European Agency for Safety and Health at Work



Working with chronic musculoskeletal disorders

Good practice advice report

European Agency for Safety and Health at Work

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Executive summary

Introduction

In Europe there are an estimated 120 million chronic musculoskeletal disorder (MSD) sufferers or one in four of the population ([1]). While MSDs have negative impacts on quality of life, they also have economic consequences, which may be as high as 2 % of gross domestic product in the EU ([2]). As the working population ages and official retirement ages rise, more workers are likely to have a chronic condition, which increases the need for employers to retain workers and for health, social and employment services to support that process. Work needs to be made sustainable across the course of working life.

Importantly, workers do not need to be fully fit to work, and with the right support many people with chronic conditions can continue working. This report provides practical advice on issues related to working with chronic MSDs and what can be done to support individuals who have developed a chronic MSD to allow them to continue to work. It includes practical advice and examples of workplace adjustments, and the conclusions include some pointers for policy-makers. A second report linked to this one, containing eight case examples of individuals working with chronic MSDs, an analysis of the cases, three articles and an information sheet, provides further information ([3]) ([4]) ([5]) ([6]) ([7]).

What are chronic MSDs?

These are chronic problems that affect the muscles, bones, joints and soft tissues. This includes disorders without a precise cause such as chronic back pain or chronic upper limb disorders, as well as rheumatic diseases and degenerative conditions such as osteoarthritis or osteoporosis. Conditions caused or aggravated by work are known as work-related MSDs. In the medical field, conditions are more commonly referred to as rheumatic and musculoskeletal disorders (RMDs). For the purposes of this report, chronic MSDs are those that last more than 12 weeks.

The impact of chronic MSDs on individuals

Chronic MSDs can have different levels of impact on the individual, ranging from mild discomfort to unbearable pain. Although the pain is not always severe, it is often persistent, nagging and wearing. The severity may vary, often unpredictably. The pain can make repetitive movements difficult. The conditions often cause stiffness, and sufferers can take a while to get moving. Sleep can be disturbed, which can make it more difficult to ignore the pain. People can become tired and even fatigued, particularly those with an inflammatory disease or those whose sleep is disturbed. Being stressed, anxious or depressed because of the pain or for other reasons also makes it harder to ignore the pain. People with a chronic condition often worry about the future, in relation to whether their limitations will increase or they will lose their job. Some conditions are characterised by flare-ups, so sufferers will have good and bad days.

If an employer is believed to be unsympathetic, presenteeism may occur, whereby a worker continues to work as best they can in unsatisfactory conditions, afraid of losing their job; however, they become increasingly less productive, and the situation increases their stress levels and worsens their condition.

([1]) EULAR (European League Against Rheumatism), *Position paper. Horizon 2020 Framework Programme: EULAR's position and recommendations*, 2011. Available at: https://www.eular.org/myUploadData/files/EU_Horizon_2020_EULAR_position_paper.pdf

([2]) Bevan, S., 'Economic impact of musculoskeletal disorders (MSDs) on work in Europe', *Best Practice & Research Clinical Rheumatology*, 2015, Vol. 29, No 3, pp. 356-373.

([3]) EU-OSHA (European Agency for Safety and Health at Work), *Analysis of case studies on working with chronic musculoskeletal disorders*, 2020. Available at: https://osha.europa.eu/en/publications/analysis-case-studies-working-chronic-musculoskeletal-disorders/view

([4]) https://oshwiki.eu/wiki/Working_with_rheumatic_and_musculoskeletal_diseases_(RMDs)

([5]) https://oshwiki.eu/wiki/Managing_low_back_conditions_and_low_back_pain

([6]) https://oshwiki.eu/wiki/Early_intervention_for_musculoskeletal_disorders_among_the_working_population

([7]) EU-OSHA (European Agency for Safety and Health at Work), *Working with chronic musculoskeletal disorders (MSDs)*, information sheet. Available at: https://osha.europa.eu/en/publications/working-chronic-rheumatic-and-musculoskeletal-diseases/view

Gender

Women, especially in low-grade jobs, may be at risk of double discrimination because of their gender and because of their condition, and they may be considered more dispensable. Men are more likely to be employed in heavy physical work than women, in which it can be assumed that changes to allow them to continue working are not possible. However, often ergonomic changes to make work easier or swapping tasks with colleagues are possible ([8]). In contrast, men in skilled manual work may have more opportunities to move to a mentoring role than women in low-grade unskilled jobs, such as cleaners.

MSDs and people's ability to work

For individuals affected by chronic MSDs it is important to realise that, with the right adjustments, they can usually still work, and often only simple and cheap measures are needed, such as a different computer mouse or an adjustment to their working hours or how they carry out their tasks. Those with chronic MSDs learn to work around their problems and manage their pain, for example by avoiding repetitive movements, prolonged sitting without a break or standing for too long. There are a number of advantages of trying to continue to work, including financial security and a sense of purpose. In general, being in good-quality employment helps protect mental and physical health. It is important that the worker has a positive attitude; however, according to those with chronic conditions, the factor limiting their ability to work is too often a lack of understanding and support in the workplace rather than the condition itself.

For the employer, these workers are often productive, motivated and try to avoid missing work, and there is a cost to their business if they lose valuable expertise and knowledge from the workforce.

Employers' responsibilities

Safety and health regulations require employers to prevent risks, based on risk assessments ([9]). The priority is to eliminate risks at source, take collective measures to make work safer and healthier for all workers and adapt work to suit workers. This is important, as measures to make work easier for all workers could enable someone with a chronic health condition to continue working. Particularly sensitive groups, such as workers with chronic conditions, must be protected against hazards that specifically affect them. Regulations setting minimum safety and health standards for workplaces include requirements related to making workplaces accessible for workers with a disability ([10]).

Equality legislation requires employers to make reasonable provisions to accommodate ([11]) employees with disabilities. Such adjustments could include providing equipment, adapting hours of work, changing tasks or providing training. Some countries in the EU have more detailed requirements and specific programmes in place, for example regarding return to work following sick leave.

Designing inclusive workplaces

Making workplaces more inclusive for all workers, for example when buying equipment, planning tasks or altering buildings, is the preferred solution, as it reduces the need to make adjustments for individuals. Universal design is the design of buildings, products or environments to make them accessible to all people, to the greatest extent possible, regardless of age, size, disability or other factors. Examples include a ramp at an entrance or automatically opening doors that everyone uses but that are essential for a wheelchair user. Adjustable seating and work surface heights are another good example. Often specific adjustments, such as ergonomic equipment or flexible working hours, to support an individual with a chronic condition would make work easier and safer for the whole workforce.

([8]) EU-OSHA (European Agency for Safety and Health at Work), *The ageing workforce: Implications for occupational safety and health. A research review*, 2016. Available at: https://osha.europa.eu/en/publications/ageing-workforce-implications-occupational-safety-and-health-research-review/view

([9]) https://osha.europa.eu/en/legislation/directives/the-osh-framework-directive/1

([10]) https://osha.europa.eu/en/legislation/directives/2

([11]) https://ec.europa.eu/social/main.jsp?catId=1473

Principles for managing chronic MSDs at work

The process for successfully managing chronic MSDs at work is built on some key elements:

- good safety and health and **preventing MSD risks** for all workers, based on risk assessment, recognising that some workers may be more **susceptible** to such risks;
- **early intervention** to address problems and encouraging early reporting of problems;
- promoting **good musculoskeletal health** in the workplace.

To these should be added:

- avoiding the need for individual accommodations by making the workplace environment and equipment as **inclusive** as possible (universal design);
- effective **return-to-work planning**;
- **coordination** between safety and health and health and human resources/equal opportunities policies;
- a culture of worker **consultation** and good communication;
- **training** for managers and workers.

For the individual the workplace needs to provide:

- **Understanding:** a comprehensive approach to understanding an individual's needs through open conversations.
- **Awareness:** being aware of the risks and the problems in the workplace for workers with some musculoskeletal problem.
- **Support:** helping people with a chronic condition to manage their own health proactively.

Prevention. It is fundamental to ensure that risks are assessed and reduced for the whole workforce to ensure that the workplace is safe and designed to promote musculoskeletal health. This includes avoiding tasks involving awkward postures, prolonged static postures, sedentary behaviour, repetitive movements and manual lifting and handling. Workstations should be ergonomically designed and laid out, and ergonomic tools and adjustable ergonomic equipment, for example seating, provided. It is also important to take action to reduce stress at work. Work-related stress has the potential to aggravate symptoms in those with chronic MSDs, and if necessary additional measures should be taken for anyone who may already have a musculoskeletal condition and so may be more susceptible to stress.

Avoiding static postures and sedentary work should be part of the prevention approach. Prolonged sitting has been associated with a number of adverse health outcomes and, for those with chronic MSDs, may make their symptoms worse ([12]). Static work postures should be avoided in general for all workers, and this includes avoiding prolonged standing ([13]) and designing movement opportunities into the work process, for example enabling workers to take short breaks to walk and stretch, when needed. If this is implemented for all workers, a special approach for an individual with a chronic MSD becomes unnecessary.

Early identification and early intervention allow support to be given quickly. The earlier a problem is addressed, the easier it is to deal with. This applies to both non-work-related conditions and those caused or aggravated by work. However, workers are often reluctant to disclose their conditions and declare their health status ([14]). Workers need to feel that they can trust their employer or manager, know that they will be listened to and supported and that the issues they raise will be acted upon. They need to be encouraged and enabled to disclose health problems as soon as they arise and there needs to be a culture of open conversation. It is important that workers are also encouraged to seek medical advice as soon as possible. The European Agency for Safety and Health at Work (EU-OSHA) has published a guide that includes advice for workers and managers on speaking about a health problem ([15]).

([12]) https://oshwiki.eu/wiki/Musculoskeletal_disorders_and_prolonged_static_sitting
([13]) https://oshwiki.eu/wiki/Musculoskeletal_disorders_and_prolonged_static_standing
([14]) EU-OSHA (European Agency for Safety and Health at Work), *Work-related musculoskeletal disorders: Prevention report*, 2008. Available at: https://osha.europa.eu/en/publications/report-work-related-musculoskeletal-disorders-prevention-report/view
([15]) EU-OSHA (European Agency for Safety and Health at Work), *Conversation starters for workplace discussions about musculoskeletal disorders: An EU-OSHA resource for workplaces,* 2019. Available at: https://osha.europa.eu/en/publications/conversation-starters-workplace-discussions-about-musculoskeletal-disorders/view

Effective rehabilitation and return-to-work planning are needed to support a worker who is absent because of a chronic condition to get back to work. Return to work has been researched previously by EU-OSHA in relation to ageing and following cancer treatment ([16]) ([17]). Workplace actions include having an up-to-date return-to-work policy, managers staying in contact with workers, identifying other specialists and implementing and evaluating workplace adjustments. Plans for returning to or remaining in work should be tailored to each individual and based on assessment.

Providing support and workplace accommodations. Good prevention and designing workplaces to be inclusive will reduce the need for individual adjustments and accommodations for individuals with chronic conditions. When they are needed, a simple conversation with the worker may be sufficient to identify their needs, although it is important to seek expert advice when necessary. This conversation should cover their symptoms and how they vary, what tasks they find challenging, what support they need, etc. Carrying out a safety and health risk assessment for the individual will help to determine suitable measures.

A joined-up approach between the individual, the line manager, health providers and the employer is needed, with the common goal of helping the individual to stay at work and work within their abilities. Medical advice, if shared with permission, should help the employer to understand what support the worker needs, what tasks are appropriate and what should be avoided. Expert advice should be sought where necessary, for example from occupational health specialists, ergonomists, physiotherapists, occupational therapists and architects. Disability associations and patient support groups may provide information and other help, including training, for the workplace. Some Member States have support programmes and financial support schemes in place.

Workplace accommodations should be planned by focusing on an individual's work ability (an individual's capabilities, not their disabilities). Adjustments can include changing tasks, equipment and the workplace, changing working patterns and providing support. Often a combination of several measures is needed. Sufficient time should be allowed, for example because the individual may need to try out different measures to find what works best in practice. It is important to review measures and make any additional changes if the worker's condition changes in the future. If the solution is not obvious, expert support can help the process go more smoothly and reduce the need for trial and error.

Managers and workers need to be aware of musculoskeletal health at work. They need training to enable a better understanding of the impact of chronic MSDs and ways of supporting colleagues to remain in work.

Promoting musculoskeletal health at work can include encouraging back care and physical activity and taking action to tackle prolonged sedentary work ([18]).

Advice on specific adjustments, practices and health

Adjustments to enable individuals to continue working can include changes in job tasks, equipment and the workplace and changes in working patterns.

Working patterns and teleworking. Support may include changing working hours and taking a more flexible approach to start and finish times, working reduced hours or choosing to work different days. Teleworking may also be relevant, allowing the individual to reduce commuting time. However, it is essential that individuals working away from the workplace have equipment of the same standard as that used in their main work environment and are provided with advice on using it.

Tools and equipment can also be provided, including trollies to move loads, adapted computer keyboards and mice, voice recognition systems and sit-stand desks.

Task rotation, whereby an individual can switch between tasks, can bring benefits to an organisation by promoting flexibility, skills and employee retention.

([16]) EU-OSHA (European Agency for Safety and Health at Work), Advice *for employers on return to work for workers with cancer,* 2018. Available at: https://osha.europa.eu/en/publications/advice-employers-return-work-workers-cancer/view

([17]) EU-OSHA (European Agency for Safety and Health at Work), *Research review on rehabilitation and return to work*, 2016. Available at: https://osha.europa.eu/en/publications/research-review-rehabilitation-and-return-work/view

([18]) https://oshwiki.eu/wiki/Promoting_moving_and_exercise_at_work_to_avoid_prolonged_standing_and_sitting

Driving with MSDs may mean driving with pain, joint stiffness or fatigue. Taking regular breaks, adjusting the seat to provide correct support, taking care when entering and exiting the vehicle and never lifting loads immediately after stopping (stretch first) is important for all drivers, but especially so for those with a chronic MSD. There are other helpful tools for drivers, including keyless entry systems, power-assisted steering, hand control and pedal modifications, and wearing driving gloves to improve grip.

There are legal requirements in relation to workplace accessibility for individuals with **severe mobility problems** and who require crutches or wheelchairs. As already mentioned, universal design principles should be applied when buildings are designed, or whenever changes are planned, to ensure that buildings and workplaces are fully accessible in the first place. Again, there may simple solutions to help an individual to stay at work, for example allocating a parking space near the entrance or moving their office to the ground floor.

Simple measures to allow individuals to continue working ([19])

Equipment and devices that have allowed individuals to continue working include:

- an ergonomic mouse
- speech recognition software
- a wireless headset for answering the phone
- a foldable perching stool for site visits
- a special cushion to relieve pressure when sitting
- an adjustable height desk/sit-stand desk

Adjustments to work tasks and working patterns that have allowed individuals to continue working include:

- a gradual return to work and reduced hours
- flexible working to accommodate medical appointments
- teleworking on 'bad days'
- later start time to avoid standing on the metro
- the opportunity to take more frequent breaks to move and stretch
- the opportunity to lie down in the rest room if fatigued
- swapping physical tasks with colleague

Conclusions for the workplace

The guidance and examples identified in this report and the linked report on case examples ([20]) suggest that a variety of factors is involved in successfully managing individuals with chronic MSDs. These include the following:

- Maintain good safety and health standards and good ergonomics, whereby work is made easier, safer and healthier for the whole workforce, and promote health and well-being. Plan workplaces to make them more inclusive, with additional accommodations for individuals if and when necessary.
- Employers have a positive attitude and supportive policies in which they value their workers and their skills, seeing them as an asset, not a problem.
- Workers do not need to be 100 % fit to work and the focus should be on workers' capabilities, not disabilities.
- Intervene early once health problems arise, with the focus on keeping workers in work rather than getting them back to work once they have left employment.

([19]) EU-OSHA (European Agency for Safety and Health at Work), *Analysis of case studies on working with chronic musculoskeletal disorders*, 2020. Available at: https://osha.europa.eu/en/publications/analysis-case-studies-working-chronic-musculoskeletal-disorders/view

([20]) EU-OSHA (European Agency for Safety and Health at Work), *Analysis of case studies on working with chronic musculoskeletal disorders*, 2020. Available at: https://osha.europa.eu/en/publications/analysis-case-studies-working-chronic-musculoskeletal-disorders/view

- Maintain good communication between the worker and the organisation, whereby the employee feels able to raise problems and discuss their needs, including involving their trade union or safety representative, if there is one, regarding measures and arrangements.
- Develop knowledge among human resources personnel, supervisors and managers of the worker's health condition and knowledge and sufficient skills in the workplace to support continued working or return to work.
- In individual cases, use a range of measures such as:
    - adjusting working hours such as a temporary or permanent reduction in hours, time off for medical appointments, varying start or finish times, flexitime (applied to the whole workforce);
    - teleworking;
    - providing simple equipment, e.g. to make sitting more comfortable, reduce standing or make computer work more comfortable and avoid static postures;
    - facilitating breaks to move and stretch and take rest breaks;
    - providing more individual control over how tasks are done, or rotating more physically tiring or repetitive tasks;
    - providing a parking space near the entrance;
    - allowing a gradual return to work where there has been sick leave.
- And
    - allow enough time for the process, testing measures in practice to find out what works best and reviewing arrangements.
- Put teleworking and flexible working hours policies in place for the whole workforce.
- Integrate measures to facilitate return to work and support workers with health problems into broader company policies — because some accommodations to support an individual may benefit all employees, and improved workplace ergonomics for all the workforce may reduce the duration of sickness absence and facilitate continued working or return to work.

Policy pointers for external services and policy-makers

Based on this report and other research by EU-OSHA on return to work and working with chronic diseases ([21]), the following broader policy pointers are suggested:

1. Focus on making work sustainable across the course of working life, with improved support for small businesses to prevent occupational risks and promote health and well-being at work.
2. Direct policy towards achieving inclusive workplaces through universal design, including through the provision of support to workplaces.
3. Intervene early once health problems arise, with more focus on staying in work rather than returning to the workforce once out of employment.
4. Encourage clinicians and employers to focus on workers' capabilities, not their disabilities.
5. Make return to work the goal for all involved, including as a clinical outcome or treatment goal for health practitioners. Encourage health practitioners and offer training in this respect.
6. Tailor plans for returning to or remaining in work to each individual and base them on assessment.
7. Provide access to external support, in particular for small businesses, in the form of suitable services and programmes for the employer and the individual on the return-to-work process, individual return-to-work plans and workplace adjustments.
8. Provide multidisciplinary support programmes covering public health, social services and employment services, and provide coordinated support, including financial and technical support, to companies and their employees seeking to return to work.
9. Improve access to occupational health services for both employers and employees to allow

([21]) See 'OSH management in the context of an ageing workforce' (https://osha.europa.eu/en/themes/osh-management-context-ageing-workforce). See also EU-OSHA (European Agency for Safety and Health at Work), *Rehabilitation and return-to-work after cancer — Instruments and practice*s, 2018. Available at: https://osha.europa.eu/en/publications/rehabilitation-and-return-work-after-cancer-instruments-and-practices/view

early detection and prevention. This is particularly important for small businesses and ‘atypical workers’.

10. Avoid silo working through joined-up policy, interventions and budgets.
11. More generally, put greater public health focus on non-life-threatening chronic diseases including MSDs as well as on prevention and early intervention measures. Develop and support early intervention healthcare programmes for MSDs.
12. Assess and address any gender biases, e.g. in access to services or barriers to continued working in the workplace.

Overall conclusion

With the right employer attitudes and workplace adjustments, combined with support from public health systems and social and employment services, many workers with chronic conditions can continue working. Even in the absence of external support, there are many simple measures that can be taken to support a worker with a chronic MSD to continue working, and good communication between worker and employer are key to getting the solutions right.

1 Introduction

Musculoskeletal disorders (MSDs) are the most widespread disorders in the global workforce. They can be either work related or related to a health condition such as osteoarthritis or rheumatoid arthritis. For the purposes of this report, chronic MSDs are those that last more than 12 weeks and include chronic back pain or chronic upper limb disorders, as well as rheumatic diseases, degenerative conditions such as osteoarthritis or osteoporosis and non-specific pain syndromes categorised as chronic back pain.

For many rheumatic and musculoskeletal disorders, the peak age at onset is decades before retirement age, meaning that the majority of people with the conditions are still in employment when diagnosed with their chronic disease. The workforce is ageing and official retirement ages, the age at which people receive state pension, are being extended in European countries (EU-OSHA, 2016a). This means that the number of workers living with age-related chronic health conditions is rising in the European Union (EU). Such conditions affect people's ability to work to varying degrees. While some are unable to continue working, many wish to and would be able to do so if their employer made adaptations to their workplace to accommodate their needs (Eurofound, 2019). Access to employment is also a major concern for young people with childhood and adolescent onset rheumatic and musculoskeletal disorders (Lunt et al. 2019).

This report is part of a larger project on working with chronic MSDs that includes a report containing eight case studies and their analysis, three articles and an information sheet (Graveling et al., 2019; Wolfe, 2019; EU-OSHA, 2020; Rodriguez-Rodriguez et al., 2020) ([22]). The overarching project is, in turn, part of a larger research activity on MSDs ([23]). The report provides practical advice on issues related to working with a chronic MSD and what can be done to support individuals who have developed a chronic MSD to enable them to continue working.

Box 1 Definition of chronic MSDs

Chronic MSDs are chronic problems that affect the muscles, bones, joints and soft tissues. This includes disorders without a precise cause, such as chronic back pain or chronic upper limb disorders, as well as rheumatic diseases, degenerative conditions, such as osteoarthritis or osteoporosis, and non-specific pain syndromes categorised as chronic. Conditions caused or aggravated by work are known as work-related MSDs. In the medical field, conditions are more commonly referred to as rheumatic and musculoskeletal diseases or RMDs. For the purposes of this report, chronic MSDs are those MSDs that last more than 12 weeks.

1.1 Background

1.1.1 Policy context

Preventing problems at work for individuals with chronic MSDs needs a holistic approach considering personal, disease-related and work-related factors. Employment policy, healthcare policy, social care policy and policy on the ageing workforce, and policy on disability rights and work are all relevant to this topic.

According to the European Commission, MSDs remain one of the most serious and widespread work-related illnesses in the EU, which give rise to a major cost burden for individuals, businesses and society in general. MSDs affect workers of all ages in all sectors and occupations. According to the 2013 EU Labour Force Survey, they represent about 60 % of all work-related health problems in the EU, and account for 60 % of sickness absences and cases of permanent incapacity to work (EC, 2017a). In addition, the number of workers who have a chronic health conditions such as osteoarthritis may also be increasing because of the ageing workforce. In the EU, employers are responsible for ensuring healthy and safe working conditions for their employees. In its occupational safety and health (OSH) strategy for 2014-2020 and the communication that implements it (EC, 2017b), the European

([22]) Working with chronic MSDs musculoskeletal disorders info sheet: https://osha.europa.eu/en/publications/working-chronic-rheumatic-and-musculoskeletal-diseases/view

([23]) https://osha.europa.eu/en/research-work-related-msds

Commission includes among its priorities the prevention of work-related MSDs, the promotion of diversity-sensitive risk assessment and addressing the ageing of the European workforce.

The EU has a strong emphasis on equality of people with disabilities at work and is also concerned with promoting active ageing, including in the context of the ageing workforce, to promote longer and healthier working lives. The EU supports better workplaces for all (EC, 2017b) acknowledging the fact that everyone has the right to work and to contribute effectively to the work system. The European Pillar of Social Rights (*Building a more inclusive and fairer European Union*) (EC, 2016) includes, as Principal 17, the right of people with disabilities to a work environment adapted to their needs. Principal 3 refers to equal treatment and equal opportunities regarding employment for those with a disability. The right of workers to have a high level of safety and health protection and access to a healthy, safe and well-adapted work environment as well as the right to a working environment that enables them to prolong their participation in the labour market are covered by Principle 10. The work of both the European Agency for Safety and Health at Work (EU-OSHA; e.g. 2016b) and the European Foundation for the Eurofound (e.g. Eurofound, 2017) highlights the negative impact of poor working conditions on prolonging the duration of the working life and achieving higher employment rates among older workers, and therefore the importance of making work sustainable. Both the Pillar of Social Rights and the Europe 2020 strategy (EC, 2010) seek to increase employment rates.

Healthcare policy is crucial to this issue. A health-related objective of the EU is to ensure cost-effective health promotion and disease prevention, including through the sharing of best practice (EC, 2017c). The EU-funded Chrodis project is contributing to promoting the implementation of successful policies and practices for chronic diseases, including for the workplace (Chrodis Plus, 2020).

Internationally, Article 27 of the United Nations Convention on the Rights of Persons with Disabilities covers the right of persons with disabilities to work, on an equal basis with others (United Nations, undated). One of the goals of the World Health Organisation's (WHO's) 2016-2025 Europe action plan is to promote musculoskeletal health by making school and workplace settings more supportive of health. In addition, it emphasises the importance of early intervention and supporting returning to and remaining in the workplace (WHO, 2016).

1.1.2 Background to this report

The report follows on from a previous report published by the European Agency for Safety and Health at Work (EU-OSHA) on the topic of MSDs and return to work that identified a number of consistent approaches to enabling workers to return to work or continue working, highlighting, for example, the importance of the early recognition of problems, early intervention and providing funding for workplace adaptations (EU-OSHA, 2007a). This was followed by an activity on the ageing workforce and OSH, which covered MSDs and how to achieve sustainable work across the work-life course by improving working conditions and measures to support return to work (EU-OSHA, 2016a,b,c). As a group, older workers are more at risk of musculoskeletal problems and are more likely to have chronic conditions, and extending working lives, without good workplace risk management, has the potential to exacerbate existing MSDs.

Research by EU-OSHA on return to work after cancer is also of relevance in the context of chronic MSDs (EU-OSHA, 2018a,b). Among the findings of the work is that the employer's attitude and knowledge, and available external support for the employer and worker can play fundamental roles in enabling or discouraging people from returning to work.

These previous projects highlight the importance of making work sustainable across the work-life course and providing workplace accommodations for individuals to support continued working if and when necessary. The work also highlights that multidisciplinary approaches can often have a more positive effect on work retention and returning to work than other approaches and the importance of early intervention. The ultimate overall goals are to create workplaces that promote good health; take preventive action to remove risks for all workers; encourage early intervention for any musculoskeletal problem; make reasonable adjustments to enable people to work despite their MSD; and accommodate effective rehabilitation and return-to-work plans.

1.2 Aim and methodology

1.2.1 Aim

The aim of this report is to increase understanding of the issues concerning staying in work or returning to work for individuals with chronic MSDs. The report focuses on providing possible solutions and practical advice to allow people who have developed a chronic MSD to continue working through a supportive working environment. In addition, the report briefly covers the provision of support services external to the workplace and also provides some policy pointers.

The report includes the following:

- an explanation of what chronic MSDs are, detailing their prevalence and impact;
- information on managing chronic MSDs at work, and how to support worker retention and return to work;
- advice on adjustments and work practices;
- examples of good practice.

1.2.2 Methodology

A number of approaches were taken in the project to identify the information on chronic MSDs, data, guidelines on supporting people at work with chronic MSDs and examples of workplace adjustments made to enable retention at work presented in this report.

The main focus of the searches was on finding practical examples of workplace accommodations and adjustments to allow individuals with chronic MSDs to stay at work. These were identified through grey literature searches, website searches and searches of some scientific literature.

Previous EU-OSHA products with relevance to chronic MSDs were identified. Furthermore, research papers were collated that examined the prevalence of chronic MSDs nationally and internationally. Previous EU-OSHA case studies were also searched including good practice awards examples to identify relevant interventions.

The methodology and a list of web searches is outlined in Appendix 1.

1.3 What are chronic MSDs?

MSDs are among the most frequently reported health problems worldwide (WHO, 2018). The musculoskeletal system comprises muscles, bones, joints, ligaments and tendons, and musculoskeletal conditions cover a vast range of health conditions, including common pain syndromes and rarer conditions of the immune system (Arthritis Research UK, 2019). Often a problem lasts for a short time and the individual will recover with little need for treatment. However, sometimes problems will last longer and may be related to underlying medical conditions.

The definition used in this report for chronic MSDs is as follows:

> Chronic MSDs are those that last more than 12 weeks (EU-OSHA, 2007a). This includes chronic back pain or chronic upper limb disorders, as well as inflammatory rheumatic diseases, degenerative conditions such as osteoarthritis or osteoporosis or non-specific pain syndromes categorised as chronic.

Some MSDs can be caused by work or made worse by work and these are known as ‘work-related MSDs’. In the medical field, conditions are more commonly referred to as rheumatic and musculoskeletal diseases (e.g. see EULAR, undated). This terminology is used in this report when, for example, quoting from sources that use the term RMDs.

Common chronic MSDs causing pain and impaired function for which sufferers may need accommodations to support continued working include the following:

- joint conditions (inflammatory autoimmune diseases) — for example rheumatoid arthritis, psoriatic arthritis, ankylosing spondylitis and juvenile idiopathic arthritis;
- other joint conditions — for example gout and osteoarthritis;

- bone conditions — for example osteoporosis and associated fragility fractures, osteomalacia and rickets;
- spinal disorders — for example lower back pain (see Box 3) and disc disorders;
- regional and widespread pain disorders — for example frozen shoulder, tennis elbow and fibromyalgia;
- musculoskeletal injuries — for example strains and sprains related to occupation, sports, high-energy limb and spinal fractures;
- genetic, congenital and developmental childhood disorders — for example scoliosis;
- multisystem inflammatory diseases that commonly have musculoskeletal manifestations such as connective tissue diseases and vasculitis — for example systemic lupus erythematosus.

There are a range of causes of such disorders, including ageing, injuries, congenital conditions and developmental disorders.

These disorders can present a range of severity from mild discomfort to unbearable pain. Although the pain is not always severe, it is often persistent, nagging and wearing. While pain is the most ubiquitous symptom of MSDs, other symptoms include joint inflammation, weakness and stiffness — particularly in the early morning — with fatigue and loss of mobility being associated with some disorders. Common symptoms are listed in Box 2. Sleep can be disturbed, which can make it more difficult to ignore the pain. The symptoms of disorders can fluctuate, which means that an individual's health status can vary day to day. Being stressed, anxious or depressed because of the pain or for other reasons also makes it harder to ignore the pain. People with a chronic condition often worry about the future, in relation to whether their limitations will increase or they will lose their job.

