



# Musculoskeletal disorders and organisational change

## Conference report

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**Lisbon, 11-12 October 2007**

## Background

In conjunction with the launch of the European campaign on musculoskeletal disorders (MSDs), the European Working Conditions Observatory (EWCO) of the European Foundation for the Improvement of Living and Working Conditions (hereafter ‘the Foundation’), in cooperation with the Portuguese EU Presidency, organised a high-level **conference on MSDs** in Lisbon on 11–12 October 2007. The conference aimed to engage discussion on European and national trends in the prevalence of MSDs, the economic and social impact, good practice examples in prevention policies and options for change. The event offered a common platform for debate to experts, representatives from the EU and national authorities, social partners and practitioners, and members of the EWCO network.

## Opening session

On 11 October, the conference was opened by the Foundation’s Director, Jorma Karppinen, who welcomed the participants and thanked the Portuguese Presidency for co-hosting the event.

Mr Karppinen argued that not only exposure to traditional ergonomic physical risks – such as repetitive hand and arm movements, tiring and painful positions, moving and carrying heavy loads – but also work intensity and stress at work are increasingly recognised as contributing factors to the upsurge of MSDs. In recent years, he said, there has been a proliferation of studies describing the phenomenon inside-out and pointing to the deterioration of the situation. Mr Karppinen drew attention to the **Fourth European Working Conditions Survey** which shows that backache and muscular pains are the most commonly reported work-related ill-health symptoms. Moreover, musculoskeletal disorders carry short and long-term consequences for the affected individual, the employer and society at large. However, he concluded on a positive note by saying that ‘positive signs are also emerging; the debate is moving from curing and managing the symptoms to prevention strategies. Greater attention is being paid to issues related to workplace design and work organisation, and return to work policies are increasingly considered and developed’.

Improving health and safety at work is a major concern of European and national policies. Speaking at the conference on behalf of the Portuguese Presidency, the Inspector General of Labour at the Working Conditions Authority (*Autoridade para as Condições do Trabalho, ACT*), Paulo Morgado de Carvalho, emphasised that, in 2007, the problem of MSDs has been given higher priority on the European agenda. Such illnesses are among the most severe and widespread diseases in Europe, he said, affecting 40 million workers in all kinds of activity, and they are the main cause of work-related absenteeism. According to Mr Carvalho, addressing this issue poses a stimulating challenge for the Portuguese Presidency, particularly at a time when the national Institute for Safety, Hygiene and Health at Work (*Instituto para a Segurança, Higiene e Saúde no Trabalho, ISHST*) and the General Labour Inspectorate (*Inspecção-Geral do Trabalho, IGT*) are being reorganised under the ACT. He explained that the strategy of this new organisation is aimed at improving compliance with health and safety regulations, the promotion of behavioural changes towards a safety culture and social dialogue, and the development of methodologies of risk prevention and monitoring in the workplace.

Antonio Cammarota, Policy Officer at the European Commission’s Directorate-General for Employment, Social Affairs and Equal Opportunities, presented the initiatives carried out on a legislative scale and recent developments in this field at European level. He explained that the current regulatory framework does not cover all types of work situations and does not address all risk factors leading to work-related MSDs. To fill this gap, the European Commission has recently launched an initiative on work-related MSDs which is now at consultation stage (see European Commission, 2007). In light of the second phase of consultation, Mr Cammarota emphasised that divergent opinions were expressed by workers and employers. Employer organisations considered that a single text covering all types of work-related MSDs would be unrealistic because of their multifaceted nature. The employers also commented that work-related MSDs are already

largely covered by the current EU legal framework; therefore, more emphasis should be placed on the effective implementation of existing legislation. Conversely, workers argue that psychosocial aspects should be considered and a global approach – both regulatory and non-regulatory – should be taken to address the problem. As a follow-up initiative, Mr Cammarota stated that an extended social and economic impact assessment study will be carried out before going ahead with the initiative on work-related MSDs.

