

Prevention policy and practice: approaches to tackling work-related musculoskeletal disorders

European Risk Observatory

Summary

Authors: Richard Graveling (Principal Ergonomics Consultant) with Eva Giagloglou (Research Ergonomist) Institute of Occupational Medicine (IOM), Edinburgh – United Kingdom

Title of EU-OSHA project: Review of research, policy and practice on prevention of work-related musculoskeletal disorders (MSDs)

Project management and editing: Katalin Sas (EU-OSHA) with the support of Nóra Pálmai.

This report was commissioned by the European Agency for Safety and Health at Work (EU-OSHA). Its contents, including any opinions and/or conclusions expressed, are those of the authors alone and do not necessarily reflect the views of EU-OSHA.

**Europe Direct is a service to help you find answers
to your questions about the European Union**

Freephone number (*):

00 800 6 7 8 9 10 11

(*) Certain mobile telephone operators do not allow access to 00 800 numbers, or these calls may be billed.

More information on the European Union is available on the Internet (<http://europa.eu>).

Luxembourg: Publications Office of the European Union, 2020

© European Agency for Safety and Health at Work, 2020

Reproduction is authorised provided the source is acknowledged.

Executive summary

Introduction

The project entitled 'Review of research, policy and practice on prevention of work-related musculoskeletal disorders' aimed to gain a more complete understanding of the occupational safety and health (OSH) challenges in tackling work-related musculoskeletal disorders (MSDs). The intention of the project was to provide a better understanding of the conditions under which strategies, policies and actions to address MSDs are most effective. To achieve this goal, a range of policy-level strategies and initiatives that were used by major stakeholders, including regulators and regulatory agencies, social partners, professional bodies and preventive services were identified. Following their identification, an analysis was undertaken to determine how these various strategies were adapted to the conditions and needs of different beneficiaries (e.g. in different sectors).

To complement this analysis, the resources that were developed and used in the initiatives described were reviewed, with a view to identifying the factors that contributed to their success or failure (including any barriers to their implementation).

Methodology

The starting point for this study was a list of intervention initiatives. This list was compiled from responses of the national Focal Points (FOPs)⁽¹⁾ of most European Union (EU) Member States⁽²⁾ to a questionnaire sent to them by the European Agency for Safety and Health at Work (EU-OSHA). The FOPs were asked to list up to 10 policy-level OSH initiatives carried out over the period 2010-2018. These initiatives needed to be expressly or mainly related to the prevention of work-related MSDs, or to public health initiatives on the prevention of MSDs, and needed to include a significant OSH component.

Over 140 interventions were reported, and these were supplemented with a number of initiatives that were not initially reported by Member States, and some further initiatives from a limited number of non-European countries. Exclusion and inclusion criteria were drawn up and used to select 25 initiatives to be examined further. As part of this selection process, a key consideration was to ensure there was a good range of types of initiative. However, no attempt was made to present a balanced geographical spread, as it was felt that the suitability of initiatives was the overriding factor.

The 25 initiatives were drawn from 14 different countries (including three non-European countries: Australia, Canada and the USA). These represented a wide variety of types of action, ranging from awareness-raising campaigns (including some aimed at schoolchildren or other young people) to direct interventions through inspection and enforcement action. The initiatives from the non-European countries were chosen for their innovative approaches that complemented those undertaken in the EU countries.

Following this selection process, desk research was carried out based on material supplied by the FOPs and from a number of other sources, including interviews with those responsible for the initiatives. On the basis of this material, 25 short summary reports were prepared covering each of the initiatives selected.

Initially, the plan was to restrict the selection of initiatives to those that had undergone some form of formal evaluation to establish their impact. However, it became apparent that very few had been through a systematic and thorough evaluation process and so this criterion was not strictly applied.

Building on this initial work, initiatives from six European countries were chosen for more detailed analysis. The selection was based on the original 25 initiatives selected but, in some instances, the decision was made to broaden the reach of the evaluation to reflect the overall policy or strategy in the

¹ Nominated by each government as EU-OSHA's official representative in that country, the FOPs are typically the national competent authorities for safety and health at work and are primary contributors to the implementation of EU-OSHA's work programmes.