Furthermore, many RMDs are 'invisible' and it is often difficult for co-workers, line managers and employers to understand the impact that the disease may have on work, especially when the disease fluctuates over time and people are having 'good' days and 'bad' days (Verstappen, 2015). These are important issues for managing the conditions at work.

An individual may have more than one health condition (comorbidity) (Duffield, 2017). For example, in a survey about work of adults with rheumatoid arthritis, many reported having an additional disease (NRAS, 2017). They most commonly reported having high blood pressure, back pain and osteoarthritis, and a large proportion also reported using medication for depression and for anxiety.

Some conditions can affect young people, such as juvenile arthritis.

Box 2 The most common symptoms experienced by people working with MSDs

- Problems with mobility or function such as dexterity, flexibility, strength and grip
- Early morning stiffness
- Pain
- Fatigue
- Concentration
- Reduced physical and mental stamina
- Decreased agility

Source: Fit for Work Ireland, undated

As mentioned, some MSDs are caused or aggravated by work, specifically where physical demands are too high; by work involving poor, static or awkward postures; by work involving high levels of repetition; by poor working environments or psychosocial occupational factors. There is also increasing evidence linking occupational stress and psychosocial risks to MSDs (e.g. Waddell et al. 2001; EU-

OSHA, 2007a, 2020; Hassard et al., 2015; van den Heuvel, 2017; CCOHS, 2020). As will be covered later in the report, occupational causes of MSDs should be assessed and prevented.

Box 3 Common musculoskeletal conditions

Back pain is caused by numerous factors, including muscle strain or the displacement of an intervertebral disc. Back pain may also result from an underlying illness or injury.

Osteoarthritis is a degenerative joint condition affecting the weight-bearing joints, such as the hips, knees and ankles, as well as the hands and spine. In the initial stages, pain occurs in the joints during and after activity but, as the condition progresses, pain may be experienced with minimal movement or even during rest.

Rheumatoid arthritis is an autoimmune disease that causes chronic inflammation of the joints. It typically affects the small joints of the hands and feet and affects the lining of the joints, causing a painful swelling that can eventually result in bone erosion and joint deformity. It occurs when the immune system mistakenly attacks the body's own tissues. In addition to causing joint problems, rheumatoid arthritis can sometimes affect other organs of the body — such as the skin, eyes, lungs and blood vessels.

Work-related neck and upper limb disorders are MSDs affecting the upper part of the body, caused or aggravated by certain types of work and the working environment. Examples include epicondylitis (tennis or golfer's elbow), carpal tunnel syndrome, repetitive strain injury and neck pain.

Osteoporosis is a condition whereby there is a progressive loss of bone density and decrease in the strength of the skeleton leading to a risk of fracture.

Source: Fit for Work Ireland, undated

Low back pain: The majority of the population will have low back pain at some point in their lives. While this is often short-term low back pain lasting for a few days or weeks, in some cases it can continue for longer and is described as a chronic problem. While the causes of much back pain are non-work related, work activities can exacerbate such problems or cause the sufferer to experience difficulties at work. Back pain can severely impact on a person's ability to do their job, even if work may not have been the cause; however, with the right measures many people can continue to work (Graveling, 2019). Work-related causes include manual handling, working in awkward postures and prolonged sitting at work, especially if an individual is also exposed to whole-body vibrations as well, such as when driving.

1.4 The prevalence and impact of chronic MSDs

1.4.1 Prevalence of chronic MSDs

A quarter of the EU working population reports having a chronic disease. This share increased by eight percentage points between 2010 and 2017. The upwards trend is set to continue as the population ages, since workers over the age of 50 are more than twice as likely to have a chronic illness as workers under 35. However, among younger workers (aged 16-29) the share of those reporting chronic illness is also high and rising, from 11 % in 2010 to 18 % in 2017 (Eurofound, 2019).

Among the working population, chronic MSDs are the leading cause of disability (Woolf, 2011) and are the main reason for absence from work (Eurofound, 2010). In a worldwide study (Global Burden of Disease, 2010) ([24]), rheumatic and musculoskeletal disorders were seen to be responsible for almost 30 % of years lived with disabilities, and the highest ranked disorder in relation to the years lived with disability was low back pain.

According to the European League Against Rheumatism (EULAR, 2011, 2018), around one in four people in the EU (more than 120 million people) have a rheumatic or musculoskeletal disorder, costing EUR 240 billion per year, and around a third of all people will be affected at some point during their

([24]) The Lancet, Global Burden of Disease (GBD) Resource Centre. Available at: https://www.thelancet.com/gbd

lifetime. EULAR also reports that rheumatic and musculoskeletal disorders represent up to 60 % of all health issues at work. In general, osteoarthritis is the most common rheumatic and musculoskeletal disorder and its prevalence is increasing with an ageing and increasingly obese population (Hunter and Bierma-Zeinstra, 2019).

1.4.2 Impact and organisational and societal costs of MSDs

Having a chronic illness has implications for the sustainability of work, with individuals affected more likely to exit the labour market and become inactive. Over 40 % of workers who say they are limited by their condition also say that they will not be able to work up to the age of 60 (Eurofound, 2019).

Chronic conditions vary in severity and in the impact they have on individuals' work and private lives during different phases of the development of the condition. Among workers with a chronic disease, over half indicate that they are limited in their daily activities because of their condition (Eurofound, 2019).

Beyond the obvious life-quality degradation for the individual, the consequences of MSDs are also economic. Worker productivity loss results in a huge socioeconomic burden. Studies on the economic costs of different types of musculoskeletal conditions suggest that the costs are considerable (e.g. Verstappen et al., 2005; Boonen et al., 2010; Hunter et al., 2014). It is estimated that the total cost of lost productivity attributable to MSDs among people of working age in the EU could be as high as 2 % of gross domestic product (GDP) or EUR 240 billion (Bevan, 2015). MSDs are, according to this analysis, responsible for 40-50 % of the costs of all work-related health issues. These indirect costs often do not include costs associated with presenteeism (i.e. reduced productivity as a result of poor health while at work) (Jones et al., 2019).

Estimates of societal costs of MSDs, e.g. in relation to health care, lost productivity and injury or damage, suggest that the costs are considerable. For example:

- The total national annual cost of rheumatoid arthritis was estimated at EUR 45.3 billion in Europe (was EUR 13,000 per patient) over a decade ago (Lundkvist et al., 2008).
- The estimated total costs per annum in the United Kingdom for osteoarthritis and rheumatoid arthritis was GBP 14.8 billion; for rheumatoid arthritis alone was GBP 3.8-4.8 billion; and for back pain alone was GBP 10 billion (Arthritis Research UK, 2016).
- In Ireland, the direct cost of MSDs at work was estimated to be at least EUR 750 million per annum for all MSDs (Bevan et al., 2009a).
- The total economic burden of low back pain in Sweden including all episodes that started in 2011 was estimated at EUR 740 million (Olafsson et al., 2018).
- The indirect costs of musculoskeletal conditions (loss of productivity and wages) have been reported to be much greater than the direct costs, for example, corresponding to 2.4% and 1.3% of the gross national products of Canada and the USA, respectively (Woolf et al., 2003).

The costs attributed to absenteeism and presenteeism have been estimated to be very high (Verstappen, 2015). In some Member States, sick leave is paid for by the employer. An organisation also faces potential losses because valued employees may not easily be replaced once they leave the workforce. While there may be costs involved in implementing workplace changes, this may have longer term benefits in helping others in the company who might be at risk of developing MSDs in the future. This makes the true benefits from such an investment difficult to estimate. In addition, an ergonomic change that is essential for enabling someone with a condition to continue working could be beneficial for the whole workforce.

Early intervention, appropriate health care and support to return and remain in work could have a significant effect on the economic costs. As will be explored in this report, small economic investments in for instance ergonomic adjustments could be enough to keep a person with a chronic MSD at work.

1.4.3 Impact of job loss on the individual

When an experienced worker has to stop working and leave their job, the consequences affect both the worker and the organisation. In general, being in good-quality employment helps to protect mental and physical health; conversely, unemployment contributes to poor health and lower levels of household

income (Marmot et al., 2010). For patients with conditions such as rheumatoid arthritis, being in paid work is very important, and it increases self-esteem and financial independence (Verstappen, 2015). Loss of job and income as a result of ill health can negatively affect a person's social status and contribute to depression and social marginalisation (Marmot et al., 2010). Some of those who have left their job due to MSDs report that their situation has worsened and not just because of physical symptoms but also as a result of mental health issues such as depression and negative thoughts (Arthritis Research UK, 2016). Furthermore, the situation can also impact on the individual's family members.

Research studies have identified that people with chronic MSDs are less likely to be re-employed once they have left the workforce. In a Scottish exploratory statistical study among people affected with arthritis, 31 % had retired, 15 % were unemployed because of arthritis, 15 % had a part-time job and 23 % had a full-time job; the remainder were students (3 %), self-employed (6 %) or unemployed for other reasons (4 %), while 2 % had other working status (National Rheumatoid Arthritis Society (2014), Arthritis Care Scotland (2016). The reasons behind early retirement were not only MSD symptoms but also comorbidities that can occur with chronic MSDs, including depression.

1.5 Barriers to working with chronic MSDs

One fifth of workers with a chronic disease report that their workplace or work activity has been adapted to accommodate their health problem. Among those whose daily activities are somewhat or severely limited, 30 % have benefited from workplace accommodations. This leaves a high proportion of workers with a limiting health condition who are not being supported in this way.

Workers with low educational attainment and those in low-skilled occupations are more likely to have a chronic disease and experience limitations in their daily activities. At the same time, they are also less likely to benefit from workplace accommodations, which highlights the issue of fairness in the workplace.

Source: Eurofound, 2019

Chronic MSDs have a pervasive effect on individuals. The most common symptoms such as pain and stiffness can interfere with the ability to move or carry out work tasks. Commuting to and from the workplace can be a problem, especially in the early morning hours when mobility and stiffness may be more acute and sufferers can take a while to get moving. Tasks involving prolonged sitting or more physically demanding work activities can result in further pain and the pain can make repetitive movements difficult. Nevertheless, a person does not have to be 100 % fit to work. People with chronic MSDs often work around their problems both at home and in the workplace, and most people affected by chronic MSDs state that they would like to continue working. While chronic MSDs are clearly linked to a higher risk of early retirement (Dagenais et al., 2008), the reason for early retirement due to an MSD is often not the disorder itself.

In a survey of rheumatoid arthritis patients by the National Rheumatoid Arthritis Society (NRAS, 2017) of the United Kingdom, the five challenges most reported by those currently employed were:

1. demanding role
2. symptoms
3. no reasonable adjustments
4. commuting to work
5. lack of understanding from employer and/or colleagues.

For those who had given up work, the main barriers in their last job were perceived to be a lack of understanding from colleagues/employers and time off when having a flare-up or for medical appointments. Table 1 shows the barriers that participants identified to remaining at work in either their current job or their most recent job.

Table 1 Barriers to remaining in current or most recent job

Barriers to remaining in current or most recent job	Very serious (%)		Serious (%)		Neither serious nor non-serious (%)	
	Not working	Working	Not working	Working	Not working	Working
Getting to and from work	10.4	5.0	24.4	16.7	19.5	20.1
Lack of understanding from colleagues	15.9	6.5	20.2	19.2	23.1	19.1
Safety and health issues	10.7	4.1	22.8	13.8	20.5	25.2
Time off for medical appointments	10.7	6.9	21.8	15.8	19.5	16.0
Lack of family support/understanding	12.7	21.4	9.4	14.0	16.4	11.4
Time off when having a flare-up or unwell	25.4	14.0	31.6	23.1	10.4	15.8
Employer reluctant to make changes	17.9	6.0	18.8	12.0	19.5	19.8
Lack of support from employer or line manager	28.3	10.8	18.8	14.9	14.0	17.5

Source: NRAS, 2017;https://nras.org.uk/resource/work-matters-survey/ce supports the results of NRAS regarding the importance of understanding and support. A report by de Vries et al. (2014) suggests that early retirement or long absences from work are typically caused by a lack of support at work, insufficient support from healthcare providers and the individual's own health beliefs. Woods (2005) also found that poor social support from colleagues, employers and family members was positively related to early retirement. EU-OSHA (2017a) also found that successful return to work depends on the attitudes and behaviours of colleagues. Examples of challenges reported by rheumatoid arthritis patients are given in Box 4.

Other challenges include the affected person feeling that they have lost their ability to work; lack of knowledge in workplaces about chronic MSDs and how to support sufferers; the assumption that an individual has to be 100 % fit and healthy to work and lack of disclosure of symptoms/difficulties with work on the part of the worker; and poor communication between worker and employer.

Workers with an MSD also need to have a positive attitude to returning to or staying in work and collaborating with healthcare support and recommendations (physiotherapy, exercises, etc.) and the return-to-work process. The motivation of the worker is one of the factors that determines work ability (de Vries, 2012; EU-OSHA, 2016b; Etuknwa, 2019) and, more generally, motivation has been identified as a key factor contributing to remaining at work until an older age (Eurofound, 2017).

Box 4 Challenges reported by respondents to 2017 NRSA survey

'The amount of stress created by my employer doubting my disability, questioning my need for time off — even when provided with a letter from the doctor and refusing to accommodate my need to change my hours has made my life hellish. I feel more ill as a result and have been suffering with anxiety to the point of becoming unable to cope.'

'The job is physically challenging particularly because the employer refused to upgrade the equipment or organise the warehouse area to make it easier to pull roll cages. The employer really cannot be bothered to support me at all…'

'The key challenge is making the chain of command understand invisible illnesses and overcoming stigma of "you don't look ill …"'

Source: NRSA, 2017

A study by Bevan et al. (2009b) estimated that 42 % of people do not disclose chronic musculoskeletal symptoms to their employers, although in a study by Gignac and Cao (2009) over 76 % of participants disclosed their osteoarthritis symptoms and inflammatory arthritis symptoms to their employers. Non-

disclosure may result from fear of how the employer or colleagues will react, despite EU legislation on equality and non-discrimination, or may be because they have found ways to manage their symptoms for the time being. This results in invisible illnesses, where individuals continue to work as best they can, coping with pain, fatigue and/or mobility issues in unsatisfactory conditions without any support from their employers. This is known as presenteeism. However, when symptoms worsen, work can become increasingly challenging and difficult, affecting the worker's productivity. The situation increases their stress levels and worsens their condition, resulting in the opportunity being missed to intervene early to make reasonable adjustments and prevent loss of work.

In contrast, a supportive workplace can help substantially by encouraging the worker to discuss their MSD symptoms as soon as possible and to seek workplace solutions. Where individuals with arthritis perceived that they had managerial support (which was also found to reduce work stress) and co-worker support (which was associated with less workplace disruption and help with tasks), they were less likely to have to reduce working hours (Gignac and Cao, 2009). This study emphasises the importance of both co-worker support and management support.

1.6 Benefits of continued working for employer and worker

The benefits of enabling individuals with chronic MSDs to continue to work are apparent for both the employer and the worker. From the employer's perspective, enabling individuals to continue to work with reasonable adjustments maintains efficiency and productivity. Benefits to the employer include the prevention of illness, reduction in sickness absence rates, the prevention of early job loss and a reduction in health and disability costs (Bevan et al., 2009b). Rather than being less productive, a worker with a chronic condition is often highly motivated and tries to avoid missing work. Moreover, losing valuable expertise and knowledge from a business incurs costs. The support measures that an individual needs to enable them to continue to work are often simple and inexpensive. As will be discussed in later sections, some measures may benefit the whole workforce. Making a workplace more inclusive helps with the recruitment and retention of workers and it can also improve accessibility for clients. As previously mentioned, work-related MSDs are a significant cause of absence from work and loss of productivity for businesses. Preventing MSDs and accommodating workers with chronic conditions is good for business.

'I didn't want to lose Steve because he's important to us. He's the shop foreman and he's a skilled chap, so we bent over backwards to accommodate him' (NRAS, 2015, p. 13).

For the worker, continuing to work is associated with better physical health and psychological well-being compared with being out of work (Waddell and Burton, 2006; Marmot et al., 2010; Yeomans, 2011; EU-OSHA, 2016b). For most people, being employed is important and increases self-worth, identity and standing within the community, and social participation, in addition to allowing individuals to be financially independent (Black, 2008) — it is about being a valued employee. For a young person with a juvenile condition, it is also about getting that first job and opening up future employment prospects (Lunt et al., 2019). From the above-mentioned NRAS survey, according to those currently employed, the five advantages most reported were:

1. financial security
2. sense of purpose and achievement
3. reasonable adjustments
4. understanding employer
5. accessible and comfortable working environment.

Examples of advantages to staying in work reported by rheumatoid arthritis patients are given in Box 4.

Box 5 Advantages to staying in work

‘It pays the mortgage, I can afford to go on holiday, it sometimes keeps me going when I don’t feel like it…’

‘Gives me a sense of purpose and makes me get going in the morning. Keeps me cheerful.’

‘I retain a bit of independence and self-respect.’

‘Continue to be active, keeps mind active, social, financially better off.’

‘I like the job, the company, colleagues and getting out of the house.’

Source: NRAS (2017)

2 Legal requirements on risk prevention and accommodating workers with disabilities

There are two main employment legislation areas that are applicable: legislation on equal treatment at work and OSH legislation.

Having safe and healthy working conditions is a key component of retaining workers with chronic diseases and disabilities and making work sustainable across the life course. On the one hand, work should not make health conditions worse, while a broader objective is that it should promote health and well-being.

EU legislation, implemented through national legislation, make employers responsible for minimising risks to workers' safety and health as well as providing reasonable accommodations at work for workers with disabilities. Table 2 lists the directives most relevant to preventing MSDs and to working with a chronic condition.

2.1 Safety and health legislation

Employers have legal duties to provide safe workplaces that do not damage their workers' health. This includes ensuring that MSDs are not made worse by work. Safety and health legislation requires employers to carry out risk assessments and bring in suitable preventive measures based on risk assessments. The priorities are to eliminate risks at source, prioritise collective measures over individual measures, make work safer and healthier for all workers and adapt work to suit workers. For those workers already affected by a health problem, work should not exacerbate the problem and, in addition to the general requirements that apply to all risks and workers, employers are required to:

- protect particularly sensitive groups against the dangers that specifically affect them ([25]) (this complements employers' duties under employment equality legislation to provide workplace accommodations for individuals with disabilities);
- organise workplaces to take account of workers with a disability, if necessary; this provision applies in particular to doors, passageways, staircases, showers, washbasins, lavatories and workstations used or occupied directly by workers with a disability ([26]);
- make available work equipment that is suitable for the work and may be used by workers without impairment to their safety and health; ergonomic principles must be taken fully into account when applying minimum safety and health requirements ([27]).

Employers must also consult workers on safety and health and provide information and training. It is important for workers to be involved in risk assessment, as they usually know their own job best and may identify some feasible solutions to any risks identified.

2.2 Duty to accommodate workers with disabilities

Nearly 3 % of individuals with a chronic disease feel that they have been discriminated against on the grounds of disability. This rises to 4.5 % when looking specifically at those who have a limiting illness.

Under the EU directive on equal treatment at work ([28]), employers are required to provide:

- reasonable accommodation for people with disabilities, to enable them to have access to, participate in or advance in employment or undergo training;
- effective and practical measures to adapt the workplace to the disability, such as adapting

([25]) Council Directive 89/391/EEC of 12 June 1989 on the introduction of measures to encourage improvements in safety and health at work.

([26]) Council Directive 89/654/EEC of 30 November 1989 concerning the minimum safety and health requirements for the workplace.

([27]) Council Directive 89/655/EEC of 30 November 1989 concerning the minimum safety and health requirements for the use of work equipment by workers at work.

([28]) Council Directive 2000/78/EC of 27 November 2000 establishing a general framework for equal treatment in employment and occupation.

premises and equipment, patterns of working time, the distribution of tasks or the provision of training or integration resources.

The requirement to make adjustments depends on a Member State's definition of disability, not on an individual's health status (Eurofound, 2019). As will be discussed below, taking account of the needs of 'sensitive' workers, for example those with chronic conditions, is not limited to those defined in law as having a disability.

The EU directive on equal treatment does not specify what reasonable accommodations could include. However, workplace accommodations could include:

- changes to job duties and tasks
- equipment and workplace adaptation
- adapting working times and patterns
- providing training.

Box 6 Simple adjustments

In many cases, simple adjustments may be all that are required to support a worker. These include shortening the time spent on a task, task rotation with colleagues, having short breaks, altering working hours or an ergonomic device such as a certain type of mouse.

The directive has been implemented in different ways across EU Member States (Laštovková et al., 2015), and some countries have more detailed requirements and procedures than others and provide guidelines. Some Member States also provide financial or other support for making reasonable adjustments and have specific return-to-work programmes.

Table 2 The main EU directives relevant to preventing MSDs and working with chronic conditions

Directive	Name
Directive 89/391/EEC	OSH Framework Directive — covers measures to encourage improvements in the safety and health of workers. In addition to avoiding and combating risks to all workers, it requires protection of particularly sensitive groups against the dangers that specifically affect them
Directive 89/654/EEC	Workplace Requirements Directive — covers minimum requirements for the workplace. Disability is addressed at Annex I, paragraph 20: workplaces must be organised to take account of disabled workers. This applies in particular to the doors, passageways, staircases, showers, washbasins, lavatories and workstations used or occupied directly by handicapped persons
Directive 90/269/EEC	Manual Handling Directive — covers the identification and prevention of manual handling risks
Directive 90/270/EEC	Display Screen Equipment Directive — covers the minimum safety and health requirements for work with display screen equipment
Directive 89/655/EEC	Work Equipment Directive — covers the suitability of work equipment
Directive 89/656/EEC	Personal Protective Equipment Directive — covers the suitability of personal protective equipment
Directive 2002/44/EC	Vibration Directive — covers the identification and prevention of risks arising from vibrations

Directive	Name
Directive 2003/88/EC	Working Time Directive — covers the organisation of working time
Directive 2000/78/EC	Equal Treatment Directive — lays down a general framework for combating discrimination on the grounds of religion or belief, disability, age or sexual orientation as regards employment and occupation and covers accommodations at work for workers with a disability

More information on European directives can be found at https://osha.europa.eu/en/safety-and-health-legislation/european-directives

2.3 The link between OSH and disability legislation

The EU legislative approach to OSH follows a hierarchy, beginning with avoiding risks, then eliminating risks at source, prioritising collective measures over individual measures and adapting work to workers. This priority under EU OSH regulations to make work safer and healthier — and therefore easier — for all workers is important because measures that make work easier for all the workforce can enable an individual with reduced work capacity to remain in employment.

The requirement, if a risk assessment shows it to be necessary, for employers to put additional measures in place for particularly sensitive workers complements employers' duties under employment equality legislation to provide workplace accommodations for individuals with disabilities. It is important to note that protection for 'sensitive workers' under safety and health legislation is not restricted to workers who have a recognised disability.

Good workplaces will also see the benefits of going beyond risk prevention and will introduce measures to promote the health of their workers. Measures to support workers with health conditions, such as ergonomic furniture and equipment, can often make work easier and the workplace safer and more accessible for all workers and clients too. Designing workplaces to be as accessible as possible for all workers — known as universal design or inclusive design — will benefit everyone.

1. Make work safer and healthier for all workers
2. Make workplaces as inclusive as possible
3. Take additional measures for workers with reduced work ability, if needed

3 Managing chronic MSDs at work

Management of chronic MSDs requires a joined-up approach involving the individual, their healthcare team and their employer or manager, with a focus on keeping the worker at work.

3.1 Key elements of a comprehensive approach in the workplace

In the workplace, employers need to take a proactive approach to reduce MSD risks and to help workers with MSD-related problems. The key elements in a comprehensive approach are summarised below (adapted from BITC, 2017).

Prevention

- Optimise physical health.
- Avoid risks and hazards to all workers, based on risk assessment, recognising that some workers may be more susceptible to risk.
- Identify physical capability problems of workers early.

Early intervention

- Address musculoskeletal problems that compromise or are aggravated by work early.
- Make reasonable adjustments to work.

Rehabilitation and return to work

- Offer rehabilitation programmes.
- Ensure effective return-to-work planning.
- Promote self-management (by the worker of their problem).

In addition, the following two proactive elements also form part of a comprehensive approach.

Musculoskeletal health promotion

- Promote good MSD health in the workplace, e.g. through back care actions, actions to minimise prolonged sitting and actions to support workers to move more at work.

An inclusive workplace

- Plan workplace layout, equipment and work organisation to make the workplace as universally accessible and inclusive as possible, to avoid the need for individual accommodations.

To be effective in practice, communication and training are needed.

Communication, consultation, coordination and training

- Ensure open dialogue with line managers, occupational health, and safety and health services.
- Encourage early reporting of problems.
- Coordinate safety and health and health and human resources/equal opportunities policies.
- Promote a culture of worker consultation and good communication.
- Provide training for managers and workers.

For the individual, the workplace needs to provide:

- Understanding: a comprehensive approach to understanding an individual's needs through open conversations.
- Awareness: being aware of the risks and the problems in the workplace for workers with musculoskeletal problems.
- Support: help people with chronic conditions to manage their own health proactively.

Setting out policies and practices will help to ensure that a systematic and transparent approach that is clear to everyone is taken.

The factors involved in this comprehensive approach are discussed in the sections below. Box 7 summarises the musculoskeletal health goals for the working environment.

Box 7 Musculoskeletal health: goals for the working environment

The goal for employers is to provide a working environment that:

- takes **preventative action** to remove MSD risks for all workers;
- encourages **early intervention** for any musculoskeletal problem and makes reasonable adjustments to enable people to work despite their MSD;
- accommodates effective **rehabilitation and return-to-work** plans;
- **promotes** good musculoskeletal health;
- is as **inclusive** as possible for all workers.

3.2 Preventing work-related MSDs

It is fundamental that workplace risks are assessed and reduced for the whole workforce to ensure that the workplace is safe and designed to promote musculoskeletal health. Preventing and managing work-related MSDs will help keep workers safe and healthy throughout their working lives. Most work-related disorders are cumulative, arising from repeated exposure to risks over time. Reducing workers' exposure to MSD risks factors will pay off in the future and is particularly important for those who already have chronic musculoskeletal conditions, as they may be more susceptible to the risks. Making work easier and healthier for the entire workforce can mean that a worker with reduced work ability can continue working. In this way, it contributes to making the workplace more inclusive. In general, what is good for a person with pain, is good for a person without it.

Prevention should be based on risk assessment. This involves:

- identifying MSD risk factors;
- deciding who might be harmed and how;
- evaluating the level of risk and who is at risk;
- deciding whether existing precautions are sufficient or whether more can be done;
- setting priorities for action;
- monitoring and reviewing the measures.

In considering how to prevent MSD risks, there is a need to:

- look at all the tasks where an individual is exposed to hazards;
- ensure that all risks are assessed including force, repetition of movements, awkward and static postures, vibration, cold, stress and work organisation;
- avoid making assumptions about who is at risk and why.

When carrying out a risk assessment, it is important to look at the real way work is carried out. Deciding who is at risk also includes considering individual factors such as height or hand size, physical capability, age and any health conditions that a worker may have. There needs to be a match between workers' capabilities and job demands.

Preventive measures should address the whole musculoskeletal load on the body from tasks performed and include work-related stress factors, as there is evidence of a link between MSDs and stress. Usually, there is no single factor that causes work-related MSDs.

Prevention measures may be simple and cost effective. Measures may include changes to workstations, equipment or tools used, the way tasks are carried out or work is organised such as rotation of tasks, length of the working day or rest breaks, improvements to lighting or temperature, or measures to reduce exposure to vibration. The following questions should be considered:

- How can repetitive movements and the tasks causing them be eliminated or reduced?
- How can the amount of force or pressure required to carry out a task be reduced?
- How can loads be reduced?
- How can manual handling tasks be eliminated or made easier?
- How can tasks and the workplace be improved to avoid the need to work in awkward or static

postures? This includes reaching and holding and long periods of sitting and standing.

- Do working heights need to be changed or do tools need to be easier to use? Can adjustable ergonomic equipment be provided?
- How can highly intensive work periods be avoided and how can more rest breaks be introduced?
- How can tasks be made more varied and how can workers be given more control over how they work?
- What information and training do workers need, e.g. about avoiding risks or adjusting and using equipment?
- How can other factors be controlled, such as vibration, cold, excessive heat, poor lighting, high noise levels?
- How can psychosocial risk factors, such as demanding work, be controlled?
- What individual factors need to be taken into account, such as prior medical history, physical capacity or age?

Decisions on prevention measures should follow the prevention hierarchy set out in EU legislation, starting with avoiding risks where possible (see Box 8).

Box 8 Tackling MSDs: the EU legislative approach

To prevent MSDs:

- avoid MSD risks;
- evaluate the risks that cannot be avoided;
- tackle the risks at source;
- adapt work to the individual;
- adapt to changing technology;
- replace what is dangerous with what is safe or less dangerous;
- develop a coherent overall prevention policy, addressing the whole load on the body;
- give collective protective measures priority over individual protective measures;
- give appropriate instruction to workers.

Source: EU-OSHA, 2007b (based on Council Directive 89/391/EEC, Article 6.2)

Providing workstations that are adjustable or tools in different sizes reduces risks for all workers, not just certain individuals. This is part of 'universal design' or making workplaces more inclusive, which is covered later in this report. Risks should always be considered when setting up new workstations. It is cheaper than redesigning them or purchasing more suitable equipment at a later stage. Workstations and seating need to be ergonomic, and adjustability allows as many workers as possible to work safely and comfortably. Taking a design-for-all approach will ensure that the workplace is suitable for the majority of users. The various accommodations for workers with chronic conditions, covered in later sections of the report, can often prevent risks for all workers (Zolna et al. 2007).

Good ergonomics and avoiding awkward postures and prolonged sitting are particularly important in relation to not exacerbating symptoms for those with chronic MSDs. Workstations and seating need to be ergonomic and adjustability allows as many workers as possible to work safely and comfortably.

Static postures are postures, such as standing, sitting, reaching or holding, that have to be held by individuals for any length of time and where the joint does not move. Static postures are a known risk factor for MSDs and may exacerbate symptoms for those with chronic MSDs. While there may be concerns about there being too much movement in some work environments, static postures can contribute to fatigue and pain in the relevant muscle groups and avoiding them in general should be part of the prevention approach. Work therefore needs to be designed to allow for movement opportunities within it and to reduce the need to hold postures for any length of time. Workers carrying

out seated work need to be able to stand, move around or stretch before the onset of discomfort or fatigue. Avoiding prolonged sitting is discussed further in section 3.15 on workplace health promotion.

