



Swedish regulations on prevention of musculoskeletal disorders

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Background

Over the past two decades, work-related musculoskeletal disorders (MSD) have gained increasing recognition in Sweden, Europe and world-wide. Although the precise mechanisms behind the disorders/diseases are not fully known, there is much evidence that many of them are work-related. And scientific understanding of the etiological background of the disorders is continuously increasing.

Musculoskeletal disorders have now become very common and must be regarded as one of the major occupational health problems in Europe. Millions of European workers suffer from lower back, neck, shoulder, arm, hand or knee pain and/or problems. A conservative estimate is that at least a quarter to a third of European employees are exposed to physiological and/or organisational or psychosocial risk factors which put them at risk of musculoskeletal disorders. Personal suffering is not the only problem - these disorders are also a major cost burden for the individual, the company and society.

In its report "European Working Environment in Figures", the European Foundation for the Improvement of Living and Working Conditions (1996) concludes that *"priority in European prevention and improvement strategies should be given to actions targeted at the main and common risk factors which were identified as; - strenuous working postures, overload and extension of the body, musculoskeletal disorders; - psychosocial hazards, i.e. insufficient job content, strenuous working pace, lack of influence and control over one's own work, and other hazards related to stress..."*

The Swedish regulations

Sweden has had regulations on the prevention of MSD since 1984. (Minor amendments were made in 1993 to allow for incorporation of the EU Machinery and Manual Handling Directives). Even so, they continue to represent a major share of all work-related disorders, as evidenced by the fact that they account for about a third of all industrial compensation claims. To strengthen preventive provision against this type of problem revised

Provisions (AFS 1998:1 Ergonomics for the prevention of musculoskeletal disorders) were introduced. As always in Sweden, the Provisions were produced in close co-operation with representatives of the labour market organizations (employers' federations and trade unions). The reasons for the revision were:

- the continuing prevalence of MSD in Swedish working life, which the existing regulations were clearly not addressing properly;
- to amend the Work Environment Acts 1991 and 1994 to give a better legal basis for regulating the problem;
- increased scientific knowledge;
- benchmarking; experiences from European standardisation and other countries' attempts to regulate the field.

The revision had two aims: firstly, to clarify the close relations between mechanical and psycho-social risk factors for MSD and the employer's responsibility to assess and control these risk factors; and secondly, if possible, to provide more specific, clear and quantitative guidelines or models for risk assessment for different situations. We believe both aims have been delivered.

The Provisions came into force on 1st July 1998. They are very general, covering ergonomic aspects across all sectors and, in accordance with the Swedish Work Environment Act, apply to all aspects of working life. This includes, for example, primary school pupils (6-7 years of age) and employed teleworkers. They are also compatible with AFS 1996:6 Internal Control, which implements the EC Framework Directive in Sweden.

AFS 1998:1 Ergonomics for the prevention of musculoskeletal disorders contains:

1. 12 mandatory clauses/provisions, five of which are addressed directly to employers. One clause each is directed towards employees, manufacturers/designers/providers, building developers and their consultants, co-ordinators of shared worksites and worksite controllers, respectively. Some idea of the flavour of the Provisions can be gained from these three sections:

Section 3

The employer shall ensure that work requiring the

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exertion of force is, wherever practically possible, ordered and designed in such a way that the worker can work with a work object, working equipment, controls, material or movement of persons without being exposed to physical loads which are dangerous for health or unnecessarily fatiguing.

Section 4

The employer shall ensure that work which is repetitive, closely controlled or restricted does not normally occur. If special circumstances require a worker to do such work, the risks of ill-health or accident resulting from physical loads which are dangerous for health or unnecessarily fatiguing shall be averted by job rotation, job diversification, breaks or other measures which can augment the variety of the work.

Section 5

The employer shall ensure that the worker has such opportunities of influencing the organization and conduct of his own work that sufficient variety of movement and recovery can be achieved.

2. Comprehensive general recommendations to help interpret the Provisions through background information and illustrations drawn from a wide range of different working situations. The recommendations are not mandatory, and also offer guidance on how to achieve compliance with the regulatory requirements.