### European trends

Drawing on the findings of the recently published [EWCO report on musculoskeletal disorders](#), Foundation research manager Jean-Michel Miller pointed to the strong correlation between the incidence of self-reported MSDs and strenuous working conditions, especially traditional physical strain factors associated with jobs involving tiring and painful positions, repetitive movements, carrying heavy loads and lifting or moving people. However, work intensification and stress seem to contribute increasingly to the upsurge of MSDs, warned Mr Miller. The Fourth *European Working Conditions Survey* data also reveal that other organisational features such as job rotation and teamworking are associated with a higher incidence of MSDs. Conversely, a good level of job autonomy and control over work, support from colleagues and superiors, opportunities to learn new things and worker participation result in lower levels of exposure to MSDs. Against this background, Mr Miller informed the conference participants that the situation, although alarming, is not hopeless and that a lot can and must be done at company level.

Mr Miller added that special attention should be given to high risk groups such as blue-collar workers and workers aged 40–54 years who are worst affected by MSDs. Furthermore, gender is not considered a risk factor as such, as gender differences in terms of exposure to MSDs are more apparent across sectors, partly reflecting the sectoral segregation. In male-dominated industries, such as construction and transport, men report a considerably higher incidence of MSDs than women, whereas women are most affected in the health, education, as well as hotel and restaurant sectors.

### National trends

Mario Giaccone, Italian EWCO correspondent and author of the Foundation's recent report on MSDs, highlighted some of the difficulties faced when investigating the prevalence of MSDs. First, a wide range of definitions of work-related MSDs and a large variety of sources providing information on MSDs – reflecting different methodological approaches – are used across Europe. Secondly, national trends on the occurrence of MSDs diverge when looking at different sources – for example, self-reporting sources versus administrative data.

In the light of national trends, Mr Giaccone explained that MSDs resulting from exposure to vibrations and noise are declining, while MSDs affecting the neck and shoulders and associated with tendinitis are on the increase. He added that these trends can be explained by changes in the workforce composition, widespread use of information and communication technologies (ICT) and a shift from a mechanised industry to a more knowledge-based economy. Participatory ergonomics, prevention and return to work policies, according to Mr Giaccone, are ways to respond effectively to the challenges posed by the increase in exposure to MSDs.

### Room to manoeuvre and prevention policies

The concept of 'room to manoeuvre' describes the difference between the work demands and the workers' resources, as perceived by the worker, explained Fabien Coutarel, professor at the Department of Economics of the University of Bordeaux II. Mr Coutarel emphasised that workers' 'capabilities to use room to manoeuvre depends on their perception of this concept'. He claimed that workers' involvement in the change process is the key to creating perceived room to manoeuvre; in other words, the emphasis should be put on participatory ergonomics. However, Professor Coutarel

highlighted that this approach is far from what is currently being implemented at company level. Among the numerous shortcomings, MSDs prevention strategies in companies lack long-term vision, involve mainly technical changes, and are often centred only on the workers rather than on working conditions, as is evident in relation to rotation without sufficient training, training on gestures and postures, public health guidelines or exercises during breaks. Moreover, no impact assessment is carried out by employers. According to Mr Coutarel, it is necessary for companies to take a different approach and experiment with new forms of work organisation which preserve workers' room to manoeuvre while monitoring the consequences and impact of such changes. Furthermore, Mr Coutarel concluded that 'there are experiences where an improvement of working conditions led to better economic performance, showing that prevention policies are, indeed, an investment' – in other words, the development of indicators and exchange of good practices should be encouraged.

## MSDs as a symptom of impeded gesture development

In her capacity as a project manager at the National Agency for the Improvement of Working Conditions (*Agence nationale pour l'amélioration des conditions de travail*, ANACT) and as the French EWCO correspondent, Anne-Marie Nicot declared: 'It is necessary to go beyond the traditional risk prevention methodologies mainly focusing on biomechanical factors. Gesture is more than a movement; it has a psychological and a cognitive dimension. Only when the three dimensions go together is there a progression.'