² At the time of publication of this report, the United Kingdom is no longer a Member State of the European Union. Nevertheless, it was still part of the European Union when the research was carried out in 2018-2019; therefore, henceforth in this report, the United Kingdom is referred to as a Member State.

country selected, not just the initiative selected. The six countries selected then also served as the focus for in-depth analysis of the practical experiences of implementing MSD prevention actions in workplaces.

These six reports are available at <https://osha.europa.eu/en/themes/musculoskeletal-disorders>.

Material for these in-depth reports was derived from further desk research and explorations of publicly available material, complemented by interviews with relevant stakeholders in the countries concerned.

The 25 initiatives

The original 25 initiatives are representative of what has been done, and what can be done, for preventing MSDs in the workplace. The initiatives were selected to be as varied as possible, in terms of both the intervention and the target group, and they include campaigns, interventions, legislation, inspections, infographic material and financial assistance at the national level that was usually specifically targeted at small and medium-sized enterprises (SMEs).

The initiatives selected were as follows:

Country	Title
Australia	A participative hazard and risk management (APHIRM) toolkit for the prevention of musculoskeletal disorders
Austria	Campaign/Support scheme for micro and small enterprises — AUVAsicher
Austria	Healthy working in the HORECA sector — Prevention of psychological and ergonomic strain: a targeted campaign of the Austrian Labour Inspectorate
Belgium	Campaigning on musculoskeletal health: 'When a worker suffers, the whole company is affected' and 'Well-being at work in the federal truck'
Belgium	Intervention typology and guidance on preventing musculoskeletal disorders
Canada	Development of a new prevention guideline for musculoskeletal disorders for Ontario
Denmark	The Danish National Job & Body Campaign
Denmark	A strategy for working environment efforts up to 2020 — Risk-based inspections
Denmark	Preventing low back pain in bricklaying work
France	Epidemiological monitoring of work-related health problems: Cohorts Coset-MSA and Coset-Independents
France	TMS (<i>troubles musculo-squelettiques</i>) Pros and assistance of regional coordinators
Germany	The prevention campaign of German Social Accident Insurance (DGUV) — 'Think of me — Your back' (<i>Denk an mich — Dein Rücken</i>)
Germany	Prevention makes you strong — including your back (<i>Prävention macht stark — auch Deinen Rücken</i>)
Germany	The Preventive Health Care Act of 2015 (<i>Präventionsgesetz</i>)
Italy	Economic Incentive Programme
Netherlands	National Social Programme on Working Conditions (MAPA) — Sub-programme on physical workload
Netherlands	Sustainable Physical Work Network
Norway	3-2-1 Together for a good working environment
Norway	Be prepared! (<i>Føre var!</i>) — Norwegian Labour Inspection Authority project to prevent work-related musculoskeletal disorders

Country	Title
Spain	Programme to prevent ergonomic and psychosocial risks in the health and social care sectors
Spain	Good practice guidelines for on-foot shellfish workers
Sweden	Women's work environment
Sweden	Provisions and general recommendations for the prevention of musculoskeletal disorders
UK	Helping Great Britain Work Well strategy and Work Programme on MSDs
USA	NIOSH Musculoskeletal Health Cross-Sector Program

The six initiatives studied in depth

As noted above, following a preliminary examination of the 25 initiatives selected, the initiatives of six EU Member States were selected for in-depth appraisal. They are briefly summarised below.

Austria

The prevention of MSDs has been a fundamental goal of the Austrian Workers' Compensation Board (*Allgemeine Unfallversicherungsanstalt* — AUVA) since 2007. In 2009-2010, AUVAsicher (AUVA's long-term assistance programme for SMEs) focused specifically on MSDs in response to the increased incidence of MSDs and (frequent) related absences from work in Austria. AUVAsicher is underpinned by the fact that SMEs are legally obliged to make use of safety-related and occupational-medical counselling services.

The challenges faced by SMEs in understanding and addressing workplace safety and health are well recognised. The approach of this intervention, by placing specific legal obligations on such employers, presents an interesting concept that might have value for other Member States. The MSD initiative adopted through the AUVAsicher scheme therefore provided an interesting case study for in-depth appraisal.

