



Preventing Work-Related Musculoskeletal Disorders

Our common priority

“Turn your Back on Work-related Musculoskeletal Disorders” is the theme for the European Week for Safety and Health at Work being run by the 15 European Union Member States during October 2000. Musculoskeletal disorders (MSD) are one of the most common work-related ailments affecting millions of European workers across all employment sectors at a cost of billions of Euros to European employers (see Agency Factsheet “Work-related Musculoskeletal Disorders in Europe” (2)). However, much of the problem could be prevented or reduced by following existing health and safety regulations and guidance on good practice.

Preventing Musculoskeletal Disorders: The European Approach

Musculoskeletal disorders cover a broad range of health problems. The main groups are back pain/injuries and Work Related Upper Limb Disorders, commonly known as “repetitive strain injuries”. Lower limbs can also be affected. There is clear evidence that MSD are strongly work-related. Physical causes of MSD include manual handling, loads, poor posture and awkward movements, highly repetitive movements, forceful hand applications, direct mechanical pressure on body tissues, vibrations, cold work environments. Causes in the organisation of work include pace of work, repetitive work, time patterns, payment systems, monotonous work, and also psychosocial work factors. Some types of disorders are associated with particular tasks or occupations. Women are affected more than men, largely because of the type of work they do (4).

Box 1 Main European directives relevant to preventing Musculoskeletal Disorders:

- Directive 89/391 provides a general framework for risk identification and prevention.
- Directive 90/269 covers the identification and prevention of manual handling risks.
- Directive 90/270 covers the identification and prevention of risks from work with display screen equipment, including minimum requirements for equipment, work environment and computer interface.
- Directive 89/654 covers minimum standards for workplaces, including seating, lighting, temperature and work station layout
- Directive 89/655 covers the suitability of work equipment.
- Directive 89/656 covers the suitability of personal protective equipment.
- Directive 98/37 covers machinery (replaced directive 89/392).
- Directive 93/104 covers the organisation of working time.
- Common standards for the design of work equipment are set at European level. These are known as CEN standards. The series of CEN standards “Safety of machinery-Human physical performance” is relevant to MSD risks.
- Further information on the European directives (including full text), CEN standards and Member State legislation can be obtained through links from the Agency web site.

To prevent musculoskeletal disorders effectively, the risk factors in the workplace must be identified and then practical measures taken to prevent or reduce the risks. Attention needs to be paid to: risk assessment; health surveillance; training; employee information and consultation; ergonomic work systems (an ergonomics approach includes looking at the effect of the whole workplace, equipment, work methods and work organisation etc. to identify problems and solutions); and prevention of fatigue. These components of musculoskeletal disorder prevention are already recognised in European directives, Member States regulations and good practice guidelines (5). The main European directives relevant to preventing musculoskeletal disorders are listed in Box1.

Finding Solutions

To find an effective solution to a musculoskeletal problem it is very important to carefully observe the real situation in the workplace as many factors vary between jobs and every workplace is different. Attention should be paid to all the possible risk factors, especially as a combination of factors may be creating a risk. The solutions must be worked out to meet the particular circumstances in the workplace, including consulting staff and their

Box 2 European Prevention Approach

- Avoid MSD risks
- Evaluate MSD risks which can not be avoided
- Combat the MSD risks at source
- Adapt the work to the individual, especially the design of workplaces, the choice of work equipment and the choice of working and production methods, with a view, in particular, to alleviating monotonous work and work at a predetermined work-rate and to reduce their effect on health
- Adapt to technical progress
- Replace the dangerous by the non-dangerous or less dangerous
- Develop a coherent overall prevention policy which covers technology, organisation of work, working conditions, social relationships and the influence of factors related to the working environment
- Give collective protective measures priority over individual protective measures
- Give appropriate instructions to workers

Based on Directive 89/391 article 6.2 (5)

representatives about possible problems and solutions. No one approach works all the time and expert advice may be needed for unusual or serious problems. However many solutions are straightforward and inexpensive and the examples below show how some of these improvements can be made in practice to prevent or reduce some MSD risk factors.

The key elements of the European prevention approach are given in Box2.