The Display Screen Equipment Directive applies to screen-based work, which requires a risk assessment. A suitable workstation and ergonomic seating, mouse or other input device and keyboard, and footrest, etc., should be provided so that workers can work comfortably. Workers need information and training, for example on how to set up their workstation correctly, adjust the height of the screen or the height and position of the monitor, and adjust their seating for comfort. Providing a headset avoids workers having to cradle the phone. There is considerable guidance available in this area (e.g. Back Care, 2009; Petreanu et al., 2020).

Manual handling work must be assessed for risks (covered by the Manual Handling Directive). Manual handling should be avoided where possible, e.g. by using mechanised handling equipment or lift trucks, or made easier, for example by altering how tasks are carried out, by providing lifting aids, which can be as simple as providing a trolley or a ramp, or by altering the load to make it lighter or easier to handle. Where manual handling cannot be avoided, organisational measures including rotating tasks and introducing rest breaks should be considered. Risk assessment should be ongoing and training and refresher training provided (EU-OSHA, 2007c).

Staff reported problems due to long periods of sitting in static positions and lifting and pulling loads in the tailoring division of a company. There were several problematic tasks involving prolonged sitting, and lifting and pulling loads. The company decided to introduce new ergonomic stations and many other interventions, such as the rotation of work and a canteen, new adjustable seats and adjustable machine pedals, replacing the heavy trolleys by installing a mechanical system of rolling, and training employees in correct lifting methods and the use of lifting devices. As a result, there was a decrease in MSDs, a decrease in absenteeism and an overall improvement in productivity.

Source: Arthritis Care Scotland, 2016

As mentioned, there is also increasing evidence linking occupational stress and psychosocial risks to MSDs (e.g. Hassard et al., 2015; EU-OSHA, 2007a, 2020). If a person is experiencing stress, it makes it harder for them to ignore pain from a chronic MSD and the condition will have more of an impact on their lives. Risk factors for work-related stress include excessive workload, lack of autonomy over the way the job is done and lack of support from managers or colleagues. Managing stress at work should be part of preventing MSDs at work. If necessary, additional measures should be taken for individuals with chronic MSDs, as they may be more susceptible.

The active support and involvement of workers at risk is important in identifying risks and deciding on improvements. They should be encouraged to report any MSD risk factors that they become aware of, and early reporting of any MSD symptoms associated with work is essential. Workers should also be provided with clear instructions, information and adequate training on any measures put in place to control the risks.

While expert support may be needed for more complex or serious problems, many solutions are straightforward and inexpensive. Any risk assessments or changes made need to be re-evaluated regularly to find out if they are still working.

Further information on preventing MSDs and stress at work is available in EU-OSHA's *Healthy workers, thriving companies — a practical guide to wellbeing at work* (2017b) and EU-OSHA (2007b,c,d, 2008a).

Reducing workers' exposure to MSD risk factors will pay off in the future and is particularly important for those who already have chronic musculoskeletal conditions, as they may be more susceptible to the risks.

3.3 Risk assessment and diversity

OSH risk assessments can be used to determine both collective measures and additional measures for individuals at additional risk. Making risk assessment diversity sensitive will help to ensure that the collective measures cover as many workers as possible, without the need for additional, individual measures. EU-OSHA (2003, 2009) suggests a number of success factors for taking account of diversity in general when assessing workplace safety and health risks and implementing prevention measures, including the following:

- view diversity in the workforce as an asset and be committed to ensuring everyone's safety and health;
- take account of disability and diversity in the design and planning stages, when changes are proposed or when new purchases are planned;
- eliminate risks to workers at increased risk and tackle hazards at source, as this will benefit all workers;
- identify workers who may be at greater risk from work tasks, and conduct a risk assessment for these categories of workers;
- avoid assumptions about who is at risk and how they work and consider everyone, taking account of individual differences and the real work done;
- adapt work to workers;
- ensure the consultation and participation of workers, including those with particular needs, and others concerned;
- coordinate safety and equalities actions;
- provide information and training on diversity for all — managers and workers, and safety and equality personnel;
- seek outside expertise when necessary (e.g. disability employment services, ergonomists and occupational health services).

3.4 Inclusive workplaces

Universal design is the design of buildings, products or environments to make them accessible to all people, to the greatest extent possible, regardless of age, size, disability or other factors. Examples include a ramp at an entrance or automatically opening doors that everyone uses but that are essential for a wheelchair user.

It is preferable that workplaces are designed and organised to be as inclusive as possible for all workers from the outset, including when buying equipment, planning tasks or altering buildings. Designing workplaces for a diverse workforce at the design and planning stages reduces the need to make retrospective changes at a later time or having to take additional steps to protect any vulnerable workers including those with disabilities or chronic disease (EU-OSHA, 2009). Often, specific adjustments, such as ergonomic equipment or flexible working hours, would benefit all workers. Making workplaces more inclusive helps employers to both recruit and retain workers, as it opens up the workplace to a larger pool of workers.

Making a workplace inclusive is not just about accessibility for those with disabilities or health problems. It recognises that we are all different — young and old, men and women, taller and shorter workers, and the many other factors that make employees a diverse group. It takes into account individuals' competencies, capabilities and characteristics, acknowledging that everyone is different, but that we should all have access to the same opportunities. Inclusive workplaces help to prevent work loss by decreasing obstacles and making work tasks easier, avoiding the stigmatisation of individual workers. They can also help young adults with conditions such as juvenile arthritis to enter employment for the first time.

Some measures to make a workplace more inclusive are covered by legal requirements (for example, as mentioned in section 2 on legislation employers have some duties under workplace safety and health regulations to make building entrances, passageways, bathrooms, etc., accessible).

Inclusivity goes beyond buildings and equipment, and includes:

- the physical accessibility of a workplace;
- an ergonomic workplace, with adjustable workstations, desks and seating;
- flexibility in working hours;
- awareness raising, education and training;
- extended employee benefits, such as physiotherapy and enhanced sick leave;
- policies and practices;
- accommodation processes;
- health promotion.

In the specific case of people with chronic MSDs, some measures to make a workplace more inclusive could include the following considerations:

- **Environmental** — effective lighting; adequate space for travel and manoeuvring; elimination of obstacles in path of travel; automated and accessible entrances.
- **Controls and tools** — accessible door handles, light switches, elevator controls, faucets; and tools with textured grips with a diameter that minimises grasping force.
- **Workstation and storage** — desks and workstations (ergonomic furniture); storage within the reach of all employees; and organisers and file folder storage on desktops.
- **Computers** — accessibility features in operating systems; training in the ergonomics of seating posture and positioning; and training in the ergonomic use of keyboard, mouse and monitor.
- **Workload** — reducing physical effort and minimising fatigue involved in manual tasks.
- **Work schedules** — offering working from home, part-time working and flexitime, and job sharing to all the workforce.

The above list was adapted from *Universal design in the workplace* (Northwest ADA Centre, 2017).

Many of these measures are the same as those that have been covered in the report's sections on individual accommodations (section 3.9) and specific adjustments for individuals (section 4). The difference is that they are introduced for the benefit of all workers. The feasibility of making changes depends on the size, location and type of work of an organisation, and its capacity to make changes. It may be difficult to implement all changes at once; however, workplaces can begin with one or two changes. Inclusive design is not just about the design of new buildings; it offers the opportunity to implement inclusive design when changes to workplaces are planned, when work is being reorganised or when new equipment is being purchased.

If individualised accommodations are still needed, universal design principles can provide the employer and worker with the principles and guidelines needed to develop and implement effective accommodations

Appendix 2 provides a list of inclusive practices that can help to make an organisation more accessible overall for people with arthritis. Appendix 3 includes a checklist for assessing how inclusive a work environment is. This checklist was developed as part of the EU-funded Chrodis Plus project on chronic diseases and employment and covers the work environment, accommodations, management, leadership and teamwork.

Box 9 A stepwise approach

An office worker with a back problem had her desk modified to convert it into a sit-stand desk as part of several measures that were taken to support her return to work. Following that, a portion of the safety and health budget was allocated each year to gradually convert more desks to sit-stand desks. The first priority was given to others with existing MSDs problem who thought they could benefit, until gradually all workstations were converted to sit-stand desks. Having an adjustable-height desk has benefited two particularly tall workers, who can now also work sitting with their desks at the correct height.

Box 10 One size doesn't fit all — desk design prevented adaptability

A taller than average office worker began suffering pain from a congenital hip problem in his 50s. He found that his pain was provoked by working at his desk, which was too low for him. A solution would have been to raise the desk height with, for example, cheap plastic furniture-height-raising blocks, or to have converted it into a sit-stand desk, so that it could be adjusted to the right height. Unfortunately, the expensive designer office desks were fixed together in blocks of three or four, making individual adjustment or adaptation of an individual desk impossible. Obtaining free-standing desks at the purchase stage would have avoided this problem.

3.5 Early identification and early intervention in the workplace

Early intervention means taking measures — such as providing professional support, ensuring rapid referral and diagnosis, and adjusting the work environment — as soon as symptoms appear. This significantly lowers the worker's chance of experiencing long-term absence from work. It also means taking measures as soon as possible to remedy the cause of work-related problems. Early intervention can reduce absenteeism and lead to real savings in national healthcare and social welfare systems.

The longer a worker is absent from work with an MSD, the less likely they are to return. In the workplace, if a worker carries on working with a chronic condition in unsuitable circumstances then the condition can get worse and more support measures can be needed. This applies equally to MSDs caused by and aggravated by work. Therefore, to retain people at work with chronic MSDs, early identification of any health problems and early intervention are important to ensure that timely support can be given. The benefits of early intervention include the prevention of illness, reduction in sickness absence rates, prevention of early job loss and the reduction of health and disability costs (Bevan et al., 2009b). The value of early intervention has long been recognised (e.g. Frank, et al., 1998).

Early intervention in the work environment means identifying tasks that may lead to MSDs and understanding who is at risk of MSDs. It means encouraging or having a system in place for workers to report problems at an early stage, so that timely interventions can be implemented to maintain work ability. Having a culture in the workplace that encourages early reporting will also help to prevent presenteeism, where individuals continue to work while hiding their health conditions and the problems they cause from their managers or others within an organisation. This can result in judgements being made about the quality of someone's work at a time when they need additional support.

Larger organisations may tackle work-related MSDs through a comprehensive approach that involves ergonomic measures to reduce risks and training on risk prevention, such as on manual handling, and on exercises that can be done at work or home for the whole workforce, combined with early access to physiotherapists who can diagnose and offer work-focused treatment. Recommendations from physiotherapists from the knowledge gained from the treatment and management of workers' symptoms can be passed on to a company, allowing the employer to make changes if relevant. Likewise, Individuals can pass on the recommendations to the employer from their specific case.

The management of chronic MSDs requires a joined-up approach involving the individual, their healthcare team and their employer or line manager, with a common focus on keeping the worker at work and safe at work. Healthcare and other support systems also need to provide early intervention for MSDs, and healthcare professionals need to discuss work at an early stage in treatment. Examples of requirements for early intervention in the welfare and healthcare systems are given in Chapter 6 and Table 4 and the role of health care is discussed further in section 3.7

If a worker is suffering from back or joint pain, their work tasks can be examined and ergonomic adjustments can be made (including improving work posture, reducing the speed of a process or introducing handling aids). If the intervention is implemented early, before the condition worsens, the changes needed will be simpler.

Bevan et al. (2009b) provided examples of early interventions in the workplace (see Table 3).

Table 3 Examples of early interventions in the workplace

Domain	What?	When?
Workplace (employers and employees)	Examples: ▪ Allowing early or partial return to work as part of workplace accommodations ▪ Undertaking return-to-work interview ▪ Screening in the workplace with standardised questionnaires looking for early signs or manifestations ▪ Internal healthcare awareness programmes ▪ Internal healthcare education system	For specified health conditions or disabilities After 5 days of absence

Source: Bevan et al., 2009b; © The Work Foundation

Early intervention in the workplace includes the following:

- having a system in place for workers to report problems as soon as they arise and encouraging its use;
- having a system in place for reporting musculoskeletal risk factors and encouraging its use;
- acting on what is reported;
- proactively looking for MSD hazards and screening for early signs of work-related MSDs.

Additional advice and information is provided in EU-OSHA (2007A, 2008B)

3.6 Principles of effective rehabilitation and return to work

Effective rehabilitation requires a joined-up approach that involves all the relevant actors including the healthcare provider, employer, line manager and worker, collaborating to support the worker.

Most workers who develop a chronic condition can continue working, provided that some adjustments are made to allow then to continue to work within their abilities. In some cases, the worker may need some time off work and effective rehabilitation and return-to-work planning will be needed to support them to get back to work.

In the workplace, the principles of rehabilitation include the following (IOSH, 2015; Fit for Work Ireland, undated, EU-OSHA, 2016a, 2018a):

- an up-to-date workplace policy on rehabilitation;
- managers should manage sickness absence with support from human resources when required;
- with the worker's agreement, a manager should stay in contact with the worker when they are away from work to help them stay motivated and in touch with the workplace and prepare for their return;
- rehabilitation should be implemented as early as possible for MSDs;
- rehabilitation management should be coordinated within the organisation and should involve, for example, manager, human resources and occupational health personnel and the worker;
- other specialists needed such as occupational health, ergonomics or occupational psychology

specialists should be identified;

- workplace adjustments should be made: this may take time, so can affect the timing of the return to work and risk assessment of workplace changes;
- the focus should be on capacity, that is, what workers can do, not incapacity, that is, what they cannot do;
- the manager and the worker should reach an agreement with regard to the arrangements; some arrangements may be transitional, such as a gradual return to work;
- arrangements should be included in a return-to-work plan; the plan should be based on assessment, expert medical opinion/specialist advice and tailored to the individual;
- the worker and workplace should be reviewed regularly to ensure that any changes made have been effective.

Some organisations facilitate access to rehabilitation for their employees (see Box 11).

As outlined in Chapter 2, employers have legal duties to provide reasonable accommodations at work for workers with disabilities. For safety and health reasons and good practice, accommodations should be made even if a worker does not come under the definition of a disabled worker. Some Member States have more detailed requirements and rehabilitation programmes that apply to workers and their employers.

Box 11 An Example of a successful rehabilitation programmes

An electrical company set up **rehabilitation programmes** for employees in their power distribution business with muscle, bone and joint disorders.

- The programme was implemented because 30% of sickness absence was due to musculoskeletal conditions. The programme included employee and supervisor training, physical rehabilitation, fast track physiotherapy and bespoke manual handling behaviour training.
- A 40-year-old lineworker suffered a cervical disc lesion resulting in weakness and muscle wasting in his left arm. He was absent from work for 4 months but after a 2-week programme that included graduated exercise, hydrotherapy and gym work, he had improved his muscle strength and was able to return to his normal duties.
- A long-standing back problem kept a 55-year-old mechanical fitter off work regularly. During the latest absence, he suffered constant pain, restricted mobility and depression. But, after a 3-week course of exercises, physiotherapy, hydrotherapy, gym work and pain management, the future looked much brighter, as he was able to return to work following a phased plan.

Source: Health and Safety Executive, 2004

'A capacity focused approach to vocational rehabilitation is the most effective approach in the majority of work-related MSD cases' (Source: Fit for Work Ireland, undated).

3.7 The role of health care

To effectively support continued working, the individual requires:

- early access to health care;
- access to a range of integrated healthcare services;
- continuing in work to be a goal of their treatment (work as a clinical outcome), with work-orientated treatment and advice;
- health care to be part of a multidisciplinary approach to continuing to work.

Early intervention for a musculoskeletal condition, both medically and in the workplace, is essential. The earlier a musculoskeletal problem is managed the less will be the impact on the person and their work. As well as medication and surgical interventions, a healthcare package can include physiotherapy and the support of occupational therapists. The goals of health care are the correct diagnosis and the effective treatment and management of chronic conditions and their symptoms to maintain the physical health and mobility of the patient. However, the healthcare team should also have supporting the patient to remain in work as a goal for their treatment and the individual should discuss staying in work or returning to work with them as part of their treatment. Unfortunately, too often work is not discussed during consultations, in either primary or secondary care.

As well as physical factors, people with chronic musculoskeletal conditions may have to deal with psychological factors related to their condition, which may challenge their ability to work. These include stress, anxiety or depression because of pain or other reasons; being worried about the future, including worries about work and how they will cope with it; and the motivation to cope with the challenges of their condition and remaining in work. Motivation to work contributes to an individual's work ability, as do physical factors. Where appropriate, health care should include support to manage pain (see section 3.8) and psychological therapies, such as work-orientated cognitive behavioural therapy, to help workers with depression or anxiety (see Box 12). Access to non-medical counselling regarding return to work may be more useful for some individuals and health care should be part of a multidisciplinary approach to continuing to work that also includes employment services.

Practising yoga or learning relaxation or mindfulness techniques may be recommended, along with exercises and activities such as Pilates. People usually interpret pain as a warning to avoid movement; however, keeping mobile is often the best approach to management. Graded-activity exercises with a focus on work can also help individuals return to work following an MSD (e.g. Schaafsma et al., 2013). However, if the MSD is work related, healthcare treatment and graded exercises will be ineffective in the long term if the work-related risk factors are not addressed as well.

Box 12 Work-focused cognitive behavioural therapy

Successful rehabilitation programmes use cognitive behavioural and problem-solving approaches that are activity based, integrated within the workplace and consider evidence-based clinical approaches. Cognitive behavioural therapy involves identifying, questioning and changing the thoughts, attitudes and beliefs that are behind the emotional and behavioural reactions that cause difficulty. Work-focused cognitive behavioural therapy uses the same techniques to focus on strategies and skills for work and workplace solutions, helping the person to address the specific difficulties that they face in returning to their job. Support for work-focused cognitive behavioural therapy as part of a multi-intervention approach comes from Schonstein et al. (2003), Crawford and Laiou (2005), EU-OSHA (2007a) and Cullen et al. (2018).

Box 13 Speaking with your doctor about work

Tips for speaking with a healthcare professional about work include the following:

- Tell them that you want to find ways to continue working and that you want how to achieve this to be part of the discussions about your condition and treatment.
- Tell them what work you do. Make a list of the things at work (or at home if these have an influence on your ability to work) that you have difficulty with. It could help to keep a diary to note down what difficulties you have and when they occur (e.g. when fatigue occurs, which tasks you find most tiring, what you find easier, what activities or movements worsen your symptoms). The results of this will be useful for having conversations with your employer too.
- Make a list of any possible solutions you have thought of.
- Discuss strategies you could use to manage your symptoms and pain at work.
- Medical professionals may know of things that have helped other patients that they can suggest to you to try.
- With your permission, the health professional treating you could talk directly with your employer.

Source: Cherney, 2020

Employers may be able to provide or support access to work-focused cognitive behavioural therapy to help workers return to work. Some workplaces, as part of workplace health promotion activities, encourage stretching or other exercise activities and provide mindfulness training. The workplace can also be supportive by ensuring that time is given during work for appointments with medical professionals. Patients are often advised to make a list of points that they wish to discuss with their healthcare professionals. Box 13 contains some tips to help plan that conversation. The Council for Work and Health (2019) provides advice for Doctors about discussing work with patients.

3.8 Self-management of health problems and symptoms

As has been mentioned, workers need to be able to manage their condition and a supportive workplace will help them to do this. Self-management involves the individual finding ways to move to protect painful joints, finding out which pain relief options work for them and other strategies to avoid pain, including at work. It also involves finding the right treatment and therapy options.

At work, the individual will need to find practical ways to protect their joints and avoid fatigue and manage their pain. Strategies may include pacing work, organising tasks to avoid fatigue, managing when to take breaks and exercise, and using relaxation (Versus Arthritis, undated). Box 14 provides advice on the self-management of pain.

Box 14 Self-management of pain

The pain associated with a chronic musculoskeletal condition can interfere with and limit work, home and leisure activities. But it is important for sufferers to remain as active as possible and there are various suggestions from arthritis organisations of practical things that individuals can do to self-manage their pain. As well as learning to manage their pain, individuals need an understanding workplace that is supportive of their pain management.

Movement, physical activities and exercise — e.g. walking around at work, use of a rest room in larger workplaces where they can stretch, exercise etc.

Joint protection — learning how best to move without unnecessary strain

Pacing — A key aspect in managing pain and fatigue that can be associated with it is finding the right balance between activity and rest. Workers need some self-control over how they do their work to help them to do this. It is also important that a worker does not 'overdo it' on a good day. Working for shorter periods of time then taking a very short break is better than trying to work for a longer period of time before taking a longer break. Discretion to switch between tasks that they find tiring and tasks they find easier or more enjoyable can be helpful. It can be helpful for an employee to chart their activities and highlight times when pain or fatigue caused difficulties in order to spot any patterns, which in turn may suggest solutions.

Relaxation techniques and mindfulness — learning and relaxation techniques and mindfulness and using them at work

Use of other pain-relief techniques at work: e.g. a heat pad or a hot-water bottle, an ice pack or a cold-water compress

Seeking advice — e.g., from an occupational therapist

Time off for treatments and therapies/courses — in order to get the right treatment and therapy when it is need.

Source: Versus Arthritis, undated

Self-management can also involve learning how to communicate with friends, family and colleagues to increase their understanding of the condition. It is important that others understand that there are both physical and psychosocial impacts of having a chronic MSD and that supporting individuals with such conditions can be really helpful (BITC, 2017). Summers et al. (2014) suggested that the individual, their employer and colleagues and their family all play important roles in self-management. Box 15 describes the types of support that these actors can provide.

Box 15 Supporting self-management

The individual

Appreciate that understanding how to manage your condition at work takes time and realise that others have a role to play in managing your condition. Equip yourself with information that will help you to manage your condition in the workplace and share it with others, taking a solution-focused approach.

Government

Increase awareness of and participation in access-to-work schemes and provide extra assistance for employees working in small organisations. Invest in more specialist nurse roles and ensure that work is considered a clinical outcome by healthcare professionals.

The employer

Understand your responsibilities as an employer to people with disabilities and long term health conditions. Aim to help employees with chronic MSDs to feel a valuable and mainstream part of your workforce. Educate your workforce about chronic conditions. Foster career progression options for individuals with MSDs.

The line manager

Work to build a good relationship with an employee living with an MSD. Be proactive: seek out information about MSDs, and be proactive in asking how the employee can be supported to do their job. Consider mental as well as physical health. Ensure that you take opportunities to praise an employee with an MSD when they have performed well.

Colleagues

Educate yourself about chronic conditions. Understand that people with MSDs may need to work in different ways from you.

Family and friends

Educate yourself about MSDs. Appreciate that the time following first symptom onset and diagnosis is likely to be the most challenging. Be aware that friends or family members with MSDs may need to make sacrifices in their home or social lives to continue working

Source: Adapted from Summers et al., 2014

Self-management can be taught and there are courses available for people with chronic MSDs that are delivered either face to face or online. Self-management can also be used to set goals for the individual to help them achieve changes in behaviour that may improve symptoms or quality of life. Evidence that pain education can contribute to successful rehabilitation comes from Louw et al. (2016) and Frederiksen et al. (2017). Many patient support organisations provide self-management advice; for example, BackCare provides tips on managing back conditions at work, at home, during leisure time and when a bout of back pain starts (BackCare, 2016). Box 16 provides some personal experiences of pain management programmes.5

Box 16 Experiences of pain management programmes

- One woman described how much she had learnt about combining the skills that she had learnt on the pain management programme (PMP) to deal with a flare-up of pain.
- During a PMP, advice had been given about getting back to work. One man who described his PMP as ‘miraculous’ had been helped to resume his career as a managing director by taking things in monitored stages.

Source: Health and Safety Executive, 2004.

3.9 Workplace accommodations

Workers with a limiting illness whose needs have been accommodated at work have better job quality than those with a limiting illness whose needs have not been accommodated. Workplace adaptations are associated with improved career prospects for those with a limiting illness. Such workers also report lower levels of work intensity, lower stress levels and a better work-life balance, all of which contribute to greater sustainability and performance at work (Eurofound, 2019).

Collective measures to prevent MSDs for the whole workforce and making workplaces more inclusive will reduce the need for individual adjustments and accommodations for individuals with chronic conditions. Some of the accommodations listed below, such as flexible working, can benefit the entire workforce, preventing them from being perceived by the rest of the workforce as a privilege available to only individuals with chronic conditions. Individual accommodations can then be kept to a minimum, such as reserving a parking space nearer the entrance to the workplace for an individual with poor mobility. When arrangements such as teleworking or flexible working are applied to the whole workforce, they should be disability friendly (Eurofound, 2020).

Individual measures should be tailored to the individual and a safety and health risk assessment can help with assessing needs. Tailoring the arrangements is very important, as an individual’s needs will

differ depending on health, personal and work factors. It is not possible to recommend one best design of ergonomic mouse, for example. Therefore, it is important to try out measures and take sufficient time to review them. Good communication with the individual is therefore essential to determining what support is needed and this needs to be ongoing. Conversations should cover the person's symptoms and how they vary, what tasks they find challenging, what support they need, etc. Sometimes a simple conversation with the worker may be sufficient to identify their needs, although it is important to seek expert advice when necessary. Often measures are simple and low cost, or involve no cost at all. More advice on having such conversations is given in section 3.11.

Collective measures to prevent MSDs for the whole workforce and making workplaces more inclusive will reduce the need for individual accommodations.

Workplace accommodations should be planned by focusing on an individual's work ability (an individual's capabilities, not their disabilities) (see section 3.9.7 for more information on work ability). Adjustments can include changing tasks, equipment and the workplace, hanging working patterns and providing support. An overview of types of accommodations is given in Box 17. Often a combination of several measures will be needed. Sufficient time should be allowed, for example because the individual may need to try out different measures to find what works best in practice. If the solution is not obvious, expert support can help the process go more smoothly and reduce the need for trial and error. Box 18 provides some examples of circumstances which have helped individuals to stay in work.

It is important to review measures and make any additional changes if the worker's condition changes: over 40 % of individuals with a limiting chronic disease who have had their workplace adapted believe that further adaptations will be required in the future, demonstrating that a one-off adaptation is often unlikely to be sufficient (Eurofound, 2019).

Box 17 Accommodations for all workers

- Control pace of work.
- Move to a different job within the organisation.

Equipment and workplace adaptation

- Provide ergonomically designed or special equipment (e.g. optimise workstation, provide suitable office chair, backrest and/or foot support).
- Provide equipment or technology that could make tasks easier (with training to use

Common types of accommodations and accommodations for some specific circumstances are outlined in more detail below in sections 3.9.1 to 3.9.11. Specific practical examples of accommodations to support individuals are given in Chapter 7. Not all measures and managerial steps to manage the accommodation process will be practical for small businesses, but there are many things that small businesses can do (Chapter 4 contains specific advice for small organisations)

The sorts of measures that could be taken and reasonable accommodations that could be made include the following.

Changes to job duties and tasks

- Change or modify the tasks that are part of the job.
- Allow flexibility in practices, roles and responsibilities.
- Allow variability in tasks.
- Swap certain tasks with colleagues.
- Ensure good ergonomics in all tasks, tailored to the needs of the individual where necessary.
- Reduce or avoid activities that are difficult or worsen symptoms — using stairs, prolonged standing or sitting, repetitive activities.

Box 18 Experiences of staying in work

‘Flexibility when I do my hours. If I am stiff in the morning I can work in the afternoon when I feel better.’

‘It is very physical and tiring, however I have requested that I do not work more than 2 days in a row, and this is working out ok.’

‘Local, close to home. Park right outside the building. All on one level, no stairs.’

‘Some equipment made available through Access to Work [scheme] after first being diagnosed — office chair, electric desk.’

‘Colleagues know and understand my limitations.’

‘They are fully aware of my current health and needs. They have acknowledged my requirements to reduce hours and flexible working.’

Source: NRAS (2017)

3.9.1 Workplace design and layout

In relation to chronic MSDs, there is a need to ensure that the workstation layout is designed to be as supportive as possible. This can be through simple changes such as different tools or having a sit-stand workstation to enable postural change or changing the layout to ensure that individuals can reach the tools required to do work tasks within the constraints of their capabilities. The positioning of equipment and tools also needs to be evaluated, as reach distances may be reduced. Workers with chronic disorders and mobility impairments should be placed near entrances or toilets, shortening the distance they have to walk. Grab handles or rails could be used across the walls to assist people with standing or walking. Moreover, perching stools could be placed strategically in the workspace, to help employees with chronic conditions to move around and stand when necessary. Small adjustments can make a big difference, such as providing comfortable meeting rooms. Box 19 provides some examples of work sataion changes and Box 20 summarises the pros and cons of sit-stand desks. See also section 3.2 regarding measures to prevent MSDs.

Box 19 Examples of accommodations: workstation changes

Height-adjustable electronic desk

Santander’s health and safety consultant was asked to support a financial trader with a serious, chronic back condition. By providing a height-adjustable electronic desk, the trader now has the option to adopt a traditional sedentary posture or work standing up when the need arises. This has helped the trader to remain in work, reduced the pain and discomfort they were experiencing and improved their overall well-being. There have also been positive outcomes for the business, through reduced absence, increased motivation and exceptional performance on the trading floor.

Source: Business in the Community, 2017

A low-budget option for raising the sitting height of a desk

Taller people may need higher desk. One worker noticed that he was getting MSD problems from working at a desk that was too low. A low-budget option used to raise his desk height was to buy cheap plastic furniture-height-raising blocks, of the type that can be used to raise the height of beds. They cost just a few euros and are readily available to purchase online.

Box 20 The pros and cons of sit-stand desks

Sit-stand desks can be helpful as part of a solution to help people stay in work; however, they are not a panacea.

- They allow a change of posture from sitting, or perching on a perching stool if provided, to standing.
- When sitting, desks can be adjusted to exactly the desired height — which is useful for particularly tall or short workers, for example.
- However, when changing between sitting and standing work, you are moving between two static postures. Static standing for too long can bring its own problems. Frequent breaks for moving and walking should be incorporated into sit-stand work routines.
- Standing for long periods may not be possible for some people, because of stiff joints, because it may trigger pain, for instance in those suffering from sciatica, for pregnant workers, etc.