The target group for AUVAsicher was Austrian SMEs with up to 50 employees (or up to 250 when employees worked in several branch offices). The consultation targeted personnel in SMEs involved in worker protection, workers and employers themselves, workers' representatives and safety advisors.

Implemented through the regular OSH services provided by AUVAsicher to SMEs, the initiative aimed to reduce the incidence of MSDs in three ways, namely through (1) increasing awareness among employers and employees on the prevention of MSDs, (2) proposing and implementing measures to prevent MSDs in enterprises and (3) providing information and instruction.

Belgium

The aim of the campaign 'When a worker suffers, the whole business is affected' was to raise awareness of MSDs and of the tools that can be used to prevent them. It was set up in response to a relatively static (high) incidence of MSDs in Belgian workplaces. This campaign reflected an ongoing national strategic approach that, in recent years, has adopted an increasingly holistic approach to work and health, integrating wellbeing at work and seeking to broaden the 'reach' of MSD messages beyond the narrow focus on workplaces. Although the use of promotional campaigns is not new, the broader dimension of Belgium's initiatives was considered valuable and could be used as a template by other countries. In previous years, the ministry developed a series of MSD prevention brochures for different professions and jobs. The website and the outreach activities promoted the use of these materials.

The focus of the campaign 'Well-being at work in the federal truck' in 2015-2016 was on MSDs and it specifically targeted students in secondary education. The aim was to provide information about MSDs and their causes, and how they can be prevented.

France

The current national strategic plan on health at work adopts a strong focus on the prevention of workplace risk and includes a specific action on the design of equipment and workplaces. MSDs have a major economic effect on French businesses, accounting for 87 % of all work-related illness. Prompted by the burden imposed by MSDs, Health Insurance — Occupational Risks (*Assurance Maladie Risques Professionnels*) launched a national-level prevention programme in 2014, TMS (*troubles musculo-squelettiques*) Pros.

The objective of the programme was to tackle work-related MSDs. It offered businesses support for the development of an action plan to put in place effective MSD prevention measures to reduce the prevalence of work-related MSDs. This strong emphasis on prevention through design is widely recognised as being particularly effective in the long term and this initiative was therefore considered worthy of more detailed appraisal. This initiative was considered within the wider national context, as in France a number of other initiatives have been implemented, such as an initiative to improve the epidemiological surveillance of occupational risks in France (the CONSTANCES population-based epidemiological cohort and the COSET programme).

Germany

Although the incidence of work-related MSDs appears to have fallen in Germany in recent years, it remains high and further action is required to address this and reduce the resultant burden. In 2015, Germany passed an act to strengthen health promotion and preventive health care, namely the Preventive Health Care Act (*Präventionsgesetz*). It stipulated that a National Prevention Strategy (*Nationale Präventionsstrategie*) needed to be developed by the country's different health insurance funds, to be implemented through a National Prevention Conference (*Nationale Präventionskonferenz*, NPK). It therefore provided a strong legal basis for cooperation between social security institutions, federal states and local authorities in the field of prevention and health promotion, as it provided a framework for the development of recommendations and common goals in this area. Goals developed under the National Prevention Strategy needed to take into account the goals of the Joint German Occupational Safety and Health Strategy (*Gemeinsame Deutsche Arbeitsschutzstrategie*, GDA). As a result of the concrete coordination and planning activities required by this law and the budget associated with it, this act has laid important groundwork for MSD prevention in the workplace.

This policy approach, namely collaboration at a strategic level between different partners that is enshrined in legislative provisions, helps to ensure a degree of consistency and coordination that would not be possible if each organisation worked in isolation on individual initiatives. As there is a widespread trend in many European countries (and further afield) towards adopting a more holistic view of health and work, it was considered pertinent to explore this integrated systematic approach in greater depth.

Sweden

Prompted by statistics that showed that women are disproportionately affected by MSDs, in 2011 the Swedish Government tasked the Swedish Work Environment Authority (SWEA — *Arbetsmiljöverket*) with investigating the topic of 'women's work environment' (government decision A2011/2209/ARM). The assignment encompassed a number of projects, with the aim of building an evidence-based plan of action. These projects involved knowledge generation and the dissemination of that knowledge to key players, namely those who had the power to change working conditions and the work environment. The assignment was for the period 2011-2014, and its focus on gender and work has become now 'mainstreaming' and embedded in the national strategy for MSDs prevention.

