying equipment, make sure those who’ll use it won’t have to adopt unnatural postures
  - Optimise space and ensure a good working area
Work scheduling: health and safety measures

Work scheduling of procedures should be considered to:
- allow the body sufficient relaxation time
- reduce exposure to repetitive tasks
- vary postures

What measures can be taken to allow sufficient rest time at work?
- Increase appointment times, if necessary
- Alternate heavy and light treatments within a schedule
- Vary procedures within the same appointment, if possible
- Take frequent shorter breaks, rather than fewer longer breaks
Prevention strategies

**Primary prevention**
- Avoid the occurrence of injury/illness by reducing and avoiding the risk factors

**Secondary prevention**
- Early detection and treatment of asymptomatic injury or illness before symptoms occur

**Tertiary prevention**
- Reduce disability and restore functionality
Reactive vs. proactive strategies

**Reactive health and safety strategies:**
- tend to occur after an accident or illness has occurred
- usually result in costs to the employee, employer and business

**Proactive health and safety strategies:**
- are introduced before an accident or illness has occurred
- emphasise prevention rather than cure
- are designed to anticipate and prevent accidents
- can be cost-effective
- indicate that the employer cares about employees’ safety, health and wellbeing
Proactive strategies in hand-intensive occupations

Workplace-level strategies
- Hazard identification and risk assessment
- Work practice self-assessment checklist to identify early signs/symptoms of WRULDs
- Ergonomic modifications of the work environment
- Provide handling aids and adjustable equipment
- Education and training in relation to safe work practices
- Provide a scheduling system that allows for worker input
- Create an organisational work environment that fosters worker involvement in health and safety
Individual-level strategies
- Task risk assessment
- Avoid specific hand-intensive techniques
- Use different body parts to perform techniques
- Frequent postural changes
- Vary workload
- Stop or interrupt work when symptoms of injury appear
- Work-up exercises before work/muscle relaxation techniques
- Change position during treatments/tasks
- Correct and good use of body mechanics
- Regular rest breaks
If you’re an employer...

Create an organisational environment that supports the prevention of WRULDs

- Invite and foster active worker participation and involvement in the prevention of injury
- Support open lines of communication
- Create a climate in which workers can help each other
- Educate and inform your workers regularly on health and safety issues
Self-care maintenance

- Practise good body mechanics
- Maintain good posture
- Vary working positions
- Vary hand techniques
- Get regular exercise
- Eat a nutritious diet
- Report symptoms early
- Take sufficient rest breaks
- Maintain a good work–life balance
Remember...

Prevention is better than cure

Injury is not part of your job
References