N.B. It is possible to purchase just electric legs or a stand to convert an existing desk to a sit-stand desk. The prices have come down recently and at least one multinational home furnishing store sells a relatively inexpensive version, which could be an option for teleworkers or small businesses with limited budgets.

3.9.2 Equipment and tools

There are a number of different tools or pieces of equipment that can be used to enable workers with chronic MSDs to stay at work. Again, these tools or pieces of equipment do not need to be complex or expensive. Some tools such as voice commands and basic dictation software are already built into laptops and other systems.

For **computer work**, there are now a variety of different designs for the keyboard, mouse and computer available at low cost that can help people to work effectively. They can reduce pain and improve posture when working. No one solution fits all: individuals' pain symptoms vary and we all come in different shapes and sizes. The best solution also depends on the task being performed. It can be a matter of trying out options to see what works best, such as the most comfortable mouse. Some examples of equipment and tools that can be varied are given below.

- **The mouse:** there are many types of computer mouse now available, in different shapes and sizes. Some are adapted for the right or left hand, and some are vertical or semi-vertical, which can be more comfortable. Designs may include those with a trackball or rollerball, palm-type grip, claw-type grip or fingertip grip, a trackpad or a joystick. Some are designed for different hand sizes. A rollerbar mouse is placed between the user and the keyboard and is controlled by the thumb, finger tips or heel of the wrist. Mice designed for gaming can provide some interesting alternatives that can be cheaper.
- A **touchpad** or **trackpad** instead of a mouse can be the most comfortable solution for some users.
- **The keyboard:** ergonomic keyboards are designed to provide a more natural typing position. A low-profile keyboard is closer to the desk surface so the hands do not adopt high inclination while typing, allowing a more neutral position for the hands, since bending and twisting the wrist is not recommended, especially for those with carpal disorders. Moreover, ergonomically soft keyboards may also be helpful, particularly for individuals with arthritis, as typing with these soft-touch keyboards requires less effort. A mini keyboard, which does not have a number pad, or a compact keyboard, which is narrower than a standard keyboard, enables the mouse to be used closer to the body.
- **Programmable keyboards:** programming the keys' position on the keyboard can help people to modify the keys according their physiology.
- **Voice recognition systems (VRSs)**, such as talk-to-type dictation systems, can be useful. Bluetooth headsets can be more comfortable than those with cable, and built-in microphones are improving, which avoids the need to wear headphones.

- A keyguard helped a person who was constantly hitting the wrong keys because of hand stiffness, by preventing them from inadvertently pressing the wrong keys. It also provides a platform for the user to rest their hands on. (An alternative is to use the 'Filter Keys' setting in Windows 10, which allows users to set the computer to ignore brief or repeated key presses and set how long the computer waits before accepting a repeated key press.)
- A person managed to work with a rollerball-style mouse and also type with two fingers on a standard keyboard.

Source: https://abilitynet.org.uk/

- **Eye gaze technology:** this allows users to move the mouse on the screen using the eyes.
- **Wrist rests** are available for keyboards or can be incorporated into mouse mats or gel-filled wrist bracelets known as 'doughnuts'. Articulated wrist supports that clamp to the desk also exist.
- **Sit-stand desks** are one possible solution, as they permit working while standing or sitting and, when well designed, changing the position from sitting to standing is relatively easy. Some people find these very useful for decompressing the effort on the spine or neck, although there have been too few research studies among people with back pain to provide sufficient evidence of the benefits. See also Box 20.
- **Office seating** options may also be selected from a vast variety of designs. An ergonomic chair is tailored to particular needs; for example, the use of armrests on seats can help the individual to move from a seated posture, while a chair with no armrests can help an individual to deal better with neck issues. A general rule for a good chair is that it should be fully adjustable to enable the individual's particular needs to be met. There are now alternatives to the standard chair, such as saddle-style chairs. Recent chair designs allow the user to adopt a variety of postures while sitting, enabling them to move from side to side and back and forward. Another seating option, for use with a sit-stand desk, is height-adjustable seating, allowing the user to move from sitting to perching. Ad hoc seating measures, such as a lumbar support on the chair back to improve posture, can also be helpful.

Box 21 provides some examples of the use of simple equipment.

Box 21 Examples of simple equipment to support worker retention

- A technical editor with osteoarthritis was able to keep her job after being provided with a special touchpad mouse, a programmable keyboard and a chair with arms to help movement.

Source: Arthritis Research UK, 2016.

- A person reduced their wrist pain by switching to using a keyboard gel pad. They also tried using a mouse gel pad, but this made the pain worse. However, using a smaller laptop mouse in combination with the mouse mat allowed them to rest the base of the hand on the mouse mat.
- A mouse mat with a raised 'pillow' wrist rest helped a person significantly with their pain. Using a footrest and a lumbar support also helped them to improve their posture.
- A person switched to a keyboard with shortcuts and has since hardly used a mouse at all. Using a navigator keyboard with pre-programmed buttons for email, print, save, etc., has reduced the number of key strokes they need to make.
- After trying several different trackball mice, a worker in a law firm found that a touchpad was the most comfortable solution. The worker also started using dictation software.

Regarding **physically demanding work**, there is a large amount of guidance available on how to reduce physical loading on workers. For example, the use of lifting aids or ramps to help move loads or the redesign of work processes can reduce any risks identified as part of a manual handling risk

assessment. However, there may be much simpler things that can be done, such as using trollies or powered hand tools (also see section 3.9.7 on physically demanding work).

To **reduce standing** during site visits, something as simple as a fold-up chair could be used, for example. A folding stick seat is a more portable option, with some models folding away into a small carry pack. Items such as this can easily be found online.

Simple solutions can be found on websites such as that of AbilityNet ([29]) which provides factsheets on osteoarthritis and computing, rheumatoid arthritis and computing, keyboard and mouse alternatives and using voice recognition among other things.

3.9.3 Working time flexibility

Flexibility in the workplace means providing people with the opportunity to make choices influencing when, where, and for how long they engage in work-related tasks. Working time flexibility is one of the most common forms of workplace accommodation (Eurofound, 2019). For people with chronic MSDs, having a flexible starting time is important because often people feel stiff in the morning and it may take some time to get going. Flexible working covers a variety of different working arrangements; however, it is often incorrectly believed to be a flexible scheme exclusively for working mothers or a privilege rather than an arrangement. It may include changing working hours and taking a more flexible approach to start and finish times, working reduced hours or choosing to work different days to better suit the worker, whether this is on a permanent or fixed-term basis, or full-time or part-time. As described below, it can be helpful, for example, to avoid travelling to and from work in rush hour, to be able to work shorter hours on a 'bad day' and to be able to schedule medical appointments around work.

Teleworking may also be useful for allowing the individual to reduce commuting time.

Types of flexibility include the following:

- part-time work: working fewer hours than normal each day (or fewer days per week);
- job sharing: two people doing a job designed for one person and splitting the hours;
- flexitime, that is, flexible start and finish times: choosing when to work outside defined obligatory or core hours (this may include being able to build up hours and then take them off);
- annualised hours: working hours over a year (often working some of these hours in set shifts with the employee deciding when to work the other hours);
- compressed hours: working agreed hours over fewer days;
- staggered hours: differing starting, break and finishing times for employees in the same workplace;
- home working or teleworking working from home.

All of these arrangements may help a worker with a chronic disease, and having access to flexible working is an important component of retaining individuals with chronic MSDs in the workplace. Workers with a chronic disorder may benefit from altering their hours on a permanent or temporary basis, or from having some flexibility to adjust working arrangements on a daily basis.

Flexible working can be essential when there are periods of flare-ups, when new treatments are being implemented or to help individuals attend medical or physiotherapy appointments. In practice, an employee may find it helpful to work from home during periods of flare-ups or when beginning new treatments, as they will not know how their body will react.

Changing start and finish times of work to manage symptoms could lead to reducing commuting time or ensure that the individual gets a seat on public transport by travelling outside peak hours. For individuals with inflammation of the joints, it can be beneficial to avoid early morning travel and to give the worker time to stretch and take time to become more mobile.

Reducing working hours: a worker with a chronic MSD may benefit from reducing their hours on a permanent or temporary basis. For example, an employee returning to work after a period of absence

([29]) https://www.abilitynet.org.uk/workplace

could be offered a graduated return to work, where hours are built up over time during a return-to-work period.

Box 22 presents an approach suggested by the Arthritis Foundation on how to address the topic of a reduction in working hours.

Box 22 Planning a reduction in working hours

1. **Brainstorm.** What's your ideal position? On what areas are you willing to compromise? Would you work 40 hours a week if your employer allowed you to telecommute? Would you turn down a promotion that required occasional weekend work?
2. **Play the numbers game.** In most cases, less time on the job means lower pay and fewer benefits, such as health insurance, disability and employer-paid contributions. Thirty hours per week is usually the cut-off.
3. **Put it in writing.** Create a document that outlines every detail — from how many hours you would work to how you would communicate with clients and supervisors to how your new position would be evaluated.
4. **Keep it positive.** Provide reasons why the arrangement would be good for both you and your company.

Adapted from Arthritis Foundation undated

Flexitime allows the worker to fit their working hours around agreed core times when they must be in the workplace. Again, this can help workers to avoid busy commuting times and attend medical appointments arranged outside core work hours.

Where the type of work allows, **flexible working days**, where an individual can choose which days to work, are also a method of increasing productivity. An employee who has scheduled treatments (medical, physiotherapy, etc.) can work and finalise work tasks whenever possible instead of being obliged to leave their job for the period of their treatment. The worker can decide based on work plans, tasks, expectations and their own health. Linking this type of work with teleworking (see below) can enable the individual worker to control their work time and has the potential to increase job satisfaction (Fonner and Roloff, 2010).

Flexible working arrangements for the whole workforce: workplaces that have flexible working policies and arrangements available to all the workforce can minimise the need to make special arrangements for individual workers. Flexible arrangements can benefit all employees, including parents and carers, and can contribute to creating a satisfied, motivated and productive workforce. Employees who have been allowed to work flexibly tend to demonstrate greater commitment and a willingness to 'give back' to the organisation; however, it is important that arrangements are applied fairly (Clarke, 2017).

Legislation on flexible working: increasingly, countries are including flexible working in legislation. Finland has had legislation on flexible working since the mid-1990s. In Italy, there are legislative provisions that aim to improve the work-life balance; however, these have been designed for parents. In France, flexible working is quite mature and different working arrangements are already incorporated into legislation. In Germany, there is also legislation allowing employees to request a reduction in working time and flexible working has long been part of collective bargaining.

Although older workers with chronic diseases do not use programmes such as flexitime or teleworking any more than their healthy peers, when these programmes are available to them and are used before a health crisis occurs, they are less likely to experience job disruptions, work limitations and productivity losses than those who do not have access to these programmes.

Source: IWH, 2019b

3.9.4 Teleworking

Teleworking means working from a distance and in practice covers a number of different types of work including:

- home working
- mobile working
- remote working
- working from another base.

Some work tasks and jobs are computer based and, with reasonable network access, can be carried out at any location. The use of teleworking can help workers with chronic MSDs to manage their symptoms, treatment and work. For individuals with fluctuating health conditions, flare-ups can be more easily managed at home and fatigue can be reduced through not travelling. Workers have more freedom to take short breaks and get up and stretch and walk than in the office. Teleworking can be on an occasional or regular basis. If teleworking on a regular basis, it is important that workers do not find themselves isolated and that workplaces fully involve them.

The journey to work can also bring particular problems to individuals with chronic MSDs including the static postures required by driving. Enabling working from home or from a more local workplace can reduce this problem.

While the use of teleworking can help workplaces to retain individuals with chronic MSDs, working at home may bring other risks. It is essential that any equipment used at home or another local workplace is of the same standard as that used in the main work environment. Workers need to ensure that they have a regular work routine and control working hours, that they separate work from home life, e.g. by creating an office-like environment, and that they take regular breaks to move and walk. Furthermore, other risks such as working excessive hours have to be managed carefully.

Access to teleworking varies across the EU,with Denmark reporting that 37 % of the population have access to teleworking or perform mobile information and communications technology (ICT) work on a regular basis or occasionally. Italy has the lowest level, at 7 % (Clark, 2020). Following the Covid-19 pandemic, as a result of which many workplaces have found themselves having to use teleworking for the first time and have made the necessary organisational arrangements, more employers may see the benefits of offering teleworking in the future, not only on an individual basis but to the entire workforce.

Further information on teleworking is available in de Langen and Peereboom (2020a) and Munar (2020):

'The organisation's policies of flexitime and teleworking covering all staff have really helped me manage my fatigue and organise medical appointments to get my injections, so that I can continue working full-time.' Worker with psoriatic arthritis.

3.9.5 Breaks

Enabling workers to take breaks to change posture or cope with fatigue during more strenuous tasks is important, and does not involve buying any equipment. Whether a worker has a back problem or stiff joints from arthritis, regular short breaks to go for a walk or stretch are beneficial. For example, a break every 20 minutes from sitting is recommended for all workers. Ideally, workers should have enough control over how they work so that they can take breaks and rest, move or change posture when they need to. Breaks from sitting, standing, repetitive or physical work are important. They can prevent work-related MSDs from developing in healthy workers and enable workers with chronic conditions to remain in work.

3.9.6 Task rotation and job redeployment

Task rotation is when work tasks are rotated between different workers within the same organisation. An employee can undertake the tasks of another for a short period of time and then return to their original tasks. Task rotation systems, where work is planned so that workers switch between tasks, can bring benefits to an organisation by promoting flexibility, skill development and employee retention. In terms of MSDs in particular, it is advisable not to let the same employee do a manual repetitive task for prolonged periods of time, as this can aggravate the musculoskeletal system. However, it is important

to underline that rotating tasks with another employee for a certain period of time does not automatically eliminate the ergonomic risk.

Redeployment is where a worker is moved to a new position within the same organisation. While further training may be necessary, often the skills and experience of workers can be transferred to new work tasks. Many companies adopt a strategy of initially searching internally for employees to cover open positions, and promote the moving of their employees to new tasks and in this way avoid the expense of hiring someone completely new.

While this report focuses on how employers can support their existing workers, some individuals retrain and start a new job in another organisation or become self-employed. Being self-employed can provide the individual with more control over how they work (Arthritis Care, 2016), but the fact that many with chronic MSDs find that they need to change to self-employment suggests that many workplaces could be more supportive.

Box 23 provides some examples of job rotation and redeployment

Box 23 Examples of job rotation and redeployment

A Swedish trade union wanted to address MSDs among cleaners in the hotel sector. Before the adoption of good practices, they provided training to the cleaners, so that they could recognise the symptoms of MSDs. Among other suggestions for good practice, they advised that job tasks be rotated and warned that cleaners should have a maximum number of rooms to clean per day. Generally, cleaning duties, because they are heavy tasks for the musculoskeletal system, should be integrated with other tasks such as reception duties, preparing breakfast, planning of work schedules, etc.

Source: EU-OSHA (2000)

Redeployment may also be a consideration depending on health status. For example, Neil was a postman but suffered gout. Neil took opportunities as he gained seniority to change the type of work he did, moving from foot deliveries to driving deliveries, and finally to a specialist position that did not involve delivery but involved accounts, ordering, computer work and answering calls.

Sources: Health and Safety Executive, 2004; Arthritis Research UK, 2019b

Where it is required, a change of job tasks should also be considered. For example, a council caretaker had been off work for 14 months with lower back pain sciatica and subsequently circulatory problems in one leg. The solution for him was to find a clerical job with the housing office in the area where he was based.

Sources: HSE, 2004; Arthritis Research UK, 2019b

3.9.7 Physically demanding work

Physically demanding work presents more challenges for implementing accommodations for individuals with chronic MSDs than office-based work. Nevertheless, there is a large amount of guidance available on how to reduce physical loading on workers, including in relation to manual handling, exposure to vibration and repetitive work. Various measures can be considered, some of which have already been mentioned and are listed together with others below. These measures could be identified as part of a risk assessment. For example, a manual handling risk assessment may identify how the use of lifting aids or the redesign of work processes could be used to reduce the workload. Sufficient rest is very important if carrying out physical work.

Risk assessment can be used in combination with an assessment of an individual's work ability, on an individual basis, in relation to work demands. 'Work ability' looks at an individual's resources (e.g. physical capacity, attitudes, experience) in relation to work demands (e.g. work content, work environment, work culture) (Ilmarinen, 1999, 2001a, 2001b, 2005; EU-OSHA, 2016b). In other words, 'work ability' refers to the fit between job demands, individual competencies and support needs.

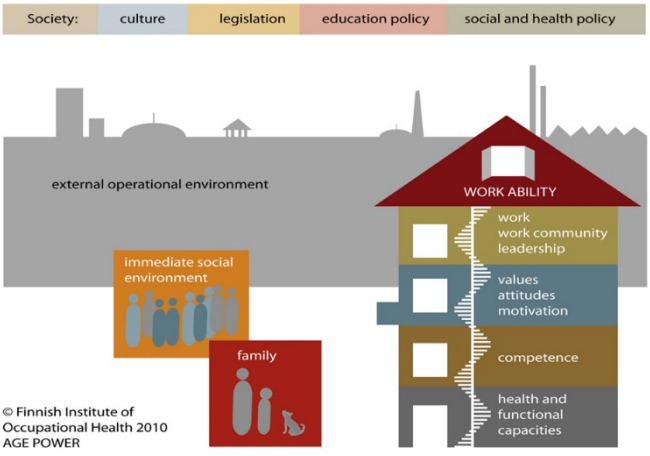
- **Measures relevant to physically demanding work**
  - Reduce the physical demands of work, including heavy lifting and carrying tasks, repetitive work, forceful movements, static postures, fast-paced work and exposure to vibration.
  - Provide handling equipment. Simple measures include the provision of a trolley.
  - Provide tools that are lighter and easier to use. Provide power tools.
  - Allow more individual control over how tasks are done.
  - Provide more breaks and allow flexibility over when breaks are taken
  - Rotate physically tiring or repetitive tasks with lighter work.
  - Swap heavy tasks with colleagues or provide the individual with support from colleagues for certain tasks.
  - Limit shift working.
  - Limit overtime working. Consider whether reducing hours or part-time working is a possibility.
  - Move workers to tasks requiring less physical work.
  - Provide training so that workers can move to other jobs.
  - Allow workers to use their skills and experience to mentor, train or supervise.
  - Provide measures to reduce the demands of physical work for all the workforce.

Box 24 provides an example of a simple adjustment and Box 25 provides more information about ergonomic and pneumatic tools.

A tool that can be used to assist in the assessment of work ability is the work ability index (WAI). In particular, this can assist with the early identification of risks to individual workers allowing measures to be taken to counteract them. The tool is not only limited to use with individuals engaged in physical work. It was developed by the Finnish Institute of Occupational Health (FIOH) in Finland in response to the ageing workforce and is used in other countries such as Austria and Germany. The European Network for Workplace Health Promotion (ENWHP) published a version in English (see Morschhäuser and Sochert, 2006). It is also available via the Chrodis Plus project ([30]). A model of the components of work ability is given in Figure 1.

Often, measures such as tools and equipment to make work lighter would benefit the whole workforce (EU-OSHA, 2016b).

Figure 1 Model of work ability



([30]) https://workbox.chrodis.eu/repository/pdf/WAI_Work-Ability-Index.pdf

Box 24 Simple adjustments for physical work

'We've successfully kept quite a few members of (maintenance) staff in work just by making some simple adjustments. It's about them following agreed processes, giving them things like cushions for kneeling on or a different ladder, or slightly changing duties.' Health and safety manager working for a housing association.

Source: IOSH, 2017

Box 25 Ergonomic and pneumatic tools

"Individuals with neck, back, shoulder, and upper extremity limitations may benefit from using ergonomic hand and power tools. Ergonomic hand tool designs allow users to maintain neutral postures while minimizing wrist deviations. Users also have an easier time keeping shoulders relaxed by using lightweight tools. Mechanical stressors such as misaligned finger grooves, sharp edges, and single finger triggers should be avoided. Vibration from the tool should be minimized, and heavier tools can be suspended from tool balancers when possible. Spring loaded returns on tools such as scissors and pliers are also a part of good ergonomic design."

Source: JAN, undated

Section 7.3 contains more examples of accommodations for manual and physical work.

3.9.8 Driving and helpful tools for drivers

Driving with MSDs may mean driving with pain (general pain or in specific body areas), joint stiffness, headaches or fatigue. Factors that can combine to cause problems include vibration, prolonged sitting and the type of posture or movements needed to operate pedals, as well as turning the wheel or generally manoeuvring the vehicle. Vibration from driving can affect the joints and Burström et al. (2015) found that people who are frequently exposed to whole-body vibrations, such as from occupational driving, have double the risk of experiencing low back pain and sciatica than people who are not.

Even if there is not an underlying MSD symptom, it is important to adjust the car seat accordingly and avoid prolonged sitting.

- **Advice for drivers**

While some of the tips below are suggested for back pain sufferers, many will also be relevant for individuals with other musculoskeletal problems:

- take regular breaks to reduce fatigue;
- adjust the car seat so that it is as supportive to the back as possible; it may be necessary to add an additional lumbar support roll or cushion if necessary to support your back (see also Box 26);
- avoid twisting and awkward positions and take special care when getting in and out of the vehicle; rotate your whole body, rather than twisting your back;
- take care when loading and unloading items from your vehicle; never lift heavy loads immediately when you stop driving, it is important to loosen up first; carry smaller loads close to your body and remember to bend your knees when lifting;
- learn how long you can drive before pain begins and adjust journey times where possible;
- plan and take regular breaks to move around and do back stretches, as well as stretching before starting a journey and during the journey when it is safe and possible to do so; get out of the vehicle to make phone calls, eat or do paper work;
- try to maintain a good driving posture — this is easier to do if you take regular breaks — and also try to move in your seat and change posture from time to time; you can do some exercises while driving (e.g. shoulder lifting);
- if possible, on long journeys try to share the driving with another person; being a passenger will allow you to move around more, alleviating the stress on your back (although this may not

be practical in work circumstances);

- use driving gloves to provide a better grip on the steering wheel, lessening the force of the hold required for vehicle control and to prevent your hands from slipping;
- if possible, take the train for long journeys, instead of driving, as this will allow you to get up and move around regularly;
- talk to your employer about your back pain and how they can help you, e.g. by making changes to the vehicle or reducing the number of hours spent driving.

Sources: BackCare, 2015a and 2015b; Schmitz-Felten, 2020

Box 26 Advice for adjusting car seat and driving in comfort

- Move your seat forward. It helps to get as close as you can to the steering without becoming uncomfortable. Being close prevents you from slouching and also prevents you from straining to reach the pedals. Your knees should not be higher than your hips.
- Angle your seat. The back of your seat should be adjusted to an angle of about 100 to 110 degrees to allow you to sit properly.
- Go cruising. If your car has cruise control, use it — if it's safe to do so. This allows you to put both feet on the floor for short periods and distribute your weight more evenly.
- Stretch it out. Stop as often as you can, preferably every half hour or so, to get out of the car and stretch.
- Adjust your steering wheel grip. Researchers have looked into the best way to position yourself at the steering wheel if you have back pain. It used to be that new drivers were taught to hold their steering wheel at the 10 o'clock and 2 o'clock positions. But, with the advent of airbags, research has found that your hands should be at 9 o'clock and 3 o'clock. This allows you to rest your elbows on the armrests, which can help to ease pain, especially in the upper back.

Source: Vroomen-Durning, 2016.

Risk assessment for driving for work

If employees drive for work, a workplace risk assessment should be carried out and measures introduced to protect all workers, with additional measures for those who are vulnerable, e.g. because of a health problem.

If a worker who has to drive for work is having problems because of an MSD, the employer should discuss this with them, carry out an individual assessment and explore whether any changes could be made to the vehicle they use or if they can drive for fewer hours. Journeys for work can be planned with the individual to allow them to incorporate advice on taking regular breaks and stretching (see the section 'Advice for drivers' above).

Employers should take into account design and ergonomic features when purchasing company vehicles (adjustable seating, ease of getting in and out), to improve the accessibility of work in general, and the features of larger vehicles that make loading and unloading easier.

Features of vehicles that can assist driving

There are various features of new vehicles or modifications to existing vehicles that may assist individual drivers:

- a fully adjustable seat and supportive features inside the car (e.g. neck support, back support);
- panoramic mirrors;
- seat belt aids;
- keyless entry systems and push button starters — useful if you have problems using keys;

- power-assisted steering — very helpful in easing stress on hands, arms and shoulders;
- adjustable steering columns — can be moved forward to allow more room to get in and out of the vehicle;
- steering wheel knobs;
- pedal modifications, left foot accelerators and electric hand brakes — often helpful, as are extended gearshift levers;
- vinyl seat covers or specially adapted swivelling stool on the seat — eliminate friction in entering or exiting from the vehicle;
- swivelling seats;
- wheelchair hoists.

3.9.9 Travelling for work and working off site

Some companies assist individuals with chronic conditions by covering transport costs and using taxis. However, for those who wish to continue driving, cars can be easily modified. It is not just the vehicle that should be considered; parking requirements at work (close to the building) also need to be addressed.

Driving, covered in the previous section, is not the only means of transport that a worker may need to use. If workers have to work off site or attend external meetings, etc., they will need to manage any problems related to their condition. Again, there may be simple supportive measures that could be used. These could include:

- using a blow-up lumbar support and/or cushion on seats on public transport, in meetings, etc.;
- having an aisle seat if flying to enable getting up, walking and stretching when necessary during the flight, and using 'speedy boarding'; the same applies to trains and buses;
- packing as lightly as possible, e.g. considering whether a smart phone could be used to avoid taking a laptop;
- using a folding stick seat when queuing, or at events or in situations where it is not possible to sit;
- allowing the use of taxis instead of public transport;
- using accessible hotels, hotels with a fitness room or hotels close to the venue to limit travel and to make it possible/easier to return to the hotel to rest;
- using teleconferences instead of face-to-face meetings to avoid travel, or pre-recording presentations for use at meetings (this can be done using PowerPoint or other free open source software options).

3.9.10 Accommodations for severe mobility problems

For individuals who are reliant on mobility aids, including wheelchairs or crutches, there are legal requirements in relation to accessibility in the workplace. These include requirements to ensure that entrances, corridors, workstations and toilets are accessible by all individuals including those using assistive devices.

How to apply the principles of inclusive work to make a workplace accessible is covered in section 3.4., which explains how considerations at the design stage can help. However, even if many buildings cannot be made fully accessible there are still simple changes that can be made for people with severe mobility problems in the shorter term. These can include the following:

- having parking spaces close to the building entrance for those driving;
- having workstations that can be reached easily, e.g. by moving them to the ground floor, or making it easier to access current working areas;
- having toilet facilities that are adapted for those with disabilities and wheelchair users, e.g. by installing grab rails;
- ensuring easy access to toilet facilities from the work area;
- having a plan for exiting the building in case of emergency that covers those with special needs.

Advice should be obtained on the implementation of measures, as, for example, a misplaced grab rail in a toilet could cause more harm than good.

Again, there may be simple solutions to enable an individual with severe mobility problems to stay at work, for example allowing a teacher with rheumatoid arthritis to work in a ground floor classroom rather than a first floor classroom. Good communication during the problem solving process is crucial, including to avoid creating new problems while solving an existing problem.

Regulations setting minimum safety and health standards for workplaces include requirements related to making workplaces accessible for workers with disabilities ([31]).

3.9.11 Osteoporosis and work

It is not possible to cover specific accommodations for all types of chronic MSDs in this report. Accommodations for osteoporosis are given below as a specific example.

Osteoporosis is where the structure within bones becomes thinner causing them to break or fracture more easily. These broken bones can cause pain and mobility problems. This in turn can cause fatigue. While osteoporosis mainly affects people in later life, there are a considerable number of people of working age with the condition. Those of working age are most likely to be affected by spine and wrist fractures. A diagnosis of osteoporosis does not necessarily affect someone's ability to do their job. However, workers with osteoporosis who have a high fracture risk or pain or mobility problems as a result of fractures may need accommodations in the workplace.

Osteoporosis organisations and public health organisations provide the sort of advice given below, e.g. the Royal Osteoporosis Society (2020) and Fit for Work (2020). See also Health Policy Partnership (2020).

High-risk activities for workers with osteoporosis include:

- activities involving bending and awkward or heavy lifting, which increase the likelihood of spinal fractures; examples of jobs that may involve such activities include carers, agricultural and horticultural workers, and supermarket and postal workers, who may lift boxes and packages.
- activities with a risk of falling;
- activities that could increase pain, such as heavy physical work or work that involves sitting or standing for long periods.

Workers who carry out any high-risk activities or suffer from pain or experience difficulties in carrying out tasks should speak to their employers and seek advice from their doctors or from public health or disability organisations that offer advice on osteoporosis. Employers should also seek advice, for example from non-governmental disability organisations or employers' associations. It is often possible for workers with osteoporosis to continue in the same role with a few reasonable and simple adjustments.

As with other painful conditions or conditions affecting mobility, assessments may suggest that:

- in terms of visual display unit work, measures such as more ergonomic seating, changes in workstation layout or other equipment, and adjustable desk height may help those with spinal compression fractures who have back pain;
- varying jobs throughout the day, so as not to be working in one position for long periods of time, and the employee setting the pace of work may help;
- changing posture by alternating sitting and standing or walking would be beneficial;
- there is a need for rails, ramps or parking spaces closer to the workplace entrance;
- flexible working, part-time working, teleworking or not having to do shift work could help.

To reduce physical workloads and fall risks:

- adaptations to tasks could include eliminating the need for workers to carry out manual handling tasks;

([31]) https://osha.europa.eu/en/legislation/directives/2

- measures could be implemented that reduce the need for manual handling in general, for instance by providing lifting equipment;
- loads could be adjusted so that they are smaller, lighter and more manageable;
- the need for repetitive bending, twisting and turning could be decreased;
- rest periods could be allowed for to ensure that tiredness does not lead to unsafe lifting;
- precautions, such as no work at heights, could be taken to prevent falls;
- precautions such as repairing damaged flooring or ensuring that items are not left on the floor could be taken to prevent slips, trips and falls.

As has been seen for other musculoskeletal conditions, many of these measures could benefit the whole workforce. Measures to make the workplace more inclusive and work easier prevent the need to make adaptations for only certain individuals. Slips and trips are the most common cause of workplace injuries. The most common causes of trips are obstructions in walkways and uneven ground. Preventing these accidents among all workers is often simple and cost effective and a matter of good 'housekeeping' and maintenance. Inadequate physical activity is a contributory factor to osteoporosis, so any workplace actions to tackle prolonged sedentary work will be beneficial.

