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Musculoskeletal disorders: a major challenge for occupational risk prevention in Europe

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Policy recommendations

Musculoskeletal disorders (MSDs) pose the most widespread occupational health problem in the European Union. Their high incidence bears witness to the intensification of working conditions that is affecting growing numbers of employees in industry and services. The physical pain and discomfort caused by these disorders, alongside the volume of absenteeism entailed, make them an occupational health priority. Their prevention needs to be approached from numerous angles – medical, ergonomic, social, economic, and political – with a view to putting in place forms of labour organisation that are sustainable throughout individuals' working lives. The negotiation and implementation of new European legislation appropriate to the development of more sustainable and more socially responsible production models is a crucial challenge for the trade unions.

1. A major source of occupationally determined health inequality

In terms of **definition**, work-related musculoskeletal disorders (MSDs) include several forms of painful condition associated with strain caused to body tissues in the region of joints (muscles, tendons, nerves, blood vessels) (Sluiter *et al.* 2001). The most frequent such conditions are:

- *Carpal tunnel syndrome* which is produced by damage to the nerve that controls the first three fingers of the hand for the purposes of gripping, lifting and other manual operations;
- *Degeneration of the tendons of the outer elbow* (lateral epicondylitis) as a result of lifting or pushing heavy loads;
- *Symptoms experienced in the shoulder tendons* (damage to the rotator cuff tendons) which are particularly subject to strain as a result of overhead and pulling arm movements and postures (abduction);
- *Regional pain syndromes* affecting part or all of the upper limbs or the spine (i.e. neck and back pain).

This category of disorders causes physical pain and discomfort in the performance of work and, in the most severe instances (some 5-10% of all cases), generates a high level of absenteeism and/or long-term sick leave.

MSDs are the number one cause of occupational sickness in the economically developed countries and, in the wake of globalisation of the economy, they are becoming increasingly common in the emerging countries too. Variations in rates of recognition (between 25 and 492 declared cases per 100,000 insured workers in a sample of five EU countries) are principally attributable to different recognition criteria (Eurogip 2015). While the declared incidence is considerable right across the 217 million workers in the EU, it far underestimates the reality on account of the non-declaration resulting from workers' lack of information, discouragement in the face of the complex administrative procedures, and fears of losing their jobs. **Working conditions surveys** accordingly bring to light an epidemic of much greater proportions, indicating that some 50% of European workers – without any substantial variation among countries – suffer from some form of musculoskeletal pain (Eurofound 2010). For example, MSD surveillance data in the French Loire

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region (3.5 million inhabitants) show that 13% of workers are suffering from an MSD diagnosed as such by the occupational medical officer (Brière et al. 2015), representing 120,000 of the 1.3 million workers in this French region; yet the number of cases of MSD actually declared to the authorities is 4000 a year. The contrast between the two figures shows how important it is to collect survey- and monitoring-based data in order to ensure the visibility of occupational disease and to fuel public debate on workplace health issues.

The workers most at risk of MSD are those exposed to repetitive tasks performed under time constraints and allowing little operational leeway; these are workers in industry, agriculture and servicing trades, as well as low-skilled employees in the retail trade and personal services (Brière *et al.* 2015; Eurofound 2010). MSDs are thus an important source of social inequality in health that is greatly underestimated by the workers' compensation statistics. Older workers are particularly affected in that they suffer from premature wear and tear of body tissues and delayed effects of the accumulated biomechanical constraints to which they have been subject throughout their working lives. Occupational constraints generally remain severe during the later period of working life (Brière *et al.* 2015) leading to circumstantial handicaps that are difficult to surmount in spite of skills developed and experience acquired. Such workers manage to remain in employment only at the cost of severe pain experienced on a daily basis, particularly in cases where they continue to work to an advanced age because they lack full entitlement to a retirement pension. In such cases the inequalities linked to age compound those linked to gender, for the workers who took a break in their career or worked shorter hours to care for their family are most frequently women. Nor are young people exempt from such complaints; a new development in clinical practice is a strong recent increase in MSD diagnoses among young workers who are employed under conditions that are simultaneously precarious and harsh. For those workers – whatever their age or sex – whose MSD symptoms force them to give up work while also making it more difficult for them to find alternative employment, the penalty paid is twofold.

2. Complex strain phenomena resulting from the intensification of labour

The influence of individual characteristics (general state of health, etc.) and of out-of-work activities (leisure, domestic tasks) should not be overestimated. These non-work-related factors explain neither the epidemiological evolution in industrial countries nor the social inequalities in terms of health. Chronologically, the MSD epidemic has arisen in the wake of new methods to rationalise production and promote employment flexibility that were first introduced in the 1980s and 1990s (Théry *et al.* 2010; Westgaard and Winkel 2011). The surge in MSDs is explained by a cluster of occupational causes; it is a 'body trace' of the intensification of work that is characterised by the accumulation of physical, chemical, psychosocial and organisational constraints weighing down upon an increasing number of manual and white-collar workers in industry and, more recently, in services (Dares 2014; Eurofound 2010).