3a. Instructional models as guidance for the assessment of risks due to strenuous work postures, manual materials handling, physically monotonous repetitive work and pushing/pulling operations. The models are based on a 3-zone, "traffic light" red-yellow-green rating system, signifying:
Red = unacceptable risk of musculoskeletal injuries. Action required.
Yellow = possible risk of musculoskeletal injuries. Evaluate further.
Green = acceptable risk for most individuals. OK, if no complaints.

3b. A general checklist for the identification of musculoskeletal stress factors which may have injurious effects.

The full English text of the Work Environment Act and the Provisions can be found at www.arbssky.se.

Relation to EC Directives

The Swedish position is that these Provisions fully implement the Manual Handling Directive, although we might expect some criticism for not using precisely the same wording as the Directive. The relation to the Framework Directive was mentioned earlier. The Use of Work Equipment Directive was implemented in Sweden by separate Provisions - AFS 1998:4 – which included a general clause on ergonomics. The VDU Directive was also

implemented separately by Provisions AFS 1998:5 which contain a series of ergonomics clauses.

One pathway to improved ergonomic conditions is the production of sound ergonomics standards as part of the New Approach. For the Board, taking an active part in the harmonised CEN work is one way to give effect to the spirit of the new ergonomics Provisions, although the regulations themselves do not apply to products covered by EC Product Directives, like the Machinery Directive. So, the clause which provides that manufacturers, importers, suppliers and providers "shall as far as is practically possible ensure that the technical devices, substances and packaging delivered do not cause physical loads which are dangerous to health or unnecessarily fatiguing...", only covers non-EC product Directive products. The Machinery and other Product Directives are separately implemented by other Provisions.

Key aspects

The two most conspicuous features of the new ergonomics Provisions are probably the strong emphasis on the "psycho-social/organisational" side of MSD and the assessment models respectively. The two most salient psycho-social concepts in the new Provisions are work organization (a very wide concept) and autonomy. One of the 12 clauses deals specifically with autonomy. The assessment model for repetitive, monotonous work is based on four factors:

- 1) work cycle length;
- 2) work postures and working movements;
- 3) autonomy; and
- 4) work content and learning.

The assessment models were introduced as general recommendations only after protracted and comprehensive discussions. Every attempt to establish simple evaluation models or guidelines will be a compromise between our existing knowledge of the very complex factors behind the MSD and the need of good, practical "working tools" for employers, safety delegates and labour inspectors. One risk with over-simplified evaluation models/guidelines is that of accepting apparently "green" conditions which actually contain aggravating factors which should rate it as "yellow" or even "red", and vice versa. The response to the new Provisions in Swedish workplaces points to a mainly positive outcome.

The shortage of good scientific knowledge in the field of ergonomics remains troublesome. There has been a tremendous increase in general knowledge over the past decade, but many of the underlying aspects of MSD remain a mystery. Nevertheless, Sweden has found that a case still exists for more



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stringent regulations, especially for the majority of the working population. Many jobs in Sweden are still too heavy or unsuitable in other ways for most women, not to say many men. There is still a long way to go before the aims of the Work Environment Act are fulfilled - that if you enter a job as a young healthy person you should have a fair chance of reaching retirement age in the same condition. This will be our task for many years to come.

Ergonomics is a fascinating dimension of the working environment, combining physiology, biomechanics, technology, psychology and sociology. There are still many gaps in our scientific knowledge. But we all have experience of what it means to do heavy lifting or work in constrained postures, and so there is a vast body of common knowledge which is not yet scientifically validated but desperately needing to be so. In other words, we must always be very open-minded and apply a holistic approach when dealing with these problems. And, finally, there is the great benefit that good ergonomic conditions almost always go hand in hand with good productivity and productive efficiency. ■

References on Swedish regulations

- Ergonomics for the prevention of musculoskeletal disorders, AFS 1998:1, NBOSH, Solna, Sweden.
- Internal Control, AFS 1996:6, NBOSH, Solna, Sweden.
- Swedish Work Environment Act, H8, 1998, NBOSH, Solna, Sweden.