In addition, employers who offer preventive health screening to their employees could include a bone density test in the screening package. Awareness raising about osteoporosis could also be included in workplace well-being activities.

3.10 Gender, MSD management and working with a chronic condition

Taking account of the differences in the types of work that men and women typically do and the circumstances in which they typically work is important for both the prevention of work-related MSDs and for supporting workers with health problems to remain in work. In general, there is a higher prevalence of men in certain professions and women in others; for example, more women work in caring professions and more men work in construction. Moreover, women are more likely to undertake highly repetitive and low-grade work, which can mean that they have less control over how they work and when they can take breaks, potentially affecting their ability to manage chronic conditions when working. Even when women and men carry out exactly the same work tasks, the physical load can differ because equipment and workplaces are often designed for the average man (EU-OSHA 2003, 2013, 2016c; Swedish Work Environment Authority, undated, 2020).

Women with a chronic health condition, especially in low-grade jobs, may be at risk of double discrimination because of their gender and because of their health condition, and may be considered more dispensable. Men are more likely to be employed in heavy physical work than women, where it can be assumed that no changes to allow them to continue working are possible. However, often ergonomic changes can make work easier and swapping tasks with colleagues is possible (EU-OSHA, 2016a). In addition, men in skilled manual work may have more opportunities to change their role, for example to a mentoring role, if they can no longer continue in their present role than women in low-status jobs whose skills are unrecognised, such as cleaners.

Older women may face discrimination because of their age and gender (EU-OSHA, 2016c), and this may make them less likely to raise health problems with their employer. The tendency for women to have more caring responsibilities than men outside work is another difference that has an impact on work, including on working with a chronic condition. For example, outside work, women may find it harder than men to attend rehabilitation appointments if they also have childcare responsibilities (EU-OSHA, 2013).

Work-related MSDs frequently develop from cumulative exposure to risk factors over time. An example comes from a printing shop, where women were trapped in 'finishing' roles with unergonomic working conditions and experienced a high rate of MSDs, while men were more quickly promoted from this type of work to other jobs. Together with ergonomic improvements, recommendations were made to recognise the women's skills and provide training so that they too could progress in their careers (EU-OSHA, 2014).

Some issues to consider regarding gender, MSD management and working with a chronic condition are given in Box 27.

Box 27 Addressing gender issues in MSD management and working with a chronic condition

- Do not overlook the physical and repetitive work of jobs done by women when carrying out risk assessments: avoid making prior assumptions about what the risks are and who is at risk, and then avoid making initial assumptions about what is 'trivial'.
- Reduce the monotony of repetitive jobs by rotating work tasks among individuals of **both** sexes, so that all workers have variation in their work.
- Design workstations so that they are ergonomic and easily adjusted to suit both women and men.
- Supply tools and personal protective equipment (PPE) suitable for both men and women.
- Consider the career paths and skills of women in low-grade jobs.
- Ask both women and men if they experience stress and take account of men and women's differing work circumstances in designing measures to address this.
- Allow some flexibility to attend medical appointments, etc., during working hours may be particularly helpful for women with childcare responsibilities.
- Flexible working will help any workers who are providing assistance to a spouse or partner who has a chronic disease. This assistance may in turn mean that both the partner and the worker can continue to work.
- Involve workers of both sexes to the same extent in efforts to improve the work environment. Involve both sexes in the development of return-to-work policies.

Sources: EU-OSHA, 2003; Swedish Work Environment Authority, undated

3.11 Communication and conversations

Workplaces where individuals feel that they can voice their concerns and they experience high levels of support from managers and colleagues are more likely to make supportive adaptations (Eurofound, 2019).

Having open communication is key both for the prevention of MSDs and to support someone to get back to work or remain in work following the diagnosis of an MSD. Most workers are able to continue to work provided that some allowances are made for their health condition. To do this, there needs to be good communication, and line managers and co-workers need to understand and pre-empt difficulties, as a worker may not always want to say that they cannot do something. Workers also need time to find ways around their problems at work, so enabling and encouraging communication and problem solving are essential. Having open communication routes also helps to prevent workers from feeling isolated and alone, and will encourage them to talk about any difficulties they are having, if they are reluctant to do so.

Effective communication and the establishment of trust to provide ongoing support is particularly important for episodic conditions that do not follow a standard medical trajectory of injury, that is, a single, time-limited period of sick leave set by the doctor followed by recuperation and return to work (IWH, 2020).

While formal risk assessments will be required for particular work tasks where there is exposure to a hazard, sometimes informal conversations can lead to solutions too (BITC, 2017).

Open communication can be achieved only if management and colleagues are trusted, information is acted upon and issues are not ignored or dealt with in a negative way. Otherwise, workers will not feel able to report their symptoms, which will result in presenteeism, where they hide their symptoms and do not get the support they need. Transparency is also important, so if decisions are made, these must be communicated and the reasons for the decisions given to the workforce.

In enabling open communication, it is important to have policies in place to manage return to work or fluctuating health issues. However, policies are not the only aspect of this and it is important that there

is awareness among managers and the workforce about chronic MSDs and also about how to have conversations about them.

Workers are under no obligation to disclose health conditions to their employers. Even if a worker does not want to disclose a diagnosis, the employer still needs to know what work limitations a condition will bring. To provide support, the employer also needs to how work affects the individual's health condition, what their capabilities are and what will help them recover or prevent them from getting worse.

What is often seen as difficult is the starting of a conversation about musculoskeletal health. Boxes 28 and 29 provide tips for workers and employers on having a conversation about an individual's health condition and the implications for work.

Communication is essential and the Business in the Community (BITC) toolkit (2017) on musculoskeletal health emphasises the importance of workers being aware of and understanding the communication process by addressing the following:

- who workers should talk to;
- what happens when a risk or specific MSD issue is reported;
- what opportunities there are to give feedback on any action that was taken;
- the need for line managers and those in positions of responsibility to:
    - be approachable;
    - be clear about the support that can be offered (e.g. task rotation, reduced hours and support from colleagues);
    - be clear about any actions that were taken and why they were justified;
    - stay in touch with employees on sick leave; even providing updates on workplace news can make an employee feel included and valued.

The above should be supported by training for managers (also see section 3.12 on training). The BITC toolkit provides additional advice on how to create an open culture for dealing with musculoskeletal problems and promoting well-being at work (BITC, 2017).

Work with others. If you are a small business, share ideas and activities with others through trade organisations (BITC, 2017).

The use of toolbox talks can be useful in starting discussions in the workplace around OSH and musculoskeletal health (a toolbox talk is an informal group discussion that focuses on a particular safety issue). The EU-OSHA resource *Conversation starters for workplace discussions about musculoskeletal disorders* (EU-OSHA, 2019) and 'Napo in the workplace' (Napo, undated) provide activities for workplace discussions on MSDs.

Box 28 Let's talk... for workers — discussing work limitations with your employer

If you want to talk, here are a few tips for making the conversation easier:

Before you chat: talk with your doctor or another health professional about working with your health condition. Think about the work schedule you may need and the accommodations you should ask for. Can you get suggestions and advice from others who are working with your condition or from the website of an arthritis organisation? A letter from your doctor, or another health professional who is treating you, may help to explain your condition and the impact it may have on you. The letter could also include information about the support you may need. You could also take along any relevant information you have found, for example from a patient support organisation, (e.g. an arthritis association), to help you explain your situation and needs.

Decide what you will say and request: plan beforehand what you want to say and cover, such as:

- the condition that you have (if you chose to disclose it)
- the symptoms you experience
- how your condition can make you feel on a bad day
- the effects of any medication you are taking
- what tasks you may need some help with
- how your symptoms can vary on a daily basis
- why you feel that with some support you'll be able to do your job very well
- the adjustments or support that could be put in place to help you (think about you, your manager and your organisation).

Source: EU-OSHA, 2019

Box 29 Communication tips for managers

If you want to talk, here are a few tips for making the conversation easier:

Before you chat: talk with your doctor or another health professional about working with your health condition. Think about the work schedule you may need and the accommodations you should ask for. Can you get suggestions and advice from others who are working with your condition or from the website of an arthritis organisation? A letter from your doctor, or another health professional who is treating you, may help to explain your condition and the impact it may have on you. The letter could also include information about the support you may need. You could also take along any relevant information you have found, for example from a patient support organisation, (e.g. an arthritis association), to help you explain your situation and needs.

Decide what you will say and request: plan beforehand what you want to say and cover, such as:

- the condition that you have (if you chose to disclose it)
- the symptoms you experience
- how your condition can make you feel on a bad day
- the effects of any medication you are taking
- what tasks you may need some help with
- how your symptoms can vary on a daily basis
- why you feel that with some support you'll be able to do your job very well

Source: EU-OSHA, 2019 (this includes guidance on how to start particular conversations).

Training

Training should cover the following areas:

- training for workers about MSDs, their risks and how to work safely;
- training for managers in MSD risk prevention and musculoskeletal health;
- training for managers about chronic conditions and supporting someone with a chronic condition, having conversations and any relevant policies, such as return-to-work policies;
- diversity training.

Employers have a duty to provide information and **train workers** about risks at work and how to report them. It is essential in the ongoing management of chronic MSDs and for the prevention of future MSDs that individuals are made aware of the risks of exposure to poor ergonomics and are given training in safe systems of work and how to adjust relevant equipment. This includes how to adjust an ergonomic chair and set up workstations, how to carry out safe lifting and handling of loads, and how to identify hazards and report them. Workers also need to be trained and encouraged to report any symptoms as early as possible.

Managers need training on MSD risk factors, risk assessment and prevention and their role in the process. Managers in particular also need to be aware of the relevant policies and procedures that are in place to enable individuals with chronic MSDs or other chronic conditions to continue to work.

The knowledge that managers need includes knowledge of:

- the signs and symptoms of chronic MSDs, their fluctuating nature, etc.;
- MSD hazards and MSD risk prevention;
- how to promote musculoskeletal health at work;
- how to report MSDs/MSD hazards;
- the importance of communication and the early reporting of concerns;
- how to speak to workers about health problems and how to act with empathy;
- factors that can exacerbate chronic MSDs (work factors, the journey to work, etc.);
- work techniques and processes;
- team-based solutions/participatory problem solving;
- how to improve communication/support from supervisors;
- potential simple adjustments;
- how to record changes made and evaluate impact and the importance of doing so;
- where to find additional help (expertise or web-based support).

In the context of chronic MSDs, there is a need to understand that some symptoms can fluctuate, meaning that there will be good days and bad days. It can be difficult for managers and colleagues to understand why a person can do their work without any problems one day and experience problems the next day. Many issues, such as the fluctuating nature of conditions, are not specific to chronic MSDs. A more general approach can therefore be taken to training and support for workers with chronic conditions in general.

Injured workers whose supervisors react with sympathy or concern return to work more quickly than those whose supervisors react with scepticism or blame. Even in workplaces with strong social support, a supervisor's reaction makes a difference.

Source: IWH, 2019b

Beyond this, it is important to provide information and training for all managers and workers on **diversity and equality** for everyone. In addition, linking OSH issues with equality plans and non-discrimination policies is vital. This includes providing training and information on diversity issues within safety and health to those involved in risk assessment, managers, supervisors and safety representatives. Furthermore, adequate safety and health training, including refresher training, needs to be provided to each worker, tailoring information to a specific worker's needs where required.

While the training needs above have been described in relation to chronic MSDs, they are relevant to other risks and other chronic diseases, so they should be part of a general training approach. For example, there are many other chronic diseases that fluctuate over time.

3.11.1 Training resources and providers

A training tool on inclusiveness and workability for managers has been developed under the Chrodis Plus programme funded by the European Commission (Chrodis Plus, 2020). The aim of the training tool is to help managers from organisations of all sizes to understand the benefits of inclusion for all workers and the good management of people with or at risk of chronic diseases in the workplace. Managers will learn how to measure and increase inclusiveness and the work ability of people with chronic diseases in enterprises. In addition, the toolkit for workplaces — fostering employees' well-being, health and work participation — contains resources that can be used both as checklists and to generate ideas for concrete and feasible actions that could be implemented in an organisation. The training tool and toolkit have been translated into various languages. More information on the Chrodis Plus activity on chronic diseases and employment and examples of resources in the training toolkit are given in Appendix 3.

Patient support groups, disability organisations and occupational therapists are among those who may offer training on accommodating workers with chronic conditions. Government support programmes may also offer training. Ergonomists may be able to offer training on making workplace accommodations and also on how to prevent and manage MSDs.

As referred to in section 3.11, on communication, EU-OSHA has developed some resources that can be useful for encouraging workplace discussions or as part of training:

- *Conversation starters for workplace discussions on musculoskeletal disorders: an EU-OSHA resource for workplaces* (EU-OSHA, 2019) is based on scenarios and includes scenarios on reporting MSDs, speaking to an employer about arthritis and speaking to an employee about work-related back pain.
- Napo training resources on MSDs (Napo, undated) — including the 'Understanding musculoskeletal disorders' toolkit — are based around short, wordless film clips featuring the animated character Napo. Discussion questions linked to the film clips explore issues such as the early reporting of MSDs.

As part of its Don't Delay Connect Today — Time2Work campaign ([32]), EULAR has produced some short 'day in the life' film clips showing arthritis sufferers at home and at work, which could be useful training resources.

3.12 Setting out policies and practices

Taking a systematic approach makes it easier to accommodate workers with chronic conditions, including chronic MSDs. This can be done by setting out the approach, practices and steps to be taken in written workplace policies and procedures. In larger organisations, policies and practices should be developed in cooperation with human resources, those responsible for equalities, safety and health/occupational health, and trade unions. Even in very small workplaces, it can be helpful to set out the steps to be followed when a worker reports a health problem or is returning to work after illness.

According to the Arthritis Society Canada (2019), organisational policies and practices that account for the needs of workers with chronic health conditions such as arthritis can include:

- accessibility and accommodation policies
- diversity, equity and inclusion policies
- leave of absence policies
- absenteeism policies
- accessible and inclusive recruitment and hiring practices
- safety and health policies
- return-to-work practices to support employees who have been away on leave.

([32]) https://www.eular.org/eular_campaign.cfm

Items covered in an accommodation policy can include:

- communicating to employees about existing accommodation policies and processes;
- making job candidates aware of accommodations available throughout the hiring process;
- supporting employees to disclose a health condition and request accommodations;
- working with an employee to develop an accommodation plan;
- managing changes within a team/department, such as modifying duties or scheduling;
- monitoring, assessing and revising accommodations as needed.

3.13 Getting advice and external support

Access to advice and support for both employer and worker is important for effective return to work. To be most effective, this support needs to take a unified approach involving the individual, their healthcare team and their employer or line manager, with a focus on work as a health outcome.

3.13.1 Getting advice

If someone has a persistent musculoskeletal problem that is affecting their work, they should seek medical advice. **Medical advice**, if shared with permission, should enable the employer to identify what support the employee needs, enabling the employer to make reasonable adjustments and adaptations and provide individual support related to the employee's specific problem, helping the employee to work to their potential. Health professionals including doctors, physiotherapists and occupational therapists may be able to provide advice on workplace needs and it is important that work is seen as a health outcome, which is not always the case. Workers should ask healthcare professionals directly for advice on work. Making a list of work tasks and what is difficult at work can help those suffering from musculoskeletal problems have this conversation with a healthcare professional, and will provide the healthcare professional with information relevant to providing advice on working with the condition.

If the organisation has access to **OSH experts**, they may also be able to give advice and support to workers with chronic MSDs. Their involvement can help with the return-to-work process and support both the worker and the employer in working out what is the best approach to take to enable a successful return. If this option is not available, health professionals may be able to signpost other relevant sources of help.

In some countries, OSH medical doctors are obliged to support the return-to-work process and agree to a part-time return to work by providing an integration plan (Austria and Germany).

Within the workplace, **human resources** and OSH staff may be able to provide support, as well as the **workers' trade union** if there is one.

Good communication between the individual and their manger is crucial to finding ways of helping someone stay at work (see section 3.11). Moreover, awareness among employers and line managers of conditions and how individuals can be supported is important.

3.13.2 External support programmes and services

Employers need to find sources of information that can help them to support their staff.

In some countries in the EU, employers and individuals may be able access support programmes or other external help. These may be in the form of national and regional employment or health services that provide return-to-work advice and support, including financial support and support for employing workers with disabilities or who have been off work with health problems. In other countries, there are national or regional work accident insurance systems that may offer support and advice, provide grants for equipment and building adaptations, or run specific programmes (Dutch Commission Work Health, 2018).

Some national programmes include support for ergonomic adjustments, training and compliance with legal requirements. According to Tymowski (2016), there are resources available in all EU countries to support reasonable accommodations in the workplace. For example, in Austria, this would be the

Fit2Work programme ([33]). In Germany, since 2004, companies have been obliged to support worker reintegration after sick leave. The City of Berlin established an 'integration team', which provided reasonable accommodations for workers who needed it in the waste management sector; 80 % of such investment was covered by waste management company. In Belgium, the Federal Agency for Occupational Risks (FEDRIS) is a public social security institution funded by the insurance premiums paid by companies. FEDRIS rehabilitates individuals with back pain and helps them to return to work after workplace assessments have been carried out. Finland provides access to work ability coordinators and return-to-work coordinators and provides subsidies for arranging working conditions. Workers can receive a partial sickness allowance if they return to work part-time, among other measures.

The Austrian Government passed the Labour and Health Act (Arbeit- und Gesundheit-Gesetz) ([34]) in 2011, followed by the Part-Time Reintegration Act (Wiedereingliederungsteilzeitgesetz) ([35]) in 2017. Both laws aim to facilitate return to work after prolonged periods of sick leave, as well as the sustainable integration of workers with chronic diseases or disabilities.

3.13.3 Sources of external information and guidance

Additional sources of information, guidance and support on working with musculoskeletal health conditions and making workplace accommodations include the following:

- Non-governmental disability and patient support organisations ([36]) provide general advice on rights and workplace accommodations, etc.
- Organisations providing support for people with specific conditions, e.g. arthritis and rheumatism organisations ([37]), back care organisations, osteoporosis organisations and organisations concerned with ageing, will also often provide information on workplace adjustments. Some have sections on their websites aimed at employers as well as workers.
- Organisations supporting older people often provide advice on working with health problems and disabilities.
- Trade unions, for example, will often publish guidance about workers with disabilities as well as advice on workplace safety and health, e.g. on working with computers and reducing risks from manual handling.
- Employers' organisations may publish advice on employing disabled people.
- Ministries of employment may publish advice on employing workers with disabilities, as may employers' associations, public health websites and organisations for people with disabilities in general.
- Organisations supporting workers with a health condition return to work are sources of information.
- The websites of health and social care ministries may also be sources of advice.
- Workplace equality advice organisations are sources of relevant information.
- The various sources cited in this document also provide helpful information.

It is also helpful, if the worker has identified useful information, that they share this with their employer, and human resources, occupational health and trade union representatives. Appendices 5 and 6 provide details of online information and resources.

([33]) https://fit2work.at/.europa.eu/en/publications/austria-fit2work/view

([34]) Implemented as the Fit2Work programme.

([35]) Bundesgesetz, mit dem das Allgemeine Sozialversicherungsgesetz, das Beamten Kranken- und Unfallversicherungsgesetz, das Arbeitslosenversicherungsgesetz 1977, das Arbeit-und-Gesundheit-Gesetz, das Arbeitsvertragsrechts-Anpassungsgesetz, das Arbeitszeitgesetz, das Betriebliche Mitarbeiter- und Selbständigenvorsorgegesetz, das Lohn- und Sozialdumping-Bekämpfungsgesetz und das Einkommensteuergesetz 1988 geändert werden (Wiedereingliederungsteilzeitgesetz) [Federal Law that amended the General Social Insurance Law, the Civil Servants' Health and Accident Law, the Unemployed Security Act of 1977, the Work and Health Law, the Law on the Modification of Work Contracts, the Working Time Law, the Social Insurance Law for Employed and Self-Employed, the Law on the Prevention of Wage and Social Dumping and the Income Tax Law of 1988 (Part-Time Reintegration Act)]

([36]) A list of national organisations of people with arthritis/rheumatism is available on the EULAR website: https://www.eular.org/eular_pare_organisations.cfm

([37]) A list of national rheumatism and arthritis organisations is available on the EULAR website: https://www.eular.org/eular_pare_organisations.cfm

3.14 Promoting musculoskeletal health at work

3.14.1 Workplace health promotion and MSDs

Musculoskeletal health in the context of health promotion in workplaces is important for everyone, not just individuals who have chronic MSDs or work-related MSDs. Because of the increase in how long people are living and the need to continue to work longer as retirement ages increase, keeping our musculoskeletal system healthy is becoming increasingly important. If we can maintain our musculoskeletal health, then we can continue to work, maintain our economic independence and go into retirement with active bodies that allow us to enjoy the years beyond work. For the employer, this means having a more productive workforce and retaining skilled and experienced workers.

Promoting musculoskeletal health at work for the whole workforce goes beyond risk prevention and interventions for individual problems. Workplace health promotion means employers actively helping their staff to improve their general health and well-being (EU-OSHA, 2010a).

Including health promotion as part of a systematic approach to MSDs at work helps to retain workers with chronic illnesses or facilitate their return to work, as well as promoting health and well-being among the whole workforce. Having a healthy workforce increases productivity and is beneficial to businesses. The workplace is an ideal setting to promote health, especially given the amount of time we spend at work (ENWHP, 2012).

For good musculoskeletal health, it is important to, for example, avoid poor and static postures, introduce more movement into work and promote health more generally in the workplace, for example by encouraging exercise and back care. Keeping physically active to remain fit, maintaining an ideal weight, having a balanced diet with calcium and fish oils, and avoiding smoking and excessive alcohol consumption are also all important for musculoskeletal health (Woolf, 2019). Box 30 provides examples of health promotion activities relevant to musculoskeletal health.

Box 30 Examples of health promotion activities relevant to musculoskeletal health

- Implement measures to avoid static sitting and standing and promoting movement.
- Promote physical activity and active living, for example:
  - help with the cost of physical activities outside work, such as sports or leisure centre memberships;
  - organise sports events within the organisation
  - encourage employees to take the stairs rather than use the elevator;
  - provide bicycles for travelling short distances within large work sites.
- Provide back care programmes.
- Provide access to physiotherapy at no or reduced cost.
- Promote a healthy lifestyle:
  - provide information on healthy eating and good facilities for turning advice into practice, e.g. by offering healthy food in vending machines or canteens;
  - implement healthy eating initiatives;
  - provide support to quit smoking;
  - offer confidential support and information about alcohol and drugs.
- Implement measures to improve and maintain mental health, for example by providing stress reduction training, relaxation courses and confidential psychological counselling.

There is a need for both managers and workers to be aware of musculoskeletal health at work to enable a better understanding of the impact that chronic MSDs have on workers and to help individuals deal with challenges at work and remain productive. Health promotion activities should be accessible to all, for example by offering health promotion activities during work time.

Everyone benefits from exercise. Overall, physical exercise in the workplace is, at least in the short term, effective in reducing and preventing MSDs. There is evidence that exercise programmes carried out in the workplace, including strength training, are particularly effective (Andersen, 2020). For individuals with chronic MSDs, physical activity in the workplace is important and the type will depend on what their condition and symptoms allow — postural change and appropriate stretching and exercise is generally recommended and, even during a flare-up of arthritis, it should still be possible to exercise (Arthritis Research UK, 2014). Regular exercise is particularly important for people with conditions such as arthritis because it helps to limit pain and maintain mobility and strength. Therefore, workplaces should help people to introduce some exercise into their work regime and should not inhibit them from doing so. The workplace can help to break down barriers to exercise such as feeling self-conscious about exercising in front of others. For conditions such as arthritis, it is important that exercises are appropriate, that they are done in moderation and that the right techniques are used. Examples of suitable exercises for people with conditions such as arthritis and back pain can often be found on the websites of patient groups, including Arthritis Research UK (2014), BackCare (2015c), Arthritis Ireland (undated) and Versus Arthritis (undated b). These exercises are often appropriate for the entire workforce.

The Chrodis Plus workbox on chronic diseases and employment (Chrodis Plus, 2020) contains practical resources on supporting worker well-being and health to enhance the work participation of all employees. It covers nutrition, physical activity, ergonomics, mental health and well-being, recovery from work, community spirit and atmosphere, and smoking and alcohol. It addresses health promotion areas in terms of strengthening knowledge and skills, creating a supportive working environment, and policies and incentives.

3.14.2 Avoiding static postures and encouraging movement

As mentioned, avoiding static postures such as prolonged sitting or constrained standing is important for the health of all workers, but particularly for workers with chronic MSDs. It should be part of risk prevention and health promotion activities (de Langen and Peereboom, 2020a,b). For people with rheumatic and arthritic conditions, maintaining a fixed posture for a long period can trigger the symptoms of pain associated with their condition. In addition, there is mounting evidence linking various types of ill health to sitting for long periods of time, including cardiovascular diseases and type 2 diabetes (Biswas et al., 2015; NIOSH, 2017; de Langen and Peereboom, 2020a).

Our bodies need movement, provided that it is not highly repetitive. Identifying the need to avoid awkward and static postures as part of risk assessment has already been addressed in the prevention section. It is important to change posture as much as possible and workers should be able to adopt a variety of positions when working. Employers should enable and encourage workers to move and stretch, varying between sitting, standing and moving around and taking frequent breaks from both static sitting and static standing or other static positions. The culture at work needs to change so that workers realise that it is acceptable and even desirable that they take breaks from prolonged sitting, standing or repetitive work when needed. The best way of sitting is ‘dynamic sitting’, where sitting postures are continuously altered. ‘Our next posture is the best posture’ is a useful slogan to follow. If a workplace encourages and facilitates this approach for all workers, those who must move around frequently will not require special treatment or feel different.

Recommendations on sitting at work can be summarised as follows:

- Do not exceed 5 hours of sitting at work each day. Try to spend 50 % or less of your working day sitting.
- Take microbreaks at least every 20-30 minutes.
- Always get up for at least 10 minutes after 2 hours of sitting.
- Work in an active manner and alternate between sitting, standing and walking.

There are various practical ways of increasing movement during the working day and providing opportunities and encouragement for workers to change position and take regular breaks. These include the following:

- identify the barriers to physical activity;
- consider whether workers can be given more autonomy to change posture and take breaks;
- design workstations to allow for movement, e.g. sit-stand workstations that allow changes in posture;

- design work so that several short breaks can be taken during the day to allow for movement;
- encourage workers to:
  - move every 30 minutes;
  - stand while on the phone;
  - hold walking meetings;
  - park as far away from the building as possible;
  - go and speak to a colleague instead of emailing or messaging;
  - take the stairs instead of the lift;
- put printers and waste bins in a common area;
- schedule stretching breaks in meetings and allow workers to get up and move during meetings.

Box 31 provides and an example of a workplace programme on occupational inactivity.

Box 31 Example of a workplace programme on occupational inactivity

A software company ran a programme to raise awareness of the risks of occupational inactivity and foster a healthy workplace culture through strong leadership. Measures taken included providing information, encouraging workers to move frequently throughout the day, ergonomic improvements such as height-adjustable desks and taller tables for standing meetings, and workshops. Workers were given biofeedback trackers and posters prompted them to take action, such as to take the stairs instead of the lift. They were offered personal health counselling services, and advice on avoiding sedentary work was built into the return-to-work programme. 'Health challenge' activities with small incentives were organised.

Source: EU-OSHA, 2017c

Further information on how to avoid prolonged sitting and standing and promote movement in the workplace is given in NICE (2008), NIOSH (2017), EU-OSHA (2019), de Langen and Peereboom (2020a,b,c) and Chrodis Plus (2020). Information on avoiding awkward working postures is available in Roman-Liu (2020).

4 Small enterprises

Workplace size appears not to be a factor in determining whether or not workplaces are likely to make adaptations (for workers with chronic conditions). In addition, workplaces where individuals feel that they can voice their concerns and they experience high levels of support from managers and colleagues are more likely to make supportive adaptations (Eurofound, 2019).

Although small organisations have fewer resources and less flexibility to adapt work or provide flexible working and accommodate a gradual return to work, as emphasised as important throughout this report, simple steps can often be taken, through discussions with the worker about the health problem, to support a worker to continue to work. A report including eight case studies and linked to this report (EU-OSHA, 2020) found that some of the measures applied in the case studies were easily transferable to small businesses and other types of businesses; in particular, policy and procedural elements of the measures described could be applied in a simpler form in small businesses. Factors such as workers having a supportive manager and being able to stretch and exercise are independent of the size of an organisation. The size of small and medium-sized enterprises (SMEs), which can result in a more familial atmosphere, can also have advantages for the return-to-work process, as it creates a more supportive environment for workers returning to work (EU-OSHA, 2017a).

General approaches for small businesses, suggested based on these case studies, are as follows:

- Ensure that workers know that the employer has a positive attitude to valuing workers and supporting them, even if a formal policy is not in place.
- Be open to exploring ways to support someone to continue to work. Take a positive attitude by starting with the idea ‘let’s see what might be possible’, rather than assuming from the outset that accommodating a worker will be impossible. If in the end it proves too difficult to accommodate the worker, they will at least leave with a positive attitude, knowing that you at least tried, and other workers will see this as well.
- Discuss with the worker their problems with work, and their wishes and ideas for measures that could be taken. Often in smaller organisations, communication is better, as everyone knows each other.
- Get simple advice from relevant non-governmental organisations, work insurance organisations, and national safety and health websites. Involve the worker in this, for example by asking them to find and share relevant information. Ask them if they have been given any advice by a medical physician, physiotherapist, etc. Check if there are any external programmes that provide support to employers and/or workers.
- Make a simple plan in writing, for example a bullet point list of steps and measures agreed on. This will help to make the approach more systematic and prevent misunderstandings. In some countries, external return-to-work programmes provide support for the development of return-to-work plans.

Some examples of the simple measures and suggestions described in the case studies that could be adopted by small businesses are given in Box 32.

Box 32 Examples of simple measures from case studies to allow individuals to continue working

Equipment and devices that can allow individuals to continue working include:

- an ergonomic mouse
- speech recognition software
- a wireless headset for answering the phone
- a foldable perching stool for site visits
- a special cushion to relieve pressure when sitting
- an adjustable-height desk/sit-stand desk.