Ms Nicot underlined that work has not only an economic and social function but also a psychological one. Constraints imposed on the gesture result in a dissociation of efforts for the workers. In stating this, Ms Nicot once again brought to the table the notion of room to manoeuvre, introduced earlier by Fabien Coutarel of the University of Bordeaux II. In her view, room to manoeuvre should also be understood as the worker's possibilities to develop his or her gesture in terms of 'expanding discretion'.

Furthermore, Ms Nicot explained in detail the micro-dimension of the gesture to show that it is much more complex than people may think; it is important to bear in mind that MSDs reflect a multifactor, multidimensional and complex phenomenon involving the interplay of numerous factors and manifesting itself in different ways. A comprehensive approach is needed to understand the workers' action dynamics and to build responses based on the work situation. This involves mainstreaming the prevention of MSDs in organisational strategies and going beyond the risk prevention methodology.

## Risk factors of occupational MSDs and strategies for solutions

Jørgen Winkel, professor at the Gothenburg University in Sweden and scientist at the Danish Research Centre for the Working Environment (*Det Nationale Forskningscenter for Arbejdsmiljø*), offered the view: 'When it comes to MSDs, you have to rely on self-perception.' Mr Winkel stressed that the incidence of MSDs increases with age regardless of occupation, exercise improves health but may also have side effects, and even when physical factors are low, one third of workers complain about muscular pains. He argued that physical factors are critical when investigating the reasons for occupational MSDs, but also psychological factors need to be taken into account.

Up to the end of the 1980s, research was centred on the individual, an approach that proved to be unsuccessful – it became clear that the emphasis should be rather on the system, Mr Winkel argued. For example, ergonomist intervention for dentists was not introduced by ergonomists only, but involved a wide range of stakeholders. Moreover, Mr Winkel explained that a risk factor comprises three key dimensions – amplitude, duration and frequency.

While amplitude relates strictly speaking to ergonomics, duration and frequency relate to rationalisation which can be obtained through technology and work organisation. Mr Winkel advised avoiding focusing simply on posture as a risk prevention method but looking also at other risk factors – for example, job intensification which results in more value-adding work (spending more time on a product increasing its value, causing the customer to pay more) and less micro-pauses.

According to Mr Winkel, guidelines for intervention need to be created, bearing in mind, however, that ‘intervention which is successful today may not be successful tomorrow’. As a final point, Mr Winkel highlighted the importance of secondary intervention, as well as the balance between ergonomics and productivity, and warned that classical risk factors must not be forgotten.

### ‘Lighten the load’ campaign

Project manager at the European Agency for Safety and Health at Work (OSHA), Zinta Podniece presented the ongoing European ‘Lighten the load’ campaign on MSDs, which is a follow-up initiative to the first European Week for Safety and Health at Work in 2000. The key to success in tackling MSDs, Ms Podniece suggested, is an integrated management approach, which encompasses prevention, retention, rehabilitation and reintegration of those who suffer, or have suffered, from MSDs. She warned that MSDs are not only a problem for those who are affected by such disorders but have implications for a wide range of stakeholders including employers, workers and their safety representatives, governments, health and safety institutions and policy-makers.

Ms Podniece invited the conference participants to browse the OSHA website for detailed information on the outcomes of the European campaign. She recommended downloading some of the key publications such as the fact sheets on MSDs (available in 22 languages), e-facts, the ‘Prevention of risks’ report featuring a wide range of case studies, the ‘Back to work’ report and the ‘Vibration’ report.

### Key findings on MSDs from national reports

#### Portugal

According to two EWCO correspondents for Portugal, Heloísa Perista and Jorge Cabrita, who are also researchers at the *Centro de Estudos para a Intervenção Social (CESIS)*, ‘the proportion of workers who report symptoms related to MSDs are considerably higher in Portugal than in the EU27’.