Prolonged exposure to biomechanical constraints in work situations is a major determinant of MSDs. Targets of prevention must be excessively repetitive movements and intense physical effort, the handling of heavy loads, forced movements or prolonged uncomfortable postures, mechanical vibrations and cold atmospheres. The **psychological dimension** of MSDs, as for all forms of chronic pain, is important too. Stress that in its origin is psychosocial disrupts activation of the muscles and reduces the efficiency of work-directed movements. Such stress also stimulates the mechanisms underlying inflammation and pain, reduces the capacity for tissue repair, and increases the likelihood of developing chronic pain. Psychosocial factors linked to work, such as strong psychological pressure associated with a weak level of autonomy, give rise to situations of 'workplace tension', particularly in cases where workers lack support or recognition from their hierarchy (Lang *et al.* 2012).

Work organisation and managerial practices are also key factors. Such practices determine the conditions for the performance of work and affect and permeate the biomechanical, psychosocial, chemical and environmental features of the work situations with which workers are faced. The combination of constraints of work pace and rigid procedures linked to the need for an immediate reaction in client interface situations (whether internal or external) frequently obliges workers to operate in an atmosphere of constant urgency while reducing their operational leeway for responding to unexpected episodes or developments. Managerial practices and human resource management determine the quality of labour relations and the methods of evaluating the work performed. These factors, like work organisation, influence not only the constraints or situations stemming directly from the work requirements but also workers' individual and/or collective resources for coping with them. An increase in workers' operational leeway, both individual and collective, is accordingly needed, for an adequate degree of autonomy in work performance facilitates deployment of the acquired skills and experience that are required to carry out the task in hand and ensure the achievement of quality results (Bourgeois et al. 2006; Daniellou *et al.* 2008). Current research shows similarities between the psychological and organisational determinants of pain that manifests in some cases as an MSD and in others as mental discomfort, as well as between the underlying neurobiological mechanisms. In other words, both MSDs and psychosocial risks in the workplace are pathological effects of the intensification of work, expressed on the one hand through bodily and on the other through mental distress or discomfort.

3. Integrated prevention of MSDs: a trade union priority in Europe

European or national campaigns to prevent MSDs have not yet proved their efficacy in spite of some one-off improvements observed in a few individual workplaces. Particular production lines or companies have in some cases been placed in jeopardy as a result of a drop in productivity and quality resulting from a loss of expertise, high turnover and recruitment difficulties linked to the deterioration of their image. Alongside the human costs,

the economic and social costs of this phenomenon are also high and believed to amount to close to 3% of the European Union's GNP. These costs must accordingly be placed in the balance and weighed against those of prevention.

Priority to the improvement of working conditions

All actors at company level must mobilise in the service of MSD prevention, that is, not only the departments responsible for occupational health and prevention and the health and safety committees but also the managing director, senior management, staff representatives, and the workers themselves. A consensus is emerging in favour of an approach that is all-encompassing and participatory and that must become an integral component of workplace life and activity on a permanent basis. To this end, there is a need for the question of MSDs to be debated dispassionately and placed on the occupational risk prevention agenda. The quality of social dialogue in the company and the smooth functioning of the health and safety committee (or the workers' representative body) thus become important parameters for an effective preventive stance (Daniellou *et al.* 2008).

To achieve an overall increase in prevention, it is essential to give priority to prevention at the source in the context of the following three-level approach:

- Primary prevention: adopt as a priority stance the need to prevent the formation and appearance of MSDs by reducing the risks at source;
- Secondary prevention: ensure that, by means of early screening and appropriate preventative steps, disorders, once diagnosed, do not worsen or recur;
- Tertiary prevention: seek ways of facilitating the continuing active presence in the workplace of employees suffering chronic symptoms.

Prevention at source consists, first and foremost, of reducing the constraints imposed by workstations and enhancing workers' capacity for autonomous action. Understanding the chain of determinants is a key stage in the occupational diagnosis of MSDs; this is achieved by a systemic approach to the work situation, based on a series of participatory ergonomic steps while constantly bearing in mind the real nature and demands of the work in order to avoid simplistic diagnoses that consist in blaming problems on 'inappropriate movements'. The levers for action are, just like the causes, simultaneously technical, organisational and managerial. Managerial practices that have the effect of reducing opportunities for cooperation within working groups (i.e. large-scale recourse to temporary labour, multiskilling of employees, individualisation of working relations and evaluation) must be called into question. The aim is not only to reduce exposure to biomechanical constraints but also to promote opportunities for appropriate action by restoring work in teams and an accompanying sense of collective effort. It is a question of broadening workers' skills so that they can regain their capacity for making – individually and collectively – adjustments in their ways of working that will enable them to produce the requisite goods and services while also preserving their own health. **Vocational training** is one frequently neglected lever here, insofar as the workers most at risk of MSDs are often excluded from it.