Adjustments to work tasks and working patterns that can allow individuals to continue working include:

- a gradual return to work and reduced hours

- flexible working to accommodate medical appointments
- teleworking on 'bad days'
- later start time to avoid standing on public transport
- the opportunity to take more frequent breaks to move and stretch
- the opportunity to lie down in a rest room if fatigued
- the opportunity to swap physical tasks with a colleague.

Source: EU-OSHA, 2020

The report concludes by saying that, although simple measures can be taken, the likelihood of micro and small enterprises (MSEs) providing support, and also finding the optimum solution, is greatly increased in circumstances where companies and employees have access to coordinated external multidisciplinary programmes and financial support, for example for making adaptations; where return to work and retention at work are clinical outcomes of medical treatment; and where the company and employees have access to occupational health services, for both the early detection of problems and support for making workplace adaptations. A system is needed that encourages health professionals and employers to focus on workers' capabilities and not their disabilities. The burden on small businesses can be reduced not only by providing financial and technical support but also by simplifying return-to-work systems and procedures. A focus on prevention and early intervention is paramount.

4.1 Checklist for small enterprises on working with chronic MSDs

People do not have to be 100 % fit to work. Those with chronic MSDs learn to work around their problems and manage their pain — at home or at work — for example by avoiding repetitive movements or prolonged sitting or standing without a break. They are often productive, motivated and try to avoid missing work, with valuable skills and experience. With the right adjustments, they can usually continue to work and often only simple and low-cost measures are needed. This checklist covers the steps to take to support workers with chronic MSDs to remain in work. Much of the advice is also relevant to other chronic conditions.

- **Prevent musculoskeletal risks:** safety and health measures that make work safer and easier for all the workforce can enable an individual with reduced work capacity to remain in employment:
  - assess MSD risk factors and implement preventive measures in the workplace;
  - avoid static and awkward postures, heavy lifting, forceful or repetitive movements and exposure to vibration;
  - recognise that some workers may be more susceptible to risks than others;
  - encourage the early reporting of problems and consult workers.
- **Enable early intervention:** the earlier a problem is reported, the easier it is to deal with, the less likely it is to become a long-term problem and the less likely it is to result in long-term work loss, so enable and encourage workers to speak to you as soon as an MSD problem arises or causes difficulties:
  - discuss the difficulties they are having and what support they think they need;
  - act on the outcome of the conversation;
  - encourage early access to healthcare support.
- **Make accommodations:**
  - show that you are supportive and want to help;
  - focus on the worker's capabilities, not disabilities;
  - have an open conversation with the worker about symptoms and how they vary, what tasks they find challenging and what support they need — a conversation can sometimes be sufficient to identify practical support measures;
  - involve the worker, their healthcare team and supervisor;
  - allow sufficient time and try out different measures — usually a combination of measures is needed;
  - find out what external information and support are available;

  - agree on a simple plan in writing with the worker;
  - review measures and make any additional changes if the worker's condition changes in the future.

- **Consider adjustments such as:**
  - offering flexibility in working hours, such as a later start or the possibility to work from home;
  - introducing flexibility into how tasks are done and allowing the individual to control the pace of work;
  - allowance to take more frequent breaks to move or stretch, or, if the work is tiring or physical, to rest;
  - rotating tasks or swapping physical tasks with other workers;
  - providing equipment such as an ergonomic mouse, compact ergonomic keyboard, dictation software, height-adjustable desk and ergonomically designed tools;
  - providing lifting aids or power tools;
  - allowing a gradual return to work and reduced hours;
  - providing support, such as allowing time off for medical appointments.
- **Promote good musculoskeletal health,** e.g. promote healthy backs, promote ways to reduce prolonged sitting and static postures, such as through mini-breaks, and promote physical activity.
- **Plan,** e.g. put in place a return-to-work plan and train supervisors on having open conversations and accommodating a diverse workforce.
- **Make the workplace more inclusive** for a diverse workforce. This is called universal design:
  - consider inclusivity whenever you plan changes to the workplace or the work or buy new equipment, e.g. by buying adjustable equipment;
  - simple adjustments to support an individual can often benefit the whole workforce, so consider providing measures such as flexible working, teleworking or ergonomic tools to all workers, as there will be less need to introduce specific measures for individuals and it means that those with a specific problem will not appear to be getting special treatment.

5 What workers can tell us

This report has looked at the various ways that employers can support those with chronic musculoskeletal conditions to remain in work and the value to employers in doing so. Much of the advice comes from organisations supporting those with arthritis-related conditions, underlining the importance of using the knowledge and experience of such groups and of sufferers themselves. In Box 33, one wheel-chair bound arthritis sufferer shares his views and insights on the approach that employers should take.

Box 33 'My ideal employer'

Franciso is a 45-year-old architect whose osteoarthritis gave rise to a spinal cord injury in 2014. As an architect, he works as a volunteer consultant on accessibility issues, providing advice on how to improve our environment, in the quest to offer universal accessibility. Previously, in his professional life as an architect, he spent many hours drawing on paper before working on the sketches on a computer, while sitting in poor postures, and he subsequently developed osteoarthritis. One day, he went to work as usual, but the mere effort of opening the door was enough to cause a hernia, which he was unaware of, to rupture, injuring his spinal cord. He went from leading a normal life — with a job, a partner, an athletic lifestyle — to being someone with a spinal injury, unable to move or feel anything below his chest. Surgery and years of physiotherapy, together with his determination, the support of his partner and his positive approach to life, have reduced the initial impact of the injury. His active life style includes travelling, driving, sailing and boxing. Working as a volunteer for various organisations, he is his own boss, in charge of his postural health. However, if he were an employer he would consider and put in place for everyone various things that he is aware of and would want for himself but that are not usually considered.

'If I were an employer…'

'As an architect, I was already aware of the importance of creating an accessible work environment but, as a wheelchair user, I have realised quite how many small details there are that can become insurmountable barriers. An accessible space for those with reduced mobility is ALWAYS, and I put this in capitals for emphasis, a convenient space for everyone. Does anyone find the lift more inconvenient than the stairs?

If I had an employee who was in pain because of a repetitive task they were doing, who had to take time off and who could end up developing a rheumatic disorder due to premature wear and tear, as happened to me, I would carefully analyse whether this task was the cause of their sick leave. I would look for a way to adapt the task so that, when the employee returned, it would not do them any further harm. I would also introduce the same measure for all employees who do the same task since they would be exposed to the same risk.

As a result of my personal experience, I would not hesitate to invest in the health of my workers, whether they have a pre-existing medical condition or whether they become ill due to their work (and with greater reason in that case). Money spent on protecting health is never a waste, but an investment.

I would be very aware of the needs of my employees. I would be flexible about their work hours and I would let them work from home when, for health or work-life balance reasons, it's more convenient for them than travelling to work. Breaks during the working day are also very important as they help employees concentrate and stop them getting tired or bored. A happy employee is a good employee. I would seek to create a climate of cooperation, collaboration and understanding of the needs of everyone, striving to ensure that any adjustments and adaptations that a colleague may need are not perceived as privileges. Such modifications are aimed at ensuring everyone works in the same level of comfort based on their different capabilities.

A good colleague does not cease to be good just because they are diagnosed with a disease or because they need to change their working hours or place of work. This is something that all good employers should embrace and promote. A good work atmosphere is as important as a good salary — sometimes even more so.

Occupational health and safety measures, as I knew before my injury, are never a waste of money. They serve to prevent accidents and injuries, and to minimise the effects that these can have if they do happen. They are always a good investment, but few employers or employees see it that way. I discovered it in the most shattering way. Ensuring the correct posture at work is a health and safety measure as important as any other.

I don't know if I would be the perfect employer by implementing these measures, but there is one measure that would certainly make me closer to perfect: listening to the needs and suggestions of my employees and trying to facilitate their tasks. It is impossible to know everything, and the information provided by those who do the work day in and day out is very important. It doesn't matter if the work is something general like office work or something more specific, it can always be done in better conditions. Working right is a right, an obligation and a good habit.'

Source: Adapted from the third-prize essay by Francisco Carreira Roca, Edgar Stene prize 2019, available at: https://www.eular.org/myUploadData/files/3rd_francisco.pdf

6 Providing external support and early intervention

6.1 External support

To get workers back to work as quickly as possible and to reduce the high economic and social burdens associated with long-term sickness absence and disability from MSDs and early exit from employment, employers and workers need effective support for the return-to-work process. This includes the types of support described below.

Access to external support: this is important, in particular for small businesses, and should be in the form of suitable services and programmes for the employer and the individual on the return-to-work process, including technical support.

Having a joined-up approach between all the relevant actors involved: this is also important and may include collaboration among healthcare providers, employer, manager, employment services, social rehabilitation services, insurance funds and, of course, the worker (EU-OSHA 2016a, 2017a; IWH, 2019a). Some Member States, such as Austria, already have rehabilitation programmes based on a multidisciplinary approach (EU-OSHA, 2016d,e). Policy, intervention and budgets need to be coordinated to prevent silo working.

Assessment-based rehabilitation approaches tailored to the individual: successful rehabilitation interventions are those providing assessment-based, tailored and coordinated support to companies and employees (EU-OSHA, 2016d). A coordinating support person, such as a case manager, should coordinate services according to the individual's needs and support the individual. The focus needs to be on the fit between job demands, individual competencies and support needs (known as a biopsychosocial model).

Capacity not incapacity: as has been mentioned, individuals do not have to be 100 % fit to work. Both employers and medical professionals need to focus on aspects of the job that a worker with an MSD can perform, not what they cannot do.

Early healthcare intervention: within primary care, healthcare systems should provide interventions early in the case of MSDs, so that patients with MSDs are assessed and receive treatment without delay (EULAR, 2018; EU-OSHA, 2020). A greater focus on preventive health care and non-fatal chronic diseases such as MSDs would facilitate this.

Access to appropriate treatments: access to the most appropriate treatments and therapies, rehabilitation and ongoing care will enable people to re-join or be retained in the workforce. This should include greater access to work-orientated cognitive behavioural therapy, or other psychological therapy as part of healthcare services' role in supporting return to work.

Access to return-to-work coaching: the individual needs a positive approach to returning to work and needs to be ready to return. Sometimes workers are afraid about the consequences of their sickness and disabilities and they are pessimistic about their future. In these cases, coaching can help the worker to face the problem and accept return-to-work support.

Work as a treatment (or clinical) outcome: there is a need for work to be seen as an outcome of healthcare treatment by all healthcare practitioners (EU-OSHA, 2016a, 2016b). Work should be a component of care plans: healthcare providers need to support patients to find work or remain in their current employment. Medical professionals need to be aware of this and to receive training in this respect.

Financial incentives: small and micro enterprises in particular would benefit from financial incentives, such as funding for work adaptations and improving workplace conditions, and tax incentives for employers and employees.

Improved working conditions and rights: this could include rights to part-time work, job sharing and flexible working conditions. Such practices benefit all members of society (EULAR, 2018).

Reintegration and rehabilitation should not be restricted workers who have suffered occupational accidents or have recognised occupational diseases: providing help to only the severely disabled tends to exclude individuals with less severe MSDs, many of whom could return to work after being given a little help or offered simple adjustments to their jobs (EU-OSHA, 2007a).

Rights to accommodations should be based on health status and not be limited to those who have a recognised disability: this is for the same reasons as those mentioned in the point above. Waiting until someone's disabilities are sufficient to classify them as disabled to provide them with support is counterproductive. The use of the term 'chronic diseases' is rare in employment-related legislation, while the concept 'disability' is common; therefore, more could be done to develop specific policies on chronic diseases (Eurofound, 2014).

Workplace support processes could be enhanced to improve return to work and the sustainability of employment among workers living with episodic conditions: ways of enabling this need to be identified (Gignac et al., 2020). SMEs in particular need support and education (EU-OSHA, 2017a)

Robust OSH systems are needed in the Member States (EU-OSHA, 2016b) and **all employers and workers need access to occupational health services** for early detection and prevention, as well as to support them in identifying accommodations. Ensuring access to occupational health services is particularly important for self-employed workers and for those working in small enterprises or in 'atypical' work, and for the small enterprises themselves (EU-OSHA, 2016b; 2017a).

Employers would benefit from support to promote workers' health: guidelines are needed for authorities on how local schemes could be provided (Work Foundation, 2019).

Work-focused early healthcare interventions: this means that remaining in work is the treatment goal or clinical outcome for healthcare professionals. It promotes work ability through rapid referral; diagnosis and clinical management by specialists in the first days of work disability; patient education; recommendations for physical activity; and support for returning to work (Bevan, 2013; Rodriguez-Rodriguez et al., 2020). Diagnosing and treating diseases soon after the first symptoms appear are important because doing so can slow the onset and progression of chronic conditions. Examples of how this can work in practice are given in Rodriguez-Rodriguez et al. (2020).

Rehabilitation policy and services should address diversity in working population: Some groups, such as young workers, appear to be less targeted by rehabilitation services (EU-OSHA, 2010) and women may have difficulties accessing rehabilitation services if they have child care responsibilities (EU-OSHA, 2013).

Box 34 EULAR Charter for Work for People with Rheumatic Diseases in Europe

The EULAR Charter for Work for People with Rheumatic Diseases in Europe covers four areas: (1) greater public awareness and recognition; (2) the creation and enforcement of legislation to support access to work — good employment conditions could include tax incentives for employers and employees, part-time work, job sharing and flexible working conditions, which are practices that benefit all members of society; (3) employers being proactive in creating an inclusive and flexible work environment; and (4) support from healthcare providers, by focusing on the abilities of those with chronic conditions — what they can do rather than what they cannot do — and giving them the support they need to find work or to remain in their current employment. Success in this final area should be regarded as a legitimate clinical (treatment) outcome. Early diagnosis, access to the most appropriate treatments and therapies, rehabilitation and ongoing care can enable people to re-join or be retained in the workforce.

Source: Adapted from EULAR, 2018

Eurofound (2019) provides additional policy pointers on work and chronic diseases, including those summarised in Box 35.

Box 35 Policy pointers from the work of Eurofound

- Without policy intervention, the high and rising incidence of chronic diseases in the workplace is likely to impact negatively on business costs and productivity.
- A holistic life cycle policy approach is needed.
- Awareness raising around the issue of workplace accommodations should highlight that very simple changes relating to working time flexibility can often have a significant impact on the ability of those living with chronic diseases to stay in employment.
- An assessment is needed to determine whether further clarification and guidance are needed with regard to the coverage of chronic diseases in the context of EU non-discrimination legislation, particularly in relation to the right to reasonable accommodations.
- Further research, as well as information sharing on good practices linked to workplace accommodations, is needed, including on the costs and benefits of making adjustments.
- Differences and therefore fairness in access to workplace accommodations, depending on country, contract type, educational attainment and occupation, need to be addressed. This includes fairness in terms of such access for those on atypical contracts.
- One-off interventions are likely to be insufficient and workplace accommodations need to be kept under review.
- Raising awareness of chronic diseases and work is needed to address common misunderstandings, which can lead to discrimination, and to generate enhanced support among work colleagues.
- Social partners should incorporate the issue of integration and retention of workers with chronic diseases into social dialogue at all levels.
- More research is needed on the extent of workplace accommodations offered and their impact on the retention of workers with chronic diseases.

Source: Eurofound, 2019

6.2 Early healthcare intervention and other external support

As has been mentioned, early intervention means taking measures — such as providing professional support, ensuring rapid referral and diagnosis, and adjusting the work environment — as soon as symptoms appear. This significantly lowers the worker's chance of experiencing long-term absence from work. Early intervention can reduce absenteeism and lead to real savings in national healthcare and social welfare systems (Rodriguez et al., 2020; Theodore et al., 2015). Therefore, healthcare and other support systems also need to provide early interventions for MSDs, with a focus on keeping the worker safe at work, through a coordinated approach. Bevan et al. (2009b) provide examples of early intervention requirements in employment and in welfare and healthcare systems (see Table 4).

Table 4 Examples of early interventions in employment and welfare and healthcare systems

Domain	What	When
Employment	Examples: ▪ Reasonable work accommodations (e.g. working time, job design) to allow early or partial return to work ▪ Employers required to undertake return-to-work interviews	For specified health conditions or disabilities After 5 days of absence
Welfare system	Examples: ▪ Welfare system allows partial work and partial benefits claims ▪ Functional capacity assessment by occupational health specialist ▪ Employers required to implement an early return-to-work plan	After 10 days of incapacity After 10 days of incapacity After 10 days of absence from work
Healthcare system	Examples: ▪ Early referral to physical therapy ▪ Early access to effective drug therapies for workers with inflammatory conditions ▪ Early access to cognitive behavioural therapy for selected back pain patients	On diagnosis In cases of insufficient response to initial treatment After 8 weeks of work incapacity

Source: Bevan et al., 2009b; © The Work Foundation

Further information on early interventions in health care for MSDs is given in Rodriguez-Rodriguez et al. (2020).

Further information on rehabilitation and return-to-work measures in the Members States can be found in EU-OSHA (2007a, 2016d) and in nine case studies (EU-OSHA, 2016e). Eurofound (2019) provides additional policy pointers on work and chronic diseases.

7 Specific examples of individual accommodations and interventions for the whole workforce

7.1 Introduction

This section contains a collection of good practice examples. There are two types: examples of helping people to stay at or return to work with chronic MSDs and examples of interventions to improve working conditions for the whole workforce.

The examples have been identified from previous EU-OSHA research, national initiatives and good practice examples from different Member States and non-governmental organisations. Unpublished interventions from consultancy companies (the Institute of Occupational Medicine (IOM), United Kingdom, and Groep IDEWE, Belgium) were also included to show what types of accommodations can be made in practice, and they cover different conditions and types of work.

7.2 Accommodations for office and desk-based work

This section contains a collection of good practice examples of how people have been helped to stay at or return to work with chronic MSDs. Many of the examples of accommodations are relatively low cost or need only a small investment. In many cases, the individual example involves more than one accommodation.

- **Flexible start times and a recliner for rest breaks**

A vice president with osteoarthritis had difficulty maintaining her stamina during the working day. To accommodate the fatigue, she was given a flexible schedule and allowed to come in later when necessary. Her employer also provided her with a recliner for her office so she could take additional rest breaks throughout the day (JAN, 2020a).

- **Teleworking for a manager**

A department head was diagnosed with ankylosing spondylitis and, increasingly, sustained sitting became a severe problem. She was allowed to work at home 2 days a week. This schedule has been ongoing for 10 years and is still working well (unpublished consultancy advice: IDEWE, 2019).

- **Ergonomic readjustments and flexible working**

A woman with rheumatoid arthritis had decided to continue working. She spoke with her employer and her colleagues. To begin with, her colleagues did not understand her condition and they were also worried that she would not be able to work as well as before the diagnosis. The employee felt stuck, without any opportunity to advance in her job, which resulted in high levels of stress, as she wanted to continue working. She decided that she must stop letting her rheumatoid arthritis be an obstacle to her career, and she spoke with her supervisor, explaining what rheumatoid arthritis is and its effect on her everyday life. Her employer spoke to her general practitioner (GP) for advice and provided her with an ergonomic workstation. In addition, she was able to work flexibly and without tight deadlines. In Italy, a GP can recommend reduced working hours, but the woman advises others with MSDs to continue working full-time until they are more aware of their symptoms and what they can or cannot do. She recommends that individuals search for accommodations and communicate with their employer, to give both the individual and the employer time to learn how to deal with symptoms. (Artrite reumatoide.it, undated).

- **Flexitime and an ergonomic desk**

An employee with degenerative arthritis was supported by being provided with his own ergonomic desk and was not required to hot desk with everyone else. He was also able to work flexible hours, so had no need to drive during rush hour (Arthritis Research UK, 2016)

- **Adjustable workstation and rest breaks for pregnant worker with back pain**

A customer service agent for an insurance company was pregnant and experiencing significant leg and back pain when sitting for long periods of time. She also needed to use the rest room frequently. The employer provided an adjustable workstation to enable the employee to alternate between sitting and standing positions. The employer also allowed her to take more frequent rest breaks (JAN, 2018).

- **Improved office ergonomics for back problems following a road accident**

An office employee had thoracic injuries from a road accident. For reducing his back problems and to evaluate his posture, his employer asked for an ergonomics assessment. The main solution was to use two screens, but position the main one directly in front of the user, use a keyboard riser to prevent looking down when typing, remove the armrests as these impacted on ingress to the desk, and use of a footrest to allow changes in position (unpublished consultancy advice: IOM, 2019).

- **Phased return to work following a fall and a car accident**

A worker who suffered musculoskeletal problems in the neck and shoulder related to a fall and a previous car accident was able to successfully return to work and normal duties through a phased return, where her hours were gradually increased; by using a very lightweight four-wheeled cabin bag to take her lightweight laptop and other belongings to external meetings; and as a result of the flexitime arrangements available for all staff, which have allowed her to fit in regular physiotherapy sessions.

- **Changes to seating and a sit-stand desk to reduce back pain**

A female accountant had three prolapsed discs: two in the cervical spine and one in the lumbar spine, which gave her the most discomfort. To reduce pain and discomfort in the lumbar spine, an ergonomics evaluation of her computer workstation was performed. To reduce pressure in the lumbar region, it was recommended that the angle between the thigh and the pelvis should be increased (when most people sit, this angle is 90°). Normal sitting opens the disc spaces in the lumbar area, which puts additional pressure on the discs. Suggestions included the use of a saddle seat and the use of a sit-stand desk. Both of these would increase the angle of the hip joint (unpublished consultancy advice: IOM, 2019)

- **Improved backrest, keyboard stand and regular moving**

An employee with chronic low back pain was assessed ergonomically. While performing work tasks, it was identified that as a result of prolonged sitting there was intolerance of the static load on the spine and neck flexion when typing. The solution was for the employee to use the free-float function of the backrest of his chair to allow movement of the lumbar spine and the possible use of a keyboard stand to reduce neck flexion when typing. In addition, he was advised to ensure regular episodes of standing and moving away from the desk (unpublished consultancy advice: IOM, 2019).

- **Trialling cushions for sore tailbone syndrome**

A female worker in her early 30s had suffered from acute low back pain for several years, even before being recruited by the organisation where she currently works. Her job tasks involve office-based research, meaning prolonged periods of sitting in static positions. For several years, she thought she had non-specific back pain but after visiting her GP following a display screen equipment (DSE) assessment she was diagnosed with sore tailbone syndrome. The ergonomist provided her with three different cushions (a ‘doughnut’ type cushion, specifically for sciatica, and one to prevent pressure sores when in a wheelchair) as solutions for the pain triggered by the prolonged sitting. It was also suggested that she use a sit-stand desk. The worker now uses a very soft cushion, specially designed for those in a wheelchair, and for a couple of hours per day she works using the standing desk (unpublished consultancy advice: IOM, 2019).

- **Computer workstation changes for neck and shoulder problems**

An office worker was absent for more than 1 year because of severe neck and shoulder problems. When she returned to work, an ergonomic analysis of her workstation was performed, which resulted in adaptations being made to her chair, table and computer set-up. Moreover, a document holder was provided. She still works at her workstation without complaints (unpublished consultancy advice: IDEWE, 2019).

- **Computer workstation equipment changes for editor**

A technical editor with osteoarthritis had difficulties in editing documents using a standard screen and computer. He was provided with a touchpad mouse, a programmable keyboard and a chair with arms to help movement (Arthritis Research UK, 2016).

- **A document slope to reduce neck flexion**

A scientist in his 60s felt pain in his neck when he was typing. He was unable to touch-type and, after a DSE assessment identified neck flexion when typing and writing, a document slope was provided for him. This enabled the scientist to write with his neck in a neutral posture and reduced the level of discomfort and pain. In addition to this, he no longer types reports but uses the document slope to write in longhand before delivering the report to secretarial staff for typing (unpublished consultancy advice: IOM, 2017).

- A **chair and a cushion for return to work after surgery**

A female worker in her early 20s had surgery on an anal fistula before being recruited by the organisation where she currently works. She works as a finance and management operations assistant and is office based, with her main tasks being data entry and finance data checking. She works in a relatively static position, sitting for prolonged periods of time. During her first display screen equipment assessment, she said that a second surgical procedure would be needed. The ergonomist, before the surgery, provided her with a special cushion (for people with sciatica) to enable her to sit with a good upright posture while removing pressure on her low back. A 'doughnut' type cushion was provided for the first month after her return to work. In addition, a new fully adjustable chair was given to her, to enable her to work in a comfortable position with less physical pressure on her low back (unpublished consultancy advice: IOM, 2019).

- **Improving accessibility for an individual with walking limitations resulting from osteoarthritis**

An individual with osteoarthritis and walking limitations had difficulty accessing the workplace. The employer contacted the Job Accommodation Network (JAN), asking for ways to improve access. JAN suggested an accessible parking space, close to the office entrance, and moving the individual closer to the common office equipment area (JAN, 2018).

- **An adapted stamp for a paper stamp worker**

A clerical worker who stamped paperwork for several hours a day was unable to continue making pinch and gripping movements because of carpal tunnel syndrome. The individual was accommodated with adapted stamp handles. An anti-vibration wrap was placed around the stamp handles. In addition, tennis balls were cut and placed over the wrapped handles to eliminate the need for fine motor pinching and gripping (JAN, 2020b).

- **Equipment accommodations for a worker with cubital tunnel syndrome**

A sales clerk with cubital tunnel syndrome lost the ability to move her right hand. The individual needed to use the computer to create reports. Her employer purchased a left-handed keyboard, foot mouse, forearm supports, an articulated keyboard and mouse tray, and an ergonomic chair (JAN, 2020b).

- **A new chair with a neck support to overcome neck and shoulder pain**

A receptionist in her 30s had worked at the reception desk without problem until she had an injury at the gym when exercising. The injury caused right shoulder and neck pain, which resulted in 3 months away from work because of pain that continued for several months. After a DSE assessment of the workplace, it was identified that she needed an adjustable chair that included a neck rest to give her more support when she was sitting against the backrest (unpublished consultancy advice: IOM, 2016).

- **A page turner for a social worker whose tasks involved reading**

A social worker with arthritis in her hands was having difficulty reading case summaries, manipulating paperwork and taking notes. She was accommodated with a page turner, a document support, writing aids and the option to dictate reports to clerical staff (JAN, 2020a).

- **Speech recognition software, an ergonomic chair and a sit-stand workstation for an insurance clerk**

An insurance clerk with arthritis from systemic lupus erythematosus was experiencing pain in her back, neck and hands from sitting for long periods of time doing computer work. She was accommodated with speech recognition software, an ergonomic chair and an adjustable sit-stand workstation (JAN, 2020a).

- **A left-handed keyboard, speech recognition software and ergonomic office equipment for a receptionist**

A receptionist with arthritis in his right hand due to an injury needed to input data into a computer. He was accommodated with a left-handed keyboard, an articulating keyboard tray, speech recognition software, a trackball and office equipment for workstation rearrangement (JAN, 2020a).

- **An ergonomic sit-stand workstation for a clerical worker**

A clerical worker with scoliosis had sitting and standing restrictions. Because the worker is required to work at a desk for the majority of the time, the worker was accommodated with an ergonomic workstation evaluation, an ergonomic chair and a sit-stand computer workstation (JAN, 2018).

- **A change of work tasks and an ergonomic workstation**

A professional team leader was diagnosed with rheumatoid arthritis. He decided to speak to his employer and together they found some workable solutions. Among them were for the worker to work from home and change his job tasks. Instead of leading just a team, he has now become responsible for projects and decision-making for the whole company. He goes to work in his ergonomically redesigned office whenever necessary (Artrite Reumatoide, undated). https://www.artritereumatoide.it/p/Io-e-il-mio-lavoro).

- **Speech recognition software and ergonomic tools for a journalist**

A journalist with bilateral carpal tunnel syndrome was limited to 2 hours of typing and writing per day. His employer purchased writing aids and an alternative keyboard; installed speech recognition software; allowed him to take breaks throughout the day; and provided him with office equipment to rearrange his workstation (JAN, 2020b).

- **Measures to support work as a writer**

Erik is a writer with rheumatoid arthritis and, although he felt that the disorder had made his life more difficult, he decided that this must not stop him from doing what he loves the most (writing). He thinks that the more sedentary he becomes the worse the condition gets, and the more he is productive the better he feels. However, he advises getting some rest when it is needed and leaving some tasks for the 'better days'. Erik has managed to fight his symptoms and continue to be productive with special equipment such as a hyper-sensitive mechanical keyboard and programmable mouse, which eliminate unnecessary movement of his hands. For bad days, he uses voice recognition software and a microphone. The software writes as he speaks. He also finds it important to use the right chair, to ensure he feels comfortable while at his workstation (ANRF, 2020).

- **Good relationship with employer and 'tweaks' at the workplace for young RMD sufferer**

Kelli is a geoscientist technician. She is now 43 and was diagnosed with rheumatoid arthritis when she was 23. She has always worked full-time. She explains that medication, some tweaks at the office and a good relationship with her boss are the most important factors enabling her to stay at work (Collins, 2016).

- **Regular discussions with manager support continued working for young RMD sufferer**

A young worker who suffers from psoriatic arthritis carries out office-based work. His manager has a positive attitude to supporting this well-liked and valued member of staff. They have regular meetings to review his needs. Being open about his condition at work and having it accepted by colleagues means that he feels comfortable about applying symptom-relieving measures to a painful ankle joint while working at his desk, for example (EULAR Time2Work campaign video, 2019; available at: https://www.youtube.com/watch?v=0jOY1YC9tD8).

- **An extra heater to relieve symptoms of an RMD**

This woman has systemic sclerosis, an RMD. Her employer, recognising her as a reliable and productive worker, has made some workplace adaptations to retain her. This includes letting her use a supplementary heater at her workplace, which helps to relieve the symptoms. The employer is also happy to accommodate her when she needs some time off for hospitalisation or sick leave (EULAR Time2Work campaign video, 2019; available at: https://www.youtube.com/watch?v=HkoZ2uqlMR0)

- **Secretary with spinal disc prolapse**

A secretary had a disc prolapse in the cerebral spine. After rehabilitation with the support of Fit2Work (Austria) business counselling, a re-integration plan was developed. It included the acquisition of a special ergonomic chair (paid for by social insurance as part of 'social rehabilitation'), the instruction of an occupational health professional and the installation of software that prompts regular breaks with exercises in the workplace.