For a more detailed overview of the situation in Portugal, a complementary source of data – the National Centre of Protection against Occupational Risks (*Centro Nacional de Protecção contra os Riscos Profissionais*) – had to be used as it is not possible to find any specific questions relating to MSDs in national surveys. Ms Perista and Mr Cabrita echoed a point already raised by Italy’s EWCO correspondent Mario Giaccone, namely the discrepancies between administrative data and survey findings on self-reported MSDs. Administrative data drawing from national sources show that a higher number of female workers report occupational diseases caused by vibrations and mechanical agents: between 2004 and 2006, more than seven in 10 cases of reported MSDs correspond to female workers.

The Portuguese correspondents stated: ‘In spite of the upward trend in MSDs, as well as of the public and academic acknowledgment of the importance of MSDs, there are no official estimations of the social and economic impact of MSDs in Portugal. This could thus be an important area for future analysis in this domain’.

Prevention is another aspect that needs to be addressed in future developments. In this context, the ‘Prevent more, live better in work’ award (*Prevenir Mais, Viver Melhor no Trabalho*) was introduced in 2003 to encourage the development

of good practices in safety and health at work, through the annual public recognition of entities that stand out in the areas of innovation and improvement of the prevention of workplace accidents and occupational diseases.

### Estonia

Kaia Philips, the EWCO correspondent for Estonia and associate professor of statistics at the Institute of Economics at the University of Tartu, pointed out that the main legislative act relevant to MSDs is the Occupational Health and Safety Act. Under this act, work-related illnesses are distinguished as either occupational diseases or illnesses caused by work. In investigating trends in MSDs, some main shortcomings are to be taken into account. Not only do national statistics not provide data on work-related MSDs, but also the causes of such diseases are not explored.

Ms Philips reported that, according to official statistics from the **Labour Inspectorate** (*Tööispeksioon*), the number of occupational diseases has been relatively low and has been showing a declining tendency since 2000. Between 2002 and 2005, the most diagnosed occupational diseases and illnesses caused by work have been those associated with fatigue. In terms of general symptoms and complaints, the incidence of backache does not seem to vary significantly by sex or age. However, middle-aged and older workers suffer from backache more frequently than younger workers. Furthermore, more working women experience shoulder and neck pain more often than their male counterparts.

In Estonia, neither individual estimations about the economic impact of MSDs nor calculations on social and economic losses are currently available. The EWCO correspondent also underlined that some 90% of Estonian companies do not estimate their losses with regard to the incidence of MSDs.

### Denmark

According to the EWCO correspondent for Denmark and analyst at Oxford Research, Paul Andersson, there is no single official definition of MSDs in Denmark; the Danish Working Environment Authority (*Arbejdstilsynet*, **WEA**) relies on the World Health Organization (WHO) international standard diagnostic classification ICD-10.

The conclusions emerging from the data sources present a rather mixed picture of the incidence of MSDs in Denmark. Ergonomic factors seem to contribute more to MSDs than psychosocial factors; the nature of correlation between psychosocial factors and MSDs is not fully explained; women are more exposed to the risk of developing MSDs than men, except in relation to knee disorders where there is no apparent difference according to sex; younger workers tend to particularly report a higher incidence of neck problems; fixed work postures are associated with disorders in the neck, shoulders and hands; walking and standing work postures are the main causes of lower back, knee and hand disorders.

At present, in Denmark, no fully validated estimates exist of the actual costs of MSDs attributable to work environment factors. In 2005, estimates ranged between DDK 2.2 billion (about €295 million as at 19 December 2007) and DDK 7.3 billion (€978 million), thus putting a significant strain on the national economy.

Mr Andersson added that an action plan to reduce sick leave and absence from work was launched in 2003; however, currently no policies directly address MSDs. With regard to prevention policies, the objectives are three-fold: influencing behavioural patterns through intervention in safety or daily life culture; influencing the processes of designing tools and machinery before applying these in production; and intervention in organisational practices and methods of work.