The collective workplace health-promotion actions (learning warm-up movements and techniques, stretching and flexibility exercises, etc.) that are sometimes recommended can serve only as a complement to the improvement of workstations and not as the sole preventive strategy (Kennedy *et al.* 2010; Petit *et al.* 2014).

Prevention must also incorporate **early-stage attention to and appropriate treatment of workers** suffering from MSDs, alongside **actions designed to enable them to remain in work**. To this end, an approach must be devised that is simultaneously medical and occupational, entailing prior assessment of the medical, social and occupational situation of the workers concerned (Petit et al. 2014). It is crucial that workers be informed of the benefits of early-stage consultation with their workplace doctor or GP, rather than waiting until a stage at which they have difficulty in performing their work. Contrary to general belief, it has been shown that in the event of a period of sick leave, the gradual and early resumption of work consisting of ergonomically appropriate tasks has a lasting therapeutic effect on the occupational incapacity associated with MSDs. Multidisciplinary programmes to facilitate continuing employment – combining physical and psychosocial rehabilitation with ergonomic adjustment of the workstation – can help to prevent situations where workers displaying MSD symptoms are forced to give up their jobs. No standardised solution can be envisaged, since the steps taken must be adapted to the specific historical, technological, organisational and economic features of each workplace (Daniellou *et al.* 2008). Workers themselves must remain the focus of approaches to the problem, without any split or cut-off point between their past and future work history or the medical and socio-administrative attention provided. This requirement of continuity does indeed represent a challenge because, at the present time, workers absent from the workplace on grounds of sickness are most frequently dependent, administratively speaking, on the system of health care provision, while links with the workplace and the actors responsible for occupational health risk prevention have been placed on hold. The construction of a shared representation and the coordination of the various parties from different professional backgrounds and administrative services will serve to promote the concerted effectiveness of medical and occupational steps and approaches. Technical or regulatory obstacles must be overcome to promote the cooperation of all parties in ensuring that MSD sufferers are not forced out of their jobs and, to this end, formalised networking efforts can prove a helpful solution (Petit *et al.* 2014).

Conclusion

The prevention of MSDs must go beyond a vision limited to the technical aspects in order to question the corporate production, organisational and managerial models from an ergonomic standpoint. Such an approach must be based on

an all-encompassing occupational health policy devised and implemented on the scale of the occupational sector or local employment authority. The major challenge is to promote the emergence of working conditions that will be sustainable throughout working life by redirecting industrial policy and adopting a vigorous new approach to European occupational health policy. This challenge must not take second place to the demands of economic competitiveness and employment in a period of crisis because all these challenges represent differing facets of the same whole, as has been shown by REACH in the area of chemical risks. The European directives on occupational health, the handling of loads, or working on a screen currently fall very short of the mark in the absence of a renewed proposal for an anti-MSDs directive.

Recommandations

1. MSDs must be regarded as representing a major policy issue for European trade unions, embracing as they do issues of health, quality of working life, sustainable employment and economic competitiveness in the EU.
2. The social inequalities of health that are generated by MSDs constitute a challenge to health and democracy that requires a debate on industrial policy and life-long sustainable working conditions in the EU.
3. MSDs require an all-encompassing, sustainable and integrated prevention policy in the EU and a return on to the EU's social agenda of the proposal for an anti-MSDs directive.
4. Occupational health statistics must be complemented by epidemiological surveillance data to serve as a pilot indicator for occupational health policies insofar as the current rationale of these statistics is geared to insurance rather than prevention.
5. The prevention of MSDs calls for an integration of the numerous and varying facets of prevention within an overall framework that gives primacy to the improvement of working conditions.
6. The Janus-like character of work organisation as both cause of and solution to MSDs must be opened up as an issue for discussion in companies, particularly within the workers' representative bodies and health, safety and working conditions bodies, for this is an important aspect to be taken into account in the search for preventive solutions.
7. Actions geared to the search for ways of ensuring that workers do not give up work but remain actively employed must receive a higher profile and better coordination. Arrangements put in place to this end must focus directly on the workers concerned throughout the process of return to the workplace and without any break in continuity as regards the administrative system responsible for their care.

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