- **Early intervention and accommodations for upper limb problems — research and data entry work**

A female researcher in her early 60s has been working in the same organisation for the past 10 years. Some years ago, she faced a problem with tingling and pins and needles in her fingers when typing. She is currently waiting for a formal diagnosis for her symptoms, but her workplace has been assessed under national regulations implementing the provisions of the DSE regulations, and additional support has been given to her by her general medical practitioner, an occupational health advisor and ergonomists. Several solutions have been trialled with the worker, some of which have been more helpful than others. These have included installing a purpose-built shelf below her desk, enabling her to lower her keyboard; ensuring that screen breaks are taken; and facilitating working from home. Data entry tasks that she previously had to undertake have also been transferred to other workers to reduce the need for continuous typing. Finally, a voice recognition system is also being trialled. Early intervention and continued evaluation have enabled the worker to continue in her full-time role (EU-OSHA, 2020).

- **Return to reception work after bone fractures due to osteopenia**

A female receptionist in her early 60s was diagnosed with osteoarthritis (joint pain and stiffness) and osteopenia (thinning of the bones). Subsequently, as a result of a fall at home, she broke two vertebrae and damaged her knee and ankle ligaments. After 6 months of sick leave, the worker started a phased return to work over a 3-month period; since her return, she has been using crutches. Her line manager, colleagues and human resources (HR) maintained contact with her (both formally and informally) during her absence. Her workstation was risk assessed and a larger flat footrest provided to improve stability when seated. She was also provided with a hands-free Bluetooth headset for the telephone, and space was created around her desk to enable her to move every 30 minutes. The worker continues to receive physiotherapy treatment and is able to access ergonomics support when needed (EU-OSHA, 2020).

- **Workplace stretching and other accommodations to enable return to work after a back problem for a public administration worker**

A female project manager in her early 60s has worked for the same organisation for 21 years in a desk-based role. Her job involves project management, administration and desk-based research. She has faced problems with pain in her lower back for the past 7 years and, after several medical examinations, she was diagnosed with piriformis muscle syndrome. The main symptom of this is acute pain, especially when sitting. The worker was absent from work for 1 year and she then went through a planned phased return to work, after discussions with her line manager and other health professionals. Her line manager and colleagues maintained contact with her during her absence. Several changes were implemented to facilitate her return. These included providing access to a sit-stand desk, a VRS, a 'stick stool' for use during events involving standing, a wheelchair cushion for comfort when sitting and a rest room for stretching. The worker also has to travel by air as part of her work. To facilitate this, her organisation ensures that she has an aisle seat on the plane, so that she can move around. In addition, hotels providing access to gym facilities are routinely booked for her trips. Now working at 80 % of full-time hours, the worker has been able to continue in her role in a way that is sustainable in the long term (EU-OSHA, 2020).

7.3 Accommodations for manual and physical work

- **Simple adjustments for physical work — maintenance workers**

'We've successfully kept quite a few members of (maintenance) staff in work just by making some simple adjustments. It's about them following agreed processes, giving them things like cushions for kneeling on or a different ladder, or slightly changing duties.' Health and safety manager working for a housing association (IOSH, 2017).

- **Retraining care assistants to avoid manual handling**

In France, carers in a retirement home when classified as having disabilities and unable to continue to work, their employer created new job positions. These jobs did not require the manual handling of patients; instead, workers were retrained to become nurse assistants working in other areas (Hecki and Oberholzer, 2008).

- **A worker on an assembly line with neck-shoulder-arm syndrome**

A worker who carried out overhead work at an assembly line developed a cervicobrachialgia — neck-shoulder-arm syndrome. He received physiotherapy and was then equipped with an exoskeleton for support (Fit2Work programme, Austria).

- **A mat, footwear and a stand-lean stool for a knee problem in an assembly line worker**

An assembly line worker with bursitis in his knee was limited in his ability to stand. His employer gave him a stand-lean stool, provided him with anti-fatigue matting and purchased vibration dampening shoe inserts (JAN, 2020c).

- **Gloves and large cushioned knobs for a machine operator**

A machine operator with arthritis had difficulty turning control switches. The small tabs were replaced with larger cushioned knobs and he was given gloves with non-slip dot gripping. These modifications enabled him to grasp and turn the knobs more effectively and with less force (JAN, 2020a).

- **Carpet fitter allowed to work alternate days**

A 58-year-old man found it hard to cope with his job as a carpet fitter, as it was heavy work, but was determined to carry on. He was self-employed, so he managed by working one day and resting the next, thus giving his inflamed joints time to recover (Healthtalk, 2019).

- **Task changes and simple equipment to assist a warehouse worker**

A labourer in a warehouse was having difficulty standing for long periods due to ankylosing spondylitis. As an accommodation, he was transferred to a position within the warehouse that allowed him flexibility to stand, walk and sit as he needed. The employer also purchased a heated cushion for his chair, gave him a stand-lean seat and provided him with a cart (JAN, 2020a).

- **Special knives for a butcher with carpal tunnel syndrome**

A butcher with carpal tunnel syndrome had limitations in grasping and handling tools and other objects, especially various sizes of knives. He was accommodated with a set of ergonomic knives (JAN, 2020b).

- **Accommodations for standing work for a meat trimmer**

A meat trimmer with arthritis had difficulty standing for long periods. He was provided with anti-fatigue matting and stand-lean stools, which enabled him to stand with a more supported posture (JAN, 2020a).

- **A portable kneeling device for a construction worker**

A veteran with a service-connected knee injury developed arthritis in the same knee and was having difficulty working at a kneeling height in his construction job. His employer purchased a kneeling device that was portable and worked on rough terrain (JAN, 2020a).

- **A tyre lift, a low task chair and a creeper to support a mechanic while accessing engine compartments**

A mechanic with a bending restriction due to a low back impairment has problems accessing the engine compartment and low task areas of vehicles. The mechanic was accommodated with a tyre lift, a mechanic's low task chair and a creeper specially designed to support the body while accessing engine compartments (JAN, 2018).

- **Reducing the size of loads by using small containers**

A volunteer at a food bank had a lifting restriction as a result of a back condition and had trouble moving heavy deliveries of donations to the sorting area. A supply of small containers was provided so that he could divide the deliveries into smaller amounts for moving to the sorting area (JAN, 2018).

- **Simple lifting aids for a meat inspector**

A meat processor with a back impairment had difficulty lifting materials from a storage area to his work area. The inspector was accommodated with a cart and lifts (JAN, 2018).

- **Lifting aids for moving computer equipment**

A systems administrator with a back impairment is required to move, lift and carry computers throughout the office. The person was accommodated with a compact, adjustable-height lifting device with straps to secure the load (JAN, 2018).

- **Ergonomics and task changes for a pottery worker with back pain leads to improvements for all workers**

A pottery worker (50 years old) suffered from lower back pain. He stopped working while waiting for physiotherapy. His manager contacted him every week and, through phone conversations, he encouraged the worker to chat in person. The manager referred the worker to a specialist in occupational health and the employer paid for physiotherapy on a private basis. Once physiotherapy had started, the worker returned to his working tasks for 4 hours each day. He was allowed to come to work later, after the rush hour, so he did not have to travel by car for a long time. The employer carried out an assessment to find out if there were any safety and health issues and how the worker's tasks could be adapted in the best way possible. After the assessment, the job tasks, such as carrying trays, were modified and if necessary other workers would carry trays for the worker with the lower back problem. However, the employer eventually solved the problem of carrying tasks with automation, by introducing a platform trolley. A new ergonomic chair was given to the worker and he was taught how to improve his posture. The example of helping this worker with lower back pain was the starting point for improving all workers' tasks, teaching them how to manage back pain and good postures (IOSH, 2015).

- **Accommodations and task changes to enable an ICT worker to manage knee osteoarthritis**

An ICT worker in his early 50s supports video conferencing. He has been diagnosed with moderate knee osteoarthritis and carrying heavy items can aggravate symptoms in the affected knee joint. Previously, his job involved a lot of carrying and kneeling when installing equipment. The organisation where he works carried out the required risk assessments. After a discussion with his line manager, and in an attempt to keep an expert worker, the need to change his job role to one that was office based was identified. Additional training was provided to the worker to enable him to work in a support role, managing clients' needs and training other staff. The additional support provided included a Bluetooth headset, to enable him to move around the office while on the telephone; arrangements enabling him to work at home when in excessive pain; and full DSE risk assessments, which were carried out in both the work and the home environments (EU-OSHA, 2020).

- **Maintaining the work ability of older workers in a beverage factory**

Measures taken by an alcoholic beverage production company to maintain the work ability of its workers, in particular older workers, include the following: where health issues are identified by occupational health services, the company accommodates the needs of the worker where possible, for example by offering flexible working hours or adjusting the work tasks to make sure that the situation improves (or at least does not deteriorate); alternative work tasks are sought in the same line of production first and then, if not available, in the rest of the enterprise (EU-OSHA, 2016f).

- **Mapping and rotating heavy tasks in car manufacturing**

Jobs and tasks in a car manufacturing plant are categorised as heavy, medium or light, according to the workload involved, to reduce risks. This enables the company to distribute tasks among employees according to their physical capacities. More light jobs have also been created by the reintegration of some outsourced activities, so that suitable tasks are available for workers with reduced capacity, particularly older workers. A physical skills manager is involved in making workplace adaptations where necessary. A system of rotating heavy, medium and light tasks has also been put in place for all workers (EU-OSHA, 2016g).

- **Lifting devices reduce risks to workers with work-related back injuries**

In a copper wire company, it was noted that several workers had back injuries due to manual tasks such as lifting, bending and twisting. The company decided to order lifting machines. The workers say that the changes have made the tasks much safer, easier and quicker, and this has reduced the risk of back injury.

7.4 Accommodations for other types of work

- **Flexible hours for a safety and health manager**

A safety and health manager was diagnosed with rheumatoid arthritis. When she was diagnosed, she had a good relationship with the senior management team. Nevertheless, after she began taking specific medication when she was feeling tired and ill, the management team did not seem so supportive, possibly because they could not understand the nature of the disorder. The safety and health manager had to work late to meet the requirements of the job, since during the day she felt very weak. The managers seemed to ignore her condition and did not care about her health. After some time, a new manager started and he was aware of MSDs. The new manager recognised that she was a valuable employee. He introduced flexitime and in some cases allowed her to work from home. Thanks to this flexible system, the safety and health manager could continue to work until her retirement (IOSH, 2017).

- **A flexible schedule for a hotel manager suffering back pain**

A hotel manager with a back condition was having problems working full days. She experienced pain after being on her feet for long periods of time. As a reasonable accommodation, the employment agency provided a flexible schedule. The employer reported that the accommodation was extremely effective, eliminating the need to train someone else to do the job and improving morale (JAN, 2018).

- **Reduced hours and a changed work pattern to help a physiotherapist with fatigue**

A physiotherapist informed her new employer about her condition after being offered the role. They referred her to occupational health and facilitated her working in conditions that were suitable. Because of fatigue from the condition, she requested a reduction in working hours. The employer, making it clear that they valued her and wanted her to stay, facilitated her working reduced hours and having a work pattern that gave her a week off every 7-8 weeks, working 42 weeks a year. This proved to be very important, as, coming up to each break week, her fatigue increased substantially, resulting in a flare-up. So her break weeks were vital for her to be able to continue working permanently and stay in the career she was trained for.

- **A surgeon's hip operation after coxarthroses**

After replacement of the hip and external rehabilitation, a return-to-work plan was developed for a surgeon. The number of hours worked in the operating theatre was reduced and a special bisected operation stool was provided. In addition, the surgeon did not operate for the whole working day, but was in charge of the medical follow-up in the recovery room, where he could change his working position as needed (Fit2Work programme, Austria).

- **A shop worker with chondromalacia assisted by simple accommodations and supportive colleagues**

A shop worker in her late 40s has been diagnosed with chondromalacia (a deterioration of cartilaginous material in the joints) in her wrists and knees. Her knee in particular is in an advanced state of deterioration and she has been receiving medical treatment and physiotherapy. The worker is employed full-time in a retail environment; she generally works the afternoon shift but is able to swap shifts with other workers, to enable her to attend medical appointments. The worker has a good relationship with her employer and colleagues and has been given a stool to sit on when no customers are present, as well as access to a rest room. Colleagues also help her to carry heavy items to prevent further knee deterioration. As a result of these changes, she has been able to maintain her full-time role and attend medical appointments when required, without taking time off work (EU-OSHA, 2020).

- **Job role changes and equipment accommodations for a police officer with multiple chronic MSDs**

A police officer in his early 50s has three types of chronic MSD: sciatica (where the sciatic nerve is irritated); costochondritis (inflammation of the cartilage between the ribs and the sternum); and finger pain. As a police officer, he was previously required to drive for long periods and was required to wear personal protective equipment (including a heavy anti-stab vest). After discussions with his line manager and an occupational health provider, he was moved to a new role. The role is office based and does not require him to wear PPE or drive. His office has been adapted by the installation of a sit-stand desk, enabling him to readily change his working posture as required. He has also been provided with an adapted mouse and keyboard. The worker also sought information himself on his various conditions and has increased his level of physical activity. Although he has moved away from his former colleagues and their support, his new role enables him to continue to work full-time (EU-OSHA, 2020).

- **Assistance during 'flare-ups' for a freelance photographer**

Some chronic MSDs such as rheumatoid arthritis present periodic episodes of pain. These episodes are usually unpredictable and can impact on the person's ability to work. A freelance photographer diagnosed with rheumatoid arthritis has had to deal with the unpredictability of her condition. In particular, she sometimes struggles with her camera equipment and is unable to lift it. At such times, her solution has been to pay for an assistant to help her carry her equipment (Arthritis Research UK, 2016).

Note: in some countries, such as Germany and Austria, a personal workplace assistant provides support to a disabled person.

- **Task changes for a postal worker**

A postal worker with gout could not continue doing his job, so managed to upgrade himself and change tasks. He now works as a specialist and his tasks do not involve deliveries but accounts, ordering, computer work and answering calls (Arthritis research UK, 2016).

- **Managing site visits and office work**

A conservation planning officer has osteoarthritis and also has a thyroid problem. Her job involves office meetings and site visits to building projects. She often feels very tired because of her conditions and her daily journey to work; even a short walk to the train results in considerable pain. The main challenge for her is the site visits, not only because of the transportation to and from the site, but also because most of the time she must be on her feet, climbing ladders and facing other difficult situations as a result of the building materials or location. She bought herself a light portable stool and she manages to sit whenever she visits a site. 'At first my employers thought I was taking the mick [taking advantage of the employer] with the amount of time I had off work after I was diagnosed with rheumatoid arthritis. I got my consultant and nurse specialist to write to my employer explaining my condition. My employer was pretty good after that. I also contacted Access to Work and got equipment to help me including voice-activated software for the computer. My employer also reduced my hours at my request in order to help with fatigue and pain' (Arthritis research UK, 2016).

- **A stool for site work**

An inspector of listed buildings obtained a stool for himself to enable him to sit when he was visiting a site. (Arthritis research UK, 2016)

- **A stand-lean stool for a library assistant**

A library assistant was limited in her ability to stand for long periods as a result of arthritis. To assist her when standing, the employer purchased a stand-lean stool (JAN, 2020a).

- **A motorised scooter for a plant manager**

A plant manager with arthritis was having difficulty moving throughout her plant to monitor assembly line workers. She was accommodated with a motorised scooter (JAN, 2020a).

- **A sit-lean stool and an anti-fatigue mat for a grocery check-out person**

A grocery check-out person had a standing restriction due to a back injury. He was accommodated with a sit-lean stool and anti-fatigue mats (JAN, 2018).

- **Carpeting, a stool and rest breaks to support a pharmacist with problems standing**

A pharmacist was having difficulties standing for 8 hours a day on a tiled floor. This employee was responsible for dispensing prescriptions for medication. The work area was carpeted using extra padding, which assisted in reducing fatigue, and a sit-lean stool was purchased to assist the employee when standing. The employee was also permitted to take frequent rest breaks throughout the day. This was possible, since the employee cut his lunch hour down to 30 minutes, which provided him with 30 minutes that could be used at other times of the day whenever a break was needed. In addition, another pharmacist was available to cover his breaks (JAN, 2020a).

- **Going freelance**

A corporate communications expert found that working as a consultant allows her to control her own hours and to work from home if she wishes. The expertise and contacts she gained when working for an employer enabled her to switch to freelance work (Peirce, 2018).

- **Running your own business and subcontracting when necessary**

Having her own small business allows one person with rheumatoid arthritis to control the pace of her own work and sub contract if she needs additional staff. She invested in two employees, who have worked for her for years. When she was first diagnosed she was already using equipment such as a wrist rest for typing and another for using the mouse." She sometimes uses elasticized hand gloves that leave her fingers free to type. While she has not been able to expand the business as much as she might have otherwise, she has control over the projects she takes on (Vann, 2018).

- **Training an assistant to provide support in professional occupations**

For example, a veterinarian can recruit and train a veterinary assistant capable of lifting heavy animals, performing certain procedures, and carrying out various tasks under their direction (Peirce, 2018).

7.5 Interventions for the whole workforce — health promotion and return-to-work initiatives

This section contains examples of interventions for the whole workforce or for a group of workers. Some concern promoting movement and health promotion at work and some concern early intervention through physiotherapy.

- **A warm-up programme for hairdressers**

A training programme was built around the concept of a 15-minute warm-up each day with a focus on appropriate postures for hairdressers. The programme was implemented to minimise the MSD risks among hairdressers (BITC, 2017).

- **A well-being hub and gym programme**

A company decided to introduce a gym programme and installed a well-being hub for protecting its employees from MSDs. This resulted in reductions in sedentary behaviour and absenteeism (BITC, 2017).

- **Physiotherapy referral for early intervention**

Under a municipal authority programme, managers can refer employees within 24 hours of them calling in sick, so that physiotherapists can assess their condition and begin treatment within 48 hours. The deputy leader of the authority said that 'Ensuring that we support employees by identifying the main causes of absenteeism in the workplace is imperative. There are rewards to be gained from investing in workplace health for staff and employers' (Employee Benefits, 2019).

- **On-site physiotherapy referral for early intervention**

A law firm in the United States decided to deal with the MSDs of its employees by introducing on-site physical therapy. The company saw a recovery of over USD 1 million in billable hours from attorneys who would have otherwise spent time out of the office travelling to physical therapy appointments. (Nobel et al., 2017).

- **Improved rehabilitation and back care measures**

A company implemented an enhanced programme for those returning to work after MSDs. The programme is based on active rehabilitation including orthopaedic consultations and musculoskeletal functional capacity assessments for problems, followed by physiotherapy. Moreover, it implemented a 1-day back care workshop followed by 6 weeks' gym membership for employees with chronic back pain. The company saw a 39 % reduction in back pain in the first 3 years of this programme.

- **Multidisciplinary approaches to limit sitting and promote movement and activity at work**

A company aiming to protect the overall health of its employees decided to train workers about good postures and encourage them to be more active. In parallel, a change of desks' positions in order to encourage employees to move and the introduction of eight sit-to-stand desks. The overall project was called Agile Working and beyond ergonomics involved a campaign and changes in the working space in order to encourage the employees to become more active, such as a water cooler machine, and break out areas at a distance from the working desks. Eight sit-stand desks were placed for those who already had an MSD and they were enabled to work by adopting different postures. Within a year this company has run several activities to protect their workers from suffering MSDs including stretching programmes, and agile workplace strategies like walking meetings. The changes were accepted positively and the culture has changed with the employees being more active at work (BITC, 2017).

- **Early Intervention and identifying improved ways of working in a construction company**

A family-owned construction company identified that its employees were suffering from musculoskeletal problems and that those in supervisory roles were suffering from occupational stress. The company developed an early intervention model for individuals identified as having poor work ability. This included vocational rehabilitation, including work trials for specific roles and retraining where relevant. Second, a safety data bank that collates improved ways of working was developed and shared using smartphones. With regard to stress, workers identified as having mental strain undertook a lifestyle assessment programme to help them recognise stress and give them advice on physical activity, nutrition and sleep. The outcomes of this were a reduction in lost time due to injuries and vocational retraining, resulting in a reduction in retirement costs within the business (EU-OSHA, 2017c).

- **Work-oriented rehabilitation in hairdressing**

In Finland, work-oriented medical rehabilitation courses helped hairdressers with a history of chronic neck and shoulder or back pain. The courses were part of a combined approach that included medical support and physiotherapy. The courses focused on changes in working techniques, subjective well-being, physical and muscular capacity, MSDs, perceived work ability and the redesign of workplaces/tools. In an evaluation of the courses, the hairdressers reported reductions in physical and mental strain, neck and shoulder and back pain and visits to the doctor due to MSDs after the rehabilitation course. They mentioned that the use of new working techniques, the frequent use of a chair, the use of exercise breaks, increased physical fitness and a new ability to relax during work were all helpful (ErgoHair, 2019, p. 31).

7.6 Interventions for the whole workforce — ergonomic interventions, work organisation improvements and task changes

While the focus of this report is on workplace accommodations for individuals, making work safer and easier for all workers can enable someone with reduced work ability to remain in work. This section contains a few examples of interventions to improve the working conditions of the whole workforce or for a group of workers. Some are examples of interventions that have been introduced to support an older workforce with reduced capacity to continue working. Some are ergonomic interventions in workplaces where a high level of MSDs has been identified.

7.6.1 Ergonomic solutions in a small tomato-growing company

A small tomato-growing company purchased new, sharper ergonomic cutters to cut off the tomatoes, allowing working with the wrist in a neutral position. Moreover, raised-height trolleys avoid the need to bend and allow workers to work in a standing position and in a sitting position when cutting and placing the tomatoes in the boxes on the trolley (EU-OSHA, 2010d).

- **Early intervention in a kindergarten**

Female workers in a small Danish kindergarten were suffering from many work-related MSD complaints. To prevent the loss of these older, experienced workers, the kindergarten implemented an intervention that included advice being provided to individuals experiencing problems by an occupational therapist, early access to physiotherapy at a reduced cost and ergonomic improvements to make work easier. The benefits of this were more sustainable working conditions, a reduction in MSDs and the retention of experience in the workplace (EU-OSHA, 2016h).

7.6.2 Innovative custom-made clothing for minimising harmful postures among caregivers

In a care home facility, many workers suffered from MSDs affecting the back and neck/shoulder region. In a pilot study, it was investigated whether innovative custom-made clothing could alleviate the discomfort and pain suffered by caregivers by enabling better postures and movements to be adopted while working. Caregivers spent significantly less time dressing care home residents in the custom-made clothing than the control group, so caregivers had to adopt harmful postures for a shorter time'. In addition, the clothing was easier and smoother in use and did not cause discomfort or pain in the patients. Some additional suggestions for optimising the clothing were given to the clothing manufacturer (unpublished consultancy advice: IDEWE, 2019).

- **Ergonomic workstations, work rotation and a change of tasks in a garment manufacturing company**

Workers in garment manufacturing company were suffering from high levels of MSDs due to long periods spent sitting in static positions and lifting and pulling heavy loads. Measures to tackle the problem included new adjustable seating; adjusting the pedals of the machines to suit the employee; replacing heavy trolleys by installing a mechanical system of rolling; and training employees in correct lifting methods and the use of the lifting devices. Other interventions included the rotation of tasks to reduce both physical and mental strain and moving older and more susceptible workers to lighter tasks, carrying out regular health surveillance to detect problems and creating a pleasant room within the canteen. The company saw a decrease in the number of MSDs reported, a decrease in absenteeism and improved productivity (EU-OSHA, 2000a).

- **Task rotation, working in pairs, training and other measures to reduce the load on cleaners**

Measures proposed to prevent MSDs in cleaners in the hotel sector include the following:

- Unaccompanied cleaning should be avoided to reduce the manoeuvring of heavy loads by one person.
- Cleaning should be integrated with other tasks that are not as high risk for the musculoskeletal system such as breakfast preparation and purchasing goods.
- A training programme should be implemented covering, for instance, ergonomics, cleaning methods, the quality of cleaning, ICT and other technologies.
- The maximum number of hotel rooms that a cleaner should clean should be limited. Working overtime should be compensated for by free time and not with extra pay.
- A sanitation specialist should be hired to deal with particularly dirty rooms.

- **Back health in a flooring company**

Laying carpet, laminate or other types of flooring is heavy work as is getting the materials from the warehouse. Technical improvements made by a flooring company to avoid manual lifting by workers included introducing a high-rack warehouse system for better storage of the heavy carpet rolls and a customised forklift truck with a metal pole for carpet lifting. Training was given in the use of the equipment and manual handling techniques, and workers were encouraged to help each other to lift and respect their individual lifting limits. The leader of the company keeps back exercises running,

ensuring that they are done jointly and frequently. Retraining is organised every year, to refresh memories and cover any newcomers (EU-OSHA, 2010c).

- **Measures to retain older workers in a small roofing company**

The following measures were implemented to retain older workers in a small roofing company: mobile lifting aids were provided; a sack barrow was made available to transport heavy items, even short distances; kneepads were provided for activities that needed to be carried out while kneeling; and basic office training was given, upskilling workers and allowing them to transfer to lighter work when necessary. This also provided support and replacement cover for the company owner (EU-OSHA, 2016i).

8 Conclusions

8.1 Conclusions for the workplace

The guidance and examples identified in this report and the linked report of case study examples (EU-OSHA, 2020) suggest that a variety of factors is involved in successfully managing individuals with chronic MSDs. These include the following:

- Maintain good safety and health standards and good ergonomics, whereby work is made easier, safer and healthier for the whole workforce, and promote health and well-being. Plan workplaces to make them more inclusive, with additional accommodations for individuals if and when necessary.
- Employers have a positive attitude and supportive policies in which they value their workers and their skills, seeing them as an asset, not a problem. A positive attitude from colleagues is also important.
- Workers do not need to be 100 % fit to work and the focus should be on workers' capabilities, not disabilities.
- Intervene early once health problems arise, with the focus on keeping workers in work rather than getting them back to work once they have left employment.
- Maintain good communication between the worker and the organisation, whereby the employee feels able to raise problems and discuss their needs, including involving their trade union or safety representative, if there is one, regarding measures and arrangements.
- Develop knowledge among human resources personnel, supervisors and managers of the worker's health condition, and develop knowledge and sufficient skills in the workplace to support continued working or return to work.
- In individual cases, use a range of measures such as:
    - adjusting working hours such as by providing a temporary or permanent reduction in hours, time off for medical appointments, varying start or finish times and flexitime (applied to the whole workforce);
    - teleworking;
    - providing simple equipment, e.g. to make sitting more comfortable, reduce standing or make computer work more comfortable and avoid static postures;
    - facilitating breaks to move and stretch and take rest breaks;
    - providing more individual control over how tasks are done, or rotating more physically tiring or repetitive tasks;
    - providing a parking space near the entrance;
    - allowing a gradual return to work where there has been sick leave.
- And
    - allow enough time for the process, testing measures in practice to find out what works best and reviewing arrangements.
- Put teleworking and flexible working hours policies in place for the whole workforce.
- Integrate measures to facilitate return to work and support workers with health problems into broader company policies — because some accommodations to support an individual may benefit all employees, and improved workplace ergonomics for all the workforce may reduce the duration of sickness absence and facilitate continued working or return to work.

8.2 Policy pointers for external services and policy-makers

Based on this report and other research by EU-OSHA on return to work and working with chronic diseases (see EU-OSHA, 2018a, 2021), the following broader policy pointers are suggested:

1. Focus on making work sustainable across the course of working life, with improved support for small businesses to prevent occupational risks and promote health and well-being at work.
2. Direct policy towards achieving inclusive workplaces through universal design, including through the provision of support to workplaces.

3. Intervene early once health problems arise, with more focus on staying in work rather than returning to the workforce once out of employment.
4. Encourage health professionals and employers to focus on workers' capabilities, not their disabilities.
5. Make return to work the goal for all involved, including as a clinical outcome or treatment goal for health practitioners. Encourage health practitioners and offer training in this respect.
6. Tailor plans for returning to or remaining in work to each individual and base them on assessment.
7. Provide access to external support, in particular for small businesses, in the form of suitable services and programmes for the employer and the individual on the return-to-work process, individual return-to-work plans and workplace adjustments.
8. Provide multidisciplinary support programmes covering public health, social services and employment services, and provide coordinated support, including financial and technical support, to companies and their employees seeking to return to work. Individuals need access to a range of appropriate healthcare treatments and therapies; in addition, individuals who are afraid or pessimistic about returning to work need return-to-work coaching.
9. Improve access to occupational health services for both employers and employees to allow early detection and prevention. This is particularly important for small businesses and 'atypical workers'.
10. Avoid silo working through joined-up policies, interventions and budgets.
11. More generally, put greater public health focus on non-life-threatening chronic diseases including MSDs as well as on prevention and early intervention measures. Develop and support early intervention healthcare programmes for MSDs.
12. Assess and address any gender biases, e.g. in access to services or barriers to continued working in the workplace.

8.3 Overall conclusion

With the right employer attitudes and workplace adjustments, combined with support from public health systems as well as social and employment services, many with chronic conditions can continue working. Even where external support is not available, there are many simple measures that can be taken to support a worker with a chronic musculoskeletal condition to continue working, and good communication between worker and employer are key to getting the solutions right.

- Working with a condition is possible.
- Fluent communication between the parties is crucial.
- Measures taken are **always** a profitable investment.
- What is good for someone with a chronic condition will be good for everyone.

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10 Abbreviations

ARMA	Arthritis and Musculoskeletal Alliance
BITC	Business in the Community
DSE	display screen equipment
EU-OSHA	European Agency for Safety and Health at Work
EULAR	European League Against Rheumatism
ENWHP	European Network for Workplace Health Promotion
FEDRIS	Federal Agency for Occupational Risks
GP	general practitioner
HSENI	Health and Safety Executive Northern Ireland
ICT	information and communications technology
IOM	Institute of Occupational Medicine
JAN	Job Accommodation Network
MSD	musculoskeletal disorder
NRAS	National Rheumatoid Arthritis Society
OSH	occupational safety and health
PPE	personal protective equipment
RA	rheumatoid arthritis
RMDs	rheumatic and musculoskeletal disorders
SMEs	small and medium-sized enterprises
US OSHA	US Occupational Safety and Health Administration
VRS	voice recognition system
WRULD	work-related upper limb disorder

Appendix 1 Methodology

A number of approaches was taken in the project to identify information on chronic MSDs, data, guidelines on supporting people at work with chronic MSDs and examples of workplace adjustments made to enable retention at work.