### Netherlands

Finally, Marjolein Douwes, Dutch EWCO correspondent and researcher at TNO Work and Employment (**TNO**), introduced the different sources, terms and definitions of MSDs in use in the Netherlands and outlined the national situation.

Official statistics point to an increase in the incidence of repetitive strain injuries (RSI) from 25.7% in 2000 to 28% in 2000 and to 28.1% in 2004, which was mainly due to an increase in the number of workers within the 20–25 age group. Overall, RSI complaints were reported more often by women than by men in all three years.

It is argued that pace of work and time pressure are counted among the classical factors causing MSDs. Ms Douwes claimed that the number of Dutch people working at a high pace has remained relatively stable since 1997; this trend is counterbalanced by an increase in the decision-making latitude of the Dutch workforce over the last decade.

With regard to legislative developments on return to work policies, the law on disability insurance – the so-called Law Improvement Gatekeeper (*Verbetering Poortwachter*) – which entered into force in 2002 aims to prevent the risk of disability among workers after a period of absence from work. It also aims to encourage a shared responsibility between employers, occupational physicians and workers to improve the process of reintegration into employment. Moreover, a stronger emphasis has been placed on encouraging closer contact between sick workers and their supervisors.

In terms of prevention, policies are still centred predominantly on risk information but the focus is gradually shifting towards risk elimination or risk reduction. Ms Douwes highlights the role to be played by the social partners in collecting and spreading information on work-related health risks and measures to reduce or eliminate these risks at workplace level.

### The way forward: the social partners' point of view

According to Sven-Peter Nygaard, a consultant with the Confederation of Danish Employers (*Dansk Arbejdsgiverforening*, **DA**), affiliated to **BUSINESSEUROPE**, introducing more legislation is not the way forward for more effective prevention of MSDs. He argues that priority should be given to:

- the elaboration of toolkits that are sector and workplace-oriented;
- the acquisition of know-how on the management of occupational risks related to MSDs;
- the development of training programmes on health and safety and the improvement of information on prevention strategies.

Moreover, challenges lie ahead in relation to science and medical research, particularly with regard to exploring further the links between causes and effects of MSDs, which, for the moment, are not easily determined given the interplay between non-work and work-related factors.

Different views were expressed by a research officer of the European Trade Union Institute for Research, Education and Health and Safety (**ETUI-REHS**), Roland Gauthy, who claimed that 'potential causes of work-related MSDs are well identified and widely documented'. Mr Gauthy regretted the lack of adequate legislation on MSDs and called for participatory hazard reduction from design to implementation of tools and work systems, increased knowledge and awareness at all levels, systematic compensation for the victims of MSDs, an updated list of occupational diseases to allow for better EU comparisons and stronger emphasis on job retention and return to work policies.

## Conclusions

In his concluding remarks at the conference on MSDs, Foundation Director Jorma Karppinen emphasised that no ‘one fit all’ solutions exist; nevertheless, he highlighted the need to strive for ‘win-win’ solutions. The director drew attention once again to some of the key issues discussed in the two-day conference, such as the need to develop room to manoeuvre, early intervention policies and participatory ergonomics. Moreover, he put forward two concrete proposals which emerged during the debate to respond to the upward trend of MSDs. First, he highlighted that a sensitivity study on the significant factors contributing to the reduction of risks at the workplace needed to be carried out. Secondly, the creation of a network of exchange on the debate focusing on room to manoeuvre would be instrumental in responding effectively to the challenge of MSDs. Mr Karppinen concluded his presentation by thanking again the Portuguese Presidency for cooperating in the organisation of the conference and also the delegates for their contribution and fruitful debate.

All conference presentations are available on request by emailing [sri@eurofound.europa.eu](mailto:sri@eurofound.europa.eu) or can be downloaded separately at the following web page: <http://www.eurofound.europa.eu/events/2007/confisbon111007/programme.htm>

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