In September 2014, SWEA received another assignment: to further develop the lessons learned from the previous assignment in order to improve safety and health in mainly female-dominated sectors (e.g. one of the aims was to 'create and make accessible tools for risk assessment with a special focus on

women's work environment'). This would benefit not only women but also men working in those sectors. In 2015, SWEA was given further funding to continue this work and to develop sustainable procedures for including the gender perspective in OSH management.

These initiatives had several mutually reinforcing aims: first, to increase knowledge and awareness of the status of women's occupational health, including their higher risk for developing MSDs, and, second, to develop better methods of highlighting the risks of MSDs in SWEA's inspections. This increased knowledge and awareness is also expected to translate into greater gender-sensitivity in workplaces and ultimately into an improved work environment for both women and men. This enhanced gender-sensitivity places Sweden ahead of many of its European neighbours and, therefore, this approach was explored further to establish lessons that might be of value elsewhere.

United Kingdom

The incidence of work-related ill health in the UK remains unacceptably high and MSDs continue to be a major component of this. As the latest in a series of strategies and initiatives, the strategy 'Helping Great Britain Work Well' was launched in 2016 and will be in place until 2021. It defines six priority themes, one of which tackles work-related ill health ranging from cancer and other long-latency diseases to stress and MSDs. Key elements of this theme have included earlier prevention, which is the most cost-effective strategy, and a greater focus on health issues at work.

This strategy is operationalised through the comprehensive Health and Work programme of the Health and Safety Executive (HSE), which has three health priority plans. The plan for MSDs summarises the UK's current position in relation to MSDs, sets priorities and expected outcomes and defines actions to achieve these priorities and outcomes. In addition, sectoral plans were drawn up to define the HSE's focus over the next 3-5 years. These cover 19 industry sectors and reflect both the three health priorities and the direction set out in the 'Helping Great Britain Work Well' strategy. Employers, trade unions and professional bodies provided input into the development of the sectoral plans.

The policy approach adopted in the UK is focused on enabling and informing, encouraging employers to take action and to address risks, rather than taking the more prescriptive approach adopted in many other EU countries. In the context of concerns about gaps in prescriptive legislative provisions in many EU Member States, this strategy was considered a viable alternative and so was selected for further evaluation.

Findings

Some of the selected interventions had been monitored over the course of their implementation and information on their implementation had been collected (e.g. publicity campaigns that documented the 'reach' of the publications used or the number of visitors to exhibitions). However, no evaluations of their impacts, documenting their success (or failure) in reducing the prevalence of MSDs at work, could be identified for any intervention. One barrier to any such evaluation that emerged during the exercise was the poor quality (or complete lack) of viable data that such an assessment could be based on. Many countries therefore instead have to rely on EU surveys such as the European Working Conditions Survey (EWCS) ⁽³⁾ together with data on workplace injuries collated by Eurostat.

The 2015 EWCS included questions on the extent to which individuals were subject to work exposures to MSDs, such as carrying or moving heavy loads, as well as self-reported health problems over the preceding 12 months. These included one question on backache and two questions on muscular pains in the upper and lower limbs. Although providing a useful general picture of the prevalence of MSDs, the data provide little insight into specific causes (e.g. manual handling).

Like the EWCS, Eurostat's Labour Force Survey (LFS) ad hoc module on accidents at work and other work-related health problems is carried out fairly infrequently, namely every 6 to 8 years. Again, this makes it difficult to use the data to gauge the impact of a relatively short intervention. Eurostat houses a further database relating to accidents at work (European Statistics on Accidents at Work — ESAW),

³ The EWCS covers, in addition to the EU Member States, other countries; these differ across surveys, but, in 2015 (the sixth survey), five EU 'candidate' countries together with Norway and Switzerland were included.

into which data are collated annually, including data on 'injuries' to the back. However, as the database defines an injury as 'a discrete occurrence in the course of work which leads to physical or mental harm', it does not include the cumulative injuries that are the cause of many back problems.