Examples: Finding solutions to manual handling risks

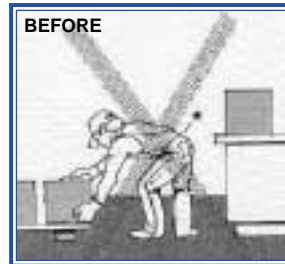
Manual handling risks include fatigue, bad posture and twisting, cramped or untidy work areas, awkward or heavy loads. Staff complaints or days off sick with back pain indicate a problem. Consider if the work could be automated or reorganised to avoid the need for any manual lifting. To identify all the risks the task, the working environment and capabilities of the worker all need to be

looked at. Include handling, carrying, pushing and pulling of loads as well as lifting. Training and information are an important part of the prevention plan. Detailed information on the risk factors to look for are given in the European directive on manual loads (see Box1), national legislation and guidelines on good practice.



Source: INRS (6)

Altering the handle height on this trolley improves posture and reduces effort required to push it.



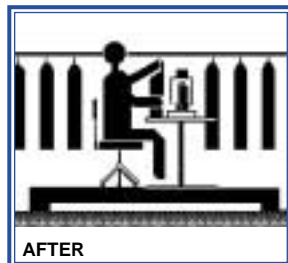
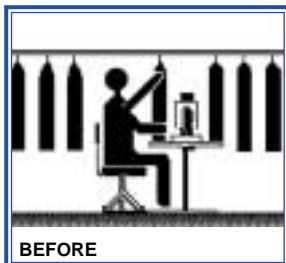
Source: ILO (7)

Altering the working height eliminates stooping posture in this unloading task.

Examples-Finding solutions to other musculoskeletal disorder risks

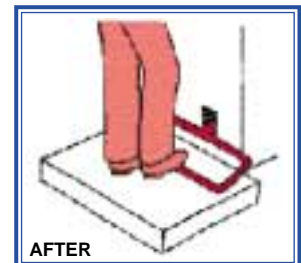
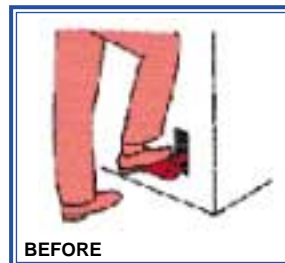
Risk factors of other musculoskeletal problems such as upper and lower limb disorders include: repetitive movements; awkward, forceful or twisting movements including squeezing, hammering or pounding; awkward postures; insufficient recovery time. Exposures to vibrations, pressure and stress at work can also play a part. Poor

or inappropriate seating is another factor leading to back pain or other aches and pains at work. Staff complaints or time off work with aches and pains, difficulty in movement or swellings etc. are indicators of an MSD problem.



Source: NSC (8)

Raising the workplace reduces awkward stretching by sewing machine operators in this clothing factory.



Source: FIOH (9)

Redesigning the foot pedal reduces the force needed by the machine operator using it.

Getting more information

More information about European Week and preventing musculoskeletal disorders is available from the Agency website, <http://osha.eu.int> where the full text of Agency publications can be downloaded free of charge. <http://osha.eu.int/ew2000/> is the direct link to information on European Week. Examples of solutions to MSD risks can be found at http://europe.osha.eu.int/good_practice/.

Further information/References

1. "Turn your back on work related musculoskeletal disorders"- Agency information leaflet European Week 2000
2. Agency Factsheet -"Work Related Musculoskeletal Disorders in Europe"
3. Agency Factsheet -"Work-related Neck and Upper Limb Musculoskeletal Disorders: summary of Agency report"

4. "Work related neck and upper limb musculoskeletal disorders" - Agency report, 2000 ; available at <http://agency.osha.eu.int/publications/reports/>
5. Agency website links to EU legislation, <http://europe.osha.eu.int/legislation/>, and to Member State sites where national legislation and guidelines may be found
6. Source: INRS, France, "Travail et Sécurité", December 1999, photo by Bernard Floret
7. Source: International Labour Office, "Ergonomic Checkpoints"
8. Source: National Safety Council, Illinois, USA, "Making the job easier: An ergonomics ideas book"
9. Source: Finnish Institute of Occupational Health, "Ergonomics Workplace Analysis", 1999