Although some national data provide limited additional insights, the inadequacies of such data present challenges. In many instances, for example, the data are limited to officially recognised MSDs. Therefore, the data present an incomplete picture of the overall prevalence of MSDs and their impact on individual sufferers and those who employ them, as well as on national support infrastructures such as health care and rehabilitation services.

A further limitation of such cross-sectional data is that it is not possible to infer causality from these data sources. The evaluation report on the implementation of the Manual Handling Directive ⁽⁴⁾ referred to this problem. In considering the effectiveness of the directive, it concluded:

It is not possible to determine the extent to which these reported injuries and health problems are directly associated with manual handling activities.

The same report continued:

Statistical data sources relevant to manual handling risks are not ideal as they usually focus on injuries without reference to the underlying cause.

Although the initiatives in question were all felt to have been successful (and, as shown by reports from follow-up visits, those that directly engaged with and were used in workplaces did seem to have evoked real change), there was no evidence to demonstrate their overall effectiveness in reducing the prevalence of MSDs.

From the detailed analysis of the policy initiatives in the six selected countries, including interviews and material from focus group records, several themes emerged that reflected the success factors and challenges in policy-level interventions. As noted above, these did not reflect measurable success (as this could not be assessed), but factors of significance were identified, namely factors that would be valuable to take into account in any future programme of interventions.

One overarching issue that transcends individual interventions is the question of legislation and its benefits. Some countries have detailed legislation requiring employers to engage in certain actions to address workplace hazards and risks relevant to MSDs, although there are pressures to provide more prescriptive legislation specific to MSDs, covering a more comprehensive range of MSD risks than is already the case. Such pressures were apparent in comments made during focus groups that were carried out as part of the present project, and were documented as part of the *ex post* evaluation of the EU OSH directives ⁽⁵⁾. However, legislation cannot be presented as a solution to the difficulties in reducing the prevalence of MSDs, because there is evidence from a number of countries (as reported in the focus groups) that employers do not adequately respond to existing legislative requirements, and a significant minority of companies fail to engage with the process at all.

Themes identified in the policy analysis

A series of central themes has emerged from this research and these should underpin future policy-level interventions to prevent MSDs in the workplace.

Top-level prioritisation, commitment and resourcing

The complexity and multifactorial nature of MSDs means that they cannot easily be addressed by one actor acting in isolation within the national occupational health infrastructure. To be successful, policies need commitment and prioritisation from all actors, starting at the top. In the case of national activities,

⁴ DG Employment, Social Affairs and Inclusion (2015) Evaluation of the Practical Implementation of the EU Occupational Safety and Health (OSH) Directives in EU Member States — Report by Directive: Directive 90/269/EC on the minimum health and safety requirements for the manual handling of loads where there is a risk particularly of back injury to workers.

⁵ DG Employment, Social Affairs and Inclusion (2017) Evaluation of the Practical Implementation of the EU Occupational Safety and Health (OSH) Directives in EU Member States: Main Report, available at: <https://ec.europa.eu/social/main.jsp?catId=148&langId=en&moreDocuments=yes>

this might involve government/political prioritisation, although, in the case of industry-specific initiatives, commitment from stakeholders within the industry, rather than from government, is more likely to be effective. Such commitment is unlikely to be effective without adequate resourcing to ensure that it is carried through into concrete action.

Encouraging collaboration among stakeholders

Involvement in a process helps people to become committed to that process. This applies whether a strategic-level intervention or an individual workplace intervention is planned. Whatever the level of intervention and action, there is undoubted value in involving all stakeholders in identifying risks and in identifying, developing and introducing risk control or prevention intervention strategies (or workplace measures).

Incentivising positively

Both negative and positive incentives appear to be effective in successful workplace change. Their degree of effectiveness relies substantially on the national culture and the perception of change. There is widespread support for the role of formal inspection — and with it the threat of punitive action when failings are identified. However, in one country (France), it was suggested that an inspection was seen by employers as so unlikely that it ceased to present any motivation.

Although information and education are valuable, they are, at times, insufficient, especially among smaller businesses that lack expertise in-house. Therefore, direct support and guidance, either in-kind or financially, can provide a positive incentive for employers to take action.

Despite many efforts to publicise the benefits of workplace interventions (through cost-benefit analyses), businesses can see them as intrusive, invasive and disruptive (and this is one reason why they frequently use training as a 'solution'). Focused support (including financial incentives where appropriate) can help to provide an incentive for change and encourage the adoption of more effective preventive measures.

Coherent planning

Too often, interventions have been carried out without due consideration of the intervention logic or the development of a theory of change to describe and illustrate how and why the desired change is expected to happen. Policy-level interventions need coherent planning, with the intervention logic clearly thought out and explored without neglecting the fact that MSD prevention is one part of the integrated actions needed to promote safety and health in the workplace.

Adopting a wider perspective

There is a widespread tendency to compartmentalise issues and this is especially true of MSDs, which are complex. Workers are not isolated individuals within an organisation; generally, a person cannot (or should not) be seen as purely a task performer, without physical, psychological or social perspectives. There is growing recognition of the fact that workers are exposed to MSD risks outside work (e.g. individual workers might have care responsibilities at home involving a degree of lifting and handling) and that their altered susceptibilities as a result must be taken into account in the workplace. A culture that regards the human worker as, in effect, an 'integrating entity' that reacts to a wide range of influences in a variety of scenarios (often referred to as a 'whole life' perspective) is essential. Moving towards a broader approach, whereby occupational health and public health are considered as a unified entity, is considered a positive step, but this is not yet occurring in all Member States.

Providing continuity

Policy-level actions should not simply stop once they have been completed. They should be continually evaluated and refined, and new (or refreshed) activities should draw on experiences of what has gone before and build on those experiences to improve intervention effectiveness and efficacy.

Promoting the preventive approach

In some countries, there are well-established teams for addressing MSD risks at work. However, in some cases, these teams often act in a responsive, rather than a preventive, manner, initiating action only when a problem arises, rather than taking steps to prevent it from happening in the first place. MSD-related legislation sets out a preventive pathway, and this should be better encouraged to prevent MSDs from occurring.

The preventive pathway embodied in OSH legislation recognises the importance of primary, secondary and tertiary measures, where appropriate. However, the legislation establishes these as a clear hierarchy, with primary prevention taking priority. Evidence from focus group discussions and experience elsewhere suggests that many employers adopt the 'easy' tertiary measure of manual handling training and do not give adequate consideration to workplace design measures that can 'design out' primary risks. However, it must be acknowledged that measures such as training do have a role to play at times — as do rehabilitation measures designed to help those with injuries return to or remain in employment. A human-centred approach — a central tenet of ergonomics — is essential, with workplaces designed to fit the worker, rather than expecting the worker to fit the workplace.

Strengthening the role of ergonomics and ergonomics teaching

The need for expertise in ergonomics has been highlighted in this study. Ergonomists are able to liaise with designers, engineers and others to develop solutions and to take an ergonomic approach to risk identification and job redesign. It is important to recognise that the ergonomics discipline does not concern itself only with the physical hazards associated with the immediate workplace; instead, it adopts a 'systems' approach, exploring the roles of work organisation and the wider organisational environment.

This is not to suggest that ergonomics should solely be the responsibility of professional ergonomists. Experience has shown that other disciplines, including design, engineering and psychology, can benefit from ergonomics knowledge and awareness. As well as enabling professionals from those disciplines to apply ergonomics principles in their own work, such knowledge and awareness can help to facilitate communication between the different disciplines. A number of countries are understood to provide ergonomics training to their inspectors, for example. Beyond these professional groups, there are also suggestions that other groups (e.g. workers themselves) would benefit from suitable ergonomics awareness training.

The European Agency for Safety and Health at Work (EU-OSHA) contributes

to making Europe a safer, healthier and more productive place to work. The Agency researches, develops, and distributes reliable, balanced, and impartial safety and health information and organises pan-European awareness raising campaigns. Set up by the European Union in 1994 and based in Bilbao, Spain, the Agency brings together representatives from the European Commission, Member State governments, employers' and workers' organisations, as well as leading experts in each of the EU Member States and beyond.

European Agency for Safety and Health at Work

Santiago de Compostela 12, 5th floor

48003 - Bilbao, Spain

Tel. +34 944358400

Fax +34 944358401

E-mail: information@osha.europa.eu

<http://osha.europa.eu>



Publications Office