Previous EU-OSHA products were identified, specifically those with relevance to chronic MSDs. Furthermore, research papers were collated that examined the prevalence of chronic MSDs, nationally and internationally. Previous EU-OSHA campaigns were also searched, including Healthy Workplaces Good Practice Awards, to identify relevant interventions.

However, the focus of the searches was on workplace accommodations and adjustments that had been made to allow individuals with chronic MSDs to stay at work. These were identified through grey literature searches, website searches and some scientific literature.

The searches performed are summarised as follows:

1. past EU-OSHA-related projects;
2. statistics regarding MSDs and chronic MSDs from Eurostat and the scientific literature;
3. work accommodations described in the scientific literature, grey literature, EU-OSHA campaigns and good practice awards:
    a. grey literature from reliable sources: government documents, documents from OSH organisations, public health organisations, organisations missioned to support people with arthritis, rheumatism and related conditions, guidance reports from scientific and academic groups, and reports and guidance from employers and trade unions;
    b. EU-OSHA-related campaigns since 2000;
    c. EU-OSHA good practice awards;
    d. other national non-EU guidance, US OSHA, Safe Work Australia;
    e. guidance from other international OSH bodies (ILO, WHO);
4. Examples of staying at work with chronic conditions and pain:
    a. grey literature and associations that support people with chronic MSDs including EU non-English websites;
    b. examples from IOM and IDEWE consultancy cases;
    c. critical evaluation and collation of the examples identified;
    d. comparative analysis of the guidance and examples identified;
5. Critical evaluation and guidance from invited academics with expertise in MSDs and work

A list of searches is given below:

List of searches, information in English	
ARMA (Arthritis and Musculoskeletal Alliance)	http://arma.uk.net/musculoskeletal-disorders-msk/
Arthritis Action	https://www.arthritisaction.org.uk/living-with-arthritis/personal-stories/
Arthritis Foundation	https://www.arthritis.org/toolkits/better-living/about/rheumatoid-arthritis/patient-stories.php
AQDC (Association québécoise de la douleur chronique — Quebec Association for Chronic Pain)	https://douleurchronique.org/management-of-chronic-pain/managing-pain-at-work/?lang=en
BackCare	http://backcare.org.uk/i-have-back-or-neck-pain/back-pain-work/

List of searches, information in English	
BAuA (Bundesanstalt für Arbeitsschutz und Arbeitsmedizin — Federal Institute for Occupational Safety and Health)	https://www.baua.de/EN/Topics/Work-and-health/Musculoskeletal-disorders/_functions/Publications-search_Formular.html?nn=8710686 https://www.baua.de/EN/Service/Publications/Essays/article1689.html https://www.baua.de/EN/Service/Publications/Essays/article1446.html
BBC	https://www.bbc.co.uk/news/health-39043187
Belgium Federal Knowledge Centre for Health Care	https://kce.fgov.be/sites/default/files/atoms/files/d20061027371.pdf
Business in the Community	https://www.bitc.org.uk/toolkit/musculoskeletal-health-toolkit-for-employers/
Canadian Centre of Occupational Health and Safety, Government of Canada	https://www.ccohs.ca/oshanswers/psychosocial/musculoskeletal.html
Centre for Excellence in Universal Design	http://universaldesign.ie/What-is-Universal-Design/
Design for All Foundation	http://designforall.org/design.php
DO-IT Centre (Disabilities, Opportunities, Internetworking, and Technology Center)	https://www.washington.edu/doit/universal-design-process-principles-and-applications
Employee Benefits	https://www.employeebenefits.co.uk/issues/january-2016-2/how-the-physical-workplace-can-help-manage-musculoskeletal-disorders/
EU-OSHA (European Agency for Safety and Health at Work)	https://osha.europa.eu/en
Everyday Health	https://www.everydayhealth.com/
Fit for Work Europe	www.fitforworkeurope.eu
Fit for Work (blog)	https://fitforwork.org/blog/
Health	https://www.health.com/health/gallery/0,,20654489,00.html?slide=100236#100236
Healthline	https://www.healthline.com/health/ra-stories
HSE (Health and Safety Executive)	https://www.hse.gov.uk/
HSENI (Health and Safety Executive Northern Ireland)	https://www.hseni.gov.uk/publications/guidance-prevention-and-management-msds-workplace

List of searches, information in English	
IOSH (Institute of Occupational Safety and Health)	https://www.ioshmagazine.com/article/working-through-arthritis
JAN (Job Association Network)	https://askjan.org/
KTA University (company)	https://ktauniversity.com/preventing-musculoskeletal-disorders/
Lydia Osteoporosis Project	http://www.lydiaosteoporosis.com/
NRAS (National Rheumatoid Arthritis Society)	https://www.nras.org.uk/stories
North Carolina State University	https://projects.ncsu.edu/ncsu/design/cud/about_ud/docs/use_guidelines.pdf
OSHA (US Occupational Safety and Health Administration)	https://www.osha.gov/
Public Health England	https://fingertips.phe.org.uk/profile/msk/supporting-information/evidence-and-resources
Personnel Today	https://www.personneltoday.com/hr/musculoskeletal-disorders-in-the-workplace-the-role-of-hr-and-line-managers/ https://www.personneltoday.com/hr/return-work-musculoskeletal-disorders-multi-disciplinary-approach/
RA Guy	http://www.rheumatoidarthritisguy.com/category/profiles/
Safe Work Australia	https://www.safeworkaustralia.gov.au/
University of Western Ontario	https://www.uwo.ca/hr/form_doc/health_safety/doc/ergo/msd_prevention_standard_workbook.pdf
Versus Arthritis (Arthritis Care UK/Arthritis Research)	https://www.versusarthritis.org/ https://www.versusarthritis.org/about-arthritis/data-and-statistics/state-of-musculoskeletal-health-2019/ https://www.versusarthritis.org/about-arthritis/living-with-arthritis/work/
WebMD	https://www.webmd.com/rheumatoid-arthritis/default.htm
WHO (World Health Organisation)	https://www.who.int/
Work Foundation	www.theworkfoundation.com http://www.bollettinoadapt.it/old/files/document/3704FOUNDATION_19_10.pdf
Work Safe New Zealand	https://worksafe.govt.nz/
List of searches, information in languages other than English	
Artrite Reumatoide	https://www.artritereumatoide.it/*p*/Io-e-il-mio-lavoro

List of searches, information in English	
BAuA (Bundesanstalt für Arbeitsschutz und Arbeitsmedizin)	https://www.baua.de/DE/Home/Home_node.html
Centre Fédéral d'Expertise des Soins de Santé	https://kce.fgov.be/
Fondazione Veronesi	https://www.fondazioneveronesi.it/magazine/tools-della-salute/glossario-delle-malattie/artrite-reumatoide
Hellenic Ministry of Labour, Social Insurance and Social Solidarity	https://www.ypakp.gr/
INRS (Institut national de recherche et de sécurité, Santé et sécurité au travail)	http://www.inrs.fr/inrs/identite.html
Medicina di Lavoro	http://www.mattioli1885journals.com/index.php/lamedicinadellavoro/article/view/66399
Ministero di Lavoro e di Politiche Sociali	https://www.lavoro.gov.it/Pagine/default.aspx

Appendix 2 List of inclusive practices for people with arthritis

Making accommodations focuses on the individual and their specific needs. Inclusivity focuses on all workers. The feasibility of implementing measures to make a workplace more inclusive depends on legal requirements, the size, location and type of work of an organisation, and its capacity to make changes. As it may be difficult to implement all accommodations at once, workplaces can begin with one or two as a starting point. The Arthritis Society Canada (2019) has set out a list of inclusive practices that can help make an organisation more accessible overall for workers with arthritis (some items specific to the Canadian situation have been adapted or deleted). The list includes practices that can help make an organisation more accessible overall and measures for accommodating individual workers on a case-by-case basis.

Small businesses: some of the items would be beyond the scope of smaller businesses, such as the provision of employee benefits or gym membership, and some of the policies. However, many of the measures are relatively cheap and simple, such as some of the physical accessibility measures and ergonomic measures, and there may be some scope for teleworking and flexible working hours. Good communication is cost free as are stretching breaks, and it may be possible to provide facilities for bike parking, for example.

- **Inclusive practices**

A physically accessible workplace: this involves the design of spaces to make it easy for people with disabilities to navigate their work environment. This could include:

- accessible parking spaces
- automatic door openers
- easy-grip lever handles
- elevators
- ramps
- accessible unisex washrooms
- bathroom stalls that are large enough for a mobility scooter
- raised toilet seats
- grab bars in bathrooms
- railings
- relocating an employee's workstation closer to a parking space, rest room, office equipment, or other location.

An ergonomic workplace: ergonomics investigates the interaction between people and their environments. The goal of ergonomics is to ensure that a workstation and the work environment best fit the employee in their role. This can be achieved through use of:

- ergonomic assessments
- adjustable chairs
- sit-stand workstations
- accessible workstations
- alternative computer equipment (e.g. keyboard, mouse, monitor)
- chairs with head support
- ergonomic tools such as autodialers, document/book holders, door knob grips, ergonomic scissors, grip aids and telephone headsets
- modified control equipment
- stand-lean stools
- speech recognition software
- lifting aids for heavy materials.

Scheduling flexibility: this provides an alternative to the regular schedule of a role and allows an employee to vary their days of work and/or arrival or departure times within agreed upon parameters. This could include:

- Flexitime: changing or varying normal working hours or work days to accommodate fatigue or medical appointments, allowing for evening or weekend work if needed.
- Compressed working week: increasing the number of hours in each work day but decreasing the number of work days in a week.
- Job sharing: sharing the responsibilities, hours and salary of at least one full-time job between two employees.
- Alternative location: working from home or another location for all or a portion of the working week.
- More frequent breaks: taking shorter, more frequent breaks rather than one longer break.

Employee education: this involves providing employees with the information and resources to better understand arthritis, to reduce strain on joints at work, to maintain a healthy lifestyle and to self-manage arthritis symptoms. This could include:

- providing information related to arthritis, health and wellness through employee communication channels such as an intranet site, newsletter or email;
- enabling online learning about joint health at work and/or arthritis self-management;
- raising awareness of existing policies on workplace accommodations and the accommodation process;
- providing training on how to protect joints while sitting, standing, lifting or driving;
- ensuring that employees understand the benefits plans and options available to them.

Employee benefits: providing employees with a benefits plan and offering extended benefits can make a big difference to employees with arthritis and enable them to thrive. Some of the benefits may include:

- health insurance
- physiotherapy or occupational therapy
- counselling or access to an employee assistance programme
- massage therapy
- enhanced short-term and long-term disability leave
- enhanced sick leave and time off for appointments.

Policies and practices: organisational policies and practices that account for the needs of employees with chronic health conditions such as arthritis can help maximise employee productivity. These could include:

- accessibility and accommodation policies
- diversity, equality and inclusion policies
- leave of absence policies
- absenteeism policies
- accessible and inclusive recruitment and hiring practices
- return-to-work practices to support employees who have been away on leave.

Accommodation processes: developing a clear accommodation process and working collaboratively with employees to determine appropriate accommodations creates a win-win situation for everyone. These processes could include:

- communicating to employees about existing accommodation policies and processes;
- making job candidates aware of accommodations available throughout the hiring process;
- supporting employees to disclose a disability and request accommodations;
- working with an employee to develop an accommodation plan;
- managing changes within a team/department, such as modified duties or scheduling;

- monitoring, assessing and revising accommodations as needed.

Health and wellness promotion: a large part of managing arthritis symptoms involves maintaining a healthy lifestyle and diet. Support that promotes overall health and wellness can greatly benefit a person living with arthritis. Such support might include:

- on-site gym facilities or a discounted gym membership
- stretch breaks
- a stationary bike in a break room or pedal workstations
- sit-stand desks
- on-site showers
- bike parking
- a health spending account
- access to healthy food options at work or in the vicinity.

Source: Adapted from Arthritis Society Canada, 2019 (sources cited: The Canadian Arthritis Patient Alliance (CAPA), 'Arthritis in the Workplace: Resources for Patients by Patients'; Episodic Disabilities Employment Network, 'EDEN Fact Sheets'; Joint Health Network, 'Canada's Best Workplaces for Employees Living with Arthritis Program'; JAN, 'Accommodating Employees with Arthritis')

Appendix 3 Chrodis Plus 08 — chronic diseases and employment workbox

Chrodis Plus is an initiative funded by the European Commission and participating organisations. Its actions contribute to reducing the burden of chronic diseases in the EU. One of the projects is funded under the action focused on employment and chronic diseases (Work Package 8). It developed a Chrodis Plus workbox for the employment sector: a tool to support health promotion and disease prevention as well as maintenance of and return to work. The workbox is directed at managers from businesses of all sizes. It consist of two parts — a training tool for managers and a toolkit for workplaces (Chrodis Plus, 2020).

- **The Chrodis Plus training tool on inclusiveness and workability.**

The aim of the training tool is to help managers of organisations of all sizes to understand the benefits of the inclusion of all workers and the good management of people with or at risk of chronic diseases in the workplace. Managers will learn how to measure and increase inclusiveness and the work ability of people with chronic diseases in enterprises. It focuses on human functioning, personal capabilities and chronic diseases commonalities, as well as ensuring that the work environment is a facilitator and not a barrier, with the goal of creating inclusive workplaces.

The training tool is composed of three sections and an appendix that includes information on the most frequent chronic diseases:

- Assessing the organisation — this provides insight into how to measure a company's inclusiveness and includes a checklist on environmental inclusiveness.
- Assessing an employee's work ability — this covers how to evaluate whether or not an employee is able to work in the present and the future and includes a work ability index (WAI) tool.
- Supporting employees with chronic conditions — this includes tips for managers in terms of maintenance, return to work and reasonable accommodations.
- The appendix contains case vignettes of some of the most common chronic diseases, providing a brief description of the disease, symptoms, treatment, workplace impact and suggestions for work participation. It includes one on back pain and another on multiple sclerosis.

- **The Chrodis Plus toolkit for workplaces — fostering employees' well-being, health and work participation.**

This contains resources that can be used both as checklists and to generate ideas for concrete and feasible actions that could be implemented in an organisation. It covers seven domains: ergonomics; mental health and well-being; recovery from work; nutrition; smoking cessation; reduction in alcohol consumption; and community spirit and atmosphere. It tackles each area with four approaches: strengthening knowledge and skills; creating a supportive working environment; adopting well-being fostering policies; and incentivisation. The concrete means for each domain cover: knowledge and skills; working environment; policies; and incentives.

The Chrodis Plus Workbox chronic diseases and employment training tool and toolkit are available in various languages at: http://chrodis.eu/08-chronic-diseases-and-employment/

Checklist on environmental inclusiveness.

An example of a resource in the training toolkit is the checklist on environmental inclusiveness, which includes a series of yes/no questions and a system for scoring and interpreting the results.

1. Work environment and enterprise: does your organisation:

… promote inclusiveness and accessibility to all employees?

… give permission for sickness absence?

… comply with the rules laid down by contracts and guidelines?

… make employees feel protected for their rights?

… protect employees' health from physical and psychological breakdowns?

… guarantee banning of discrimination in work environment?
… guarantee a safe work environment?
… promote professional orientation?
… promote stay-at-work programmes?
… promote return-to-work programmes?

2. Reasonable accommodation: does your organisation:

… ensure flexitime?
… ensure smart working?
… make the workplace accessible by reducing physical barriers?
… adapt workstation by providing ergonomic solutions?
… adapt work tasks?
… provide new technologies for improving work performance?
… ensure accessibility in the common parts of work environment (i.e. canteen)?
… consent to the regulation of natural and artificial light in the working environment?
… ensure an adequate climate in the working environment (i.e. air quality)?
… consent to reduce environmental noise as much as possible?

3. Management and leadership: does your organisation:

… promote cohesion and collaboration between management level and frontline staff?
… use clear communication strategies with employees?
… support good leadership skills?
… guarantee a clear management appraisal system of the organisation?
… encourage coordination and collaboration between departments?
… guarantee equity in access of resources (i.e. economical, technological…)?
… guarantee possibility of career development for all employees?
… guarantee inclusion of employees in decisions involving them?
… guarantee equity in the distribution of incentives?
… protect health and security of all the employees?

4. Teamwork and leadership: does your organisation

… promote team cohesion and make sure nobody feels isolated?
… guarantee support from colleagues in cases of difficulties?
… give employees the possibility to express their needs?
… give employees the possibility to express their ideas and point of view?
… guarantee a workload balance in the teamwork?
… promote the use of individual skills in order to achieve common goals?
… reduce stigma and discrimination between colleagues?
… guarantee respect for the rules?
… give the possibility of career growth?
… guarantee respect for all types of needs between colleagues?

- **Example of a case vignette from the training tool — back pain**

The case of Pedro who suffers from back pain: Pedro (57 years old) is a factory worker; his work involves standing for several hours a day and always repeating the same movements, sometimes lifting heavy objects. Recently, he has developed back pain and he realises that the movements he carries out at work worsen his condition. Pedro thinks that he will not be able to go on in this way for long and would like to talk to his manager to ask him if he could have mechanical or human help, or a change of job. He is afraid to go and ask, as the company has been affected by the recession and might not be able to find a new position for him; however, he cannot cope with the pain and is taking many painkillers to no real effect. He does not know with whom to share his concerns, as he is worried that he might be

made redundant as a result and also because of his age, but he needs to continue working to support his family.

What is it?

Back pain is characterised by the presence of pain felt in the lower or upper back. About 80 % of adults experience back pain at some point in their lifetimes. Back pain can result from injury, improper physical activity and medical conditions, and usually derives from a problem with one or more parts of the back (e.g. ligaments, muscles, nerves, spine, disks or vertebrae). Back pain can affect people of any age or gender, for different reasons. Some conditions and factors are linked to back pain or might lead to a greater risk of developing the disease:

- As people get older, starting around 30 or 40, the chance of developing low back pain increases.
- Women have a higher chance of developing lower back pain than men.
- Inactivity and unhealthy lifestyles, including smoking, poor eating and drinking habits, and lack of exercise, all contribute.
- Back pain is characterised by the presence of widespread pain.
- Skeletal irregularities, arthritis, osteoporosis, bulging or ruptured disks are all causes.
- Back pain can also result from improper lifting, muscle or ligament strain, or backpack overload.

Symptoms

Signs and symptoms of back pain can include:

- muscle pain
- a dull aching sensation
- shooting or stabbing pain
- pain that radiates down the leg (sciatica or irritation of the sciatic nerve)
- pain that worsens with bending, lifting, standing, walking or sleeping (morning stiffness is a very common problem with back pain)
- pain that improves with reclining
- reductions in flexibility and mobility.

Pain can affect the upper back but, more frequently, affects the lower back. Acute back pain is the most common presentation and is usually self-limiting: it is brought on suddenly and lasts less than 3 months regardless of treatment.

The majority of acute lower back pain is traumatic and mechanical in nature, caused by a fall or heavy lifting. Chronic back pain is a more difficult problem to solve, which often causes significant psychological and social issues, such as work dissatisfaction, boredom and a generous compensation system. Few cases of chronic back pain are due to specific factors; most cases are idiopathic and non-specific.

Treatment

It is generally possible to take preventive measures to avoid or relieve most back pain episodes by improving one's physical condition, and learning and practising proper body mechanics. The following are good practices, but only when done under the supervision of a trained coach (physiotherapist):

- Exercise: regular low-impact aerobics activities such as walking and swimming.
- Building muscle strength and flexibility: abdominal and back muscle exercises.

Maintaining a healthy weight also plays an important role. If prevention fails, simple home treatment and self-care will often heal the back within a few weeks. If pain does not improve in that time, a medical examination is recommended to verify and exclude other conditions, as back pain may signal a serious medical problem. Adequate back pain treatment must include different levels, according to a biopsychosocial model. Typical treatments for back pain include:

- Home remedies: these could include hot compresses or cold packs, activity and physical exercise to improve posture and strengthen core muscles, and self-management.
- Medication: useful medications include analgesic and anti-inflammatories, cortisone steroid injections and antidepressants.

- Complementary therapies: these include massage, chiropractic adjustments and physiotherapy, yoga and relaxation techniques, acupuncture, ultrasound or electrical stimulation (TENS), biofeedback and cognitive behavioural therapy.

Psychosocial issues and the impact of the disease on employment

Back pain is one of the most common reasons for people to go to the doctor or miss work, and it is a leading cause of disability worldwide. It can be uncomfortable and debilitating, making it hard to concentrate on a job, thus it often leads to absenteeism and presenteeism and interferes with quality of life. Some causes of back pain may be related to the workplace. A number of factors can contribute to back pain at work, depending on what the job entails. For example, the following could be factors:

- Force: exerting too much force on the back, for example by lifting or moving heavy objects, can cause injury.
- Repetition: repeating certain movements, especially those that involve twisting or rotating the spine, can injure the back.
- Inactivity: an inactive job or a desk job can contribute to back pain, especially for people who have poor posture or sit all day in a chair with inadequate back support.

To manage workers with back pain and help them continue working or return to work, employers can promote some interventions.

Interventions to prevent or reduce back pain should be a priority for employers; it is their responsibility to ensure a safe and healthy work environment. Interventions may be applied in the workplace at different levels:

- Raise awareness: this could be done, for example, by providing guidelines for employees about how to prevent back pain in everyday life.
- Promote prevention: this could involve, for instance, the promotion of good practices, such as maintaining a healthy weight, keeping active and taking part in physical exercise.
- Provide reasonable accommodations: these will depend on the specific features of the back pain and the job. If a person has **mobility problems** and walking is painful, the employer might provide accommodations such as moving the workspace closer to important areas that the employee needs to use. If the job involves **force or repetition** and requires moving heavy items, the employer should provide mechanical or human help, or space rearrangement. If the employee has **problems sitting or standing** and must sit at a desk all day, the employer could provide an ergonomics consultant and specially designed furniture to make the workspace more comfortable. If the job requires standing, the employer may provide a stool or something to lean on, floor mats aimed at reducing fatigue and other similar equipment.

Appendix 4 Selected EU-OSHA resources and reports

Database of practical tools and guidance on MSDs

https://osha.europa.eu/en/themes/musculoskeletal-disorders/practical-tools-musculoskeletal-disorders

This database contains links to resources on MSDs on other websites, including links relevant to working with chronic MSDs, as well as links to all of EU-OSHA's own resources.

Good practices and advice on preventing and managing MSDs

- **Health and safety at work is everybody's business — Practical guidance for employers (2016)**

https://osha.europa.eu/en/legislation/guidelines/health-and-safety-work-everybodys-business-practical-guidance-employers

This guide provides practical advice on the prevention and management of work-related MSDs and stress.

- **Supporting musculoskeletal health in the workplace (2020)**

https://osha.europa.eu/en/publications/supporting-musculoskeletal-health-workplace/view

This info sheet provides a brief introduction to work-related MSDs and their prevention.

- **Introduction to work-related musculoskeletal disorders — Factsheet 71 (2007)**

https://osha.europa.eu/en/tools-and-publications/publications/factsheets/71/view

This factsheet outlines an integrated management approach to MSDs, which considers the prevention of new disorders, and the retention, rehabilitation and reintegration of those who already suffer from MSDs. It is available in various languages.

- **Work-related neck and upper limb disorders — Factsheet 72 (2007)**

This factsheet provides simple advice on preventing work-related upper limb disorders.

https://osha.europa.eu/en/publications/factsheet-72-work-related-neck-and-upper-limb-disorders/view

- **Hazards and risks associated with manual handling of loads in the workplace — Factsheet 73 (2007)**

https://osha.europa.eu/en/publications/factsheet-73-hazards-and-risks-associated-manual-handling-loads-workplace/view

This factsheet provides simple advice on preventing risks from manual handling in the workplace. It is available in various languages.

- **E-fact 45 — Checklist for preventing bad working postures (2008)**

https://osha.europa.eu/en/tools-and-publications/publications/e-facts/efact45/view

- **E-fact 44 — Checklist for the prevention of manual handling risks (2008)**

https://osha.europa.eu/en/tools-and-publications/publications/e-facts/efact44/view

- **E-fact 43 — Checklist for preventing WRULDs (2008)**

https://osha.europa.eu/en/tools-and-publications/publications/e-facts/efact43/view

- **E-fact 42 — Checklist for the prevention of lower limb disorders (2008)**

http://osha.europa.eu/en/publications/e-facts/en_efact42.pdf/view

- **Practical tips to make home-based telework as healthy, safe and effective as possible — OSHwiki article (2020)**

https://oshwiki.eu/wiki/Practical_tips_to_make_home-based_telework_as_healthy,_safe_and_effective_as_possible

- **Risk factors for musculoskeletal disorders — working postures — OSHwiki article (2020)**

https://oshwiki.eu/wiki/Risk_factors_for_musculoskeletal_disorders_%E2%80%94_working_postures

- **Avoiding prolonged static sitting — OSHwiki article (2020)**

https://oshwiki.eu/wiki/Musculoskeletal_disorders_and_prolonged_static_standing

- **Promoting exercise at work — OSHwiki article (2020)**

https://oshwiki.eu/wiki/Promoting_moving_and_exercise_at_work_to_avoid_prolonged_standing_and_sitting

- **Workforce diversity and risk assessment: ensuring everyone is covered — Summary of an Agency report — Factsheet 87 (2010)**

https://osha.europa.eu/en/tools-and-publications/publications/factsheets/87/view

This factsheet includes a simple checklist for including diversity in risk assessment. It has been translated into various languages.

- **Ensuring the health and safety of workers with disabilities — Factsheet 53 (2004)**

https://osha.europa.eu/en/publications/factsheet-53-ensuring-health-and-safety-workers-disabilities/view

This factsheet provides practical advice on risk assessment and tips for providing reasonable accommodations and a safe workplace for disabled workers. It has been translated into various languages.

- **Body and hazard mapping in the prevention of musculoskeletal disorders (MSDs) (2020)**

https://osha.europa.eu/en/publications/body-and-hazard-mapping-prevention-musculoskeletal-disorders-msds/view

This info sheet provides an overview of body and hazard mapping techniques and highlights their value in identifying and preventing work-related MSDs.

- **Musculoskeletal disorders**

https://osha.europa.eu/en/themes/musculoskeletal-disorders

EU-OSHA's thematic web page on MSDs.

- **Research on work-related MSDs**

https://osha.europa.eu/en/themes//musculoskeletal-disorders/research-work-related-msds

This page provides the results of the 2018-2020 EU-OSHA research project on MSDs.

- **Healthy Workplaces Campaigns**

https://osha.europa.eu/en/healthy-workplaces-campaigns

This web page links to EU-OSHA's 2020-2022 campaign on MSDs.

Examples of workplace interventions to prevent MSDs and manage chronic MSDs

- **Eight case studies detailing support for continued working for individuals with a chronic MSD**

1. Shop worker with chondromalacia assisted by simple accommodations and supportive colleagues

https://osha.europa.eu/en/publications/shop-worker-chondromalacia-assisted-simple-accommodations-and-supportive-colleagues

2. Accommodations and task changes to enable an ICT worker to manage knee osteoarthritis

https://osha.europa.eu/en/publications/accommodations-and-task-changes-enable-ict-worker-manage-knee-osteoarthritis

3. Accommodations and self-managing osteoporosis for a university lecturer

https://osha.europa.eu/en/publications/accommodations-and-self-managing-osteoporosis-university-lecturer

4. Return to reception work after bone fractures due to osteopenia

https://osha.europa.eu/en/publications/return-reception-work-after-bone-fractures-due-osteopenia

5. Task changes for a podiatrist with neck problems

https://osha.europa.eu/en/publications/task-changes-podiatrist-neck-problems

6. Job role changes and equipment accommodations for a police officer with multiple chronic MSDs

https://osha.europa.eu/en/publications/job-role-changes-and-equipment-accommodations-police-officer-multiple-chronic-msds

7. Early intervention and accommodations for upper limb problems — research and data entry work

https://osha.europa.eu/en/publications/early-intervention-and-accommodations-upper-limb-problems-research-and-data-entry-work

8. Workplace stretching and other accommodations to enable return to work after a back problem — public administration

https://osha.europa.eu/en/publications/workplace-stretching-and-other-accommodations-enable-return-work-after-back-problem

- **Preventing musculoskeletal disorders in practice (2000)**

https://osha.europa.eu/en/publications/preventing-musculoskeletal-disorders-practice/view

Examples of good practice interventions to prevent and mange MSDs.

- **Prevention of work-related musculoskeletal disorders in practice (2008)**

https://osha.europa.eu/en/publications/report-prevention-work-related-musculoskeletal-disorders-practice/view

This report contains good practice case studies on preventing and managing work-related MSDs.

- **Work related musculoskeletal disorders: prevention report (2008)**

https://osha.europa.eu/en/publications/reports/en_TE8107132ENC.pdf/view

This report covers research and good practice and includes several examples of interventions to prevent and manage MSDs.

- **OSH in figures: work-related musculoskeletal disorders in the EU — facts and figures (2010)**

https://ec.europa.eu/eip/ageing/library/osh-figureswork-related-musculoskeletal-disorders-eu-facts-and-figures_en

This report mainly addresses the extent and causes of MSDs in the EU Member States. It also includes some examples of good practices, both from the workplace and from external programmes and initiatives, covering both prevention and rehabilitation.

Reports and advice on return to work

- **Working with rheumatic and musculoskeletal diseases (RMDs) — OSHwiki article (2019)**

https://oshwiki.eu/wiki/Working_with_rheumatic_and_musculoskeletal_diseases_(RMDs)

- **Early intervention for musculoskeletal disorders among the working population — OSHwiki article (2020)**

https://oshwiki.eu/wiki/Early_intervention_for_musculoskeletal_disorders_among_the_working_population

- **Analysis of case studies on working with chronic musculoskeletal disorders (2020)**

https://osha.europa.eu/en/publications/analysis-case-studies-working-chronic-musculoskeletal-disorders/view

- **Summary — Analysis of case studies on working with chronic musculoskeletal disorders (2020)**

https://osha.europa.eu/en/publications/summary-analysis-case-studies-working-chronic-musculoskeletal-disorders/view

- **Work-related musculoskeletal disorders: back to work report (2007)**

https://osha.europa.eu/en/tools-and-publications/publications/reports/7807300/view

This report focuses on the retention, reintegration and rehabilitation of workers with MSDs. It includes a literature review on the effectiveness of work-related interventions, and an overview of policy initiatives in Europe and at the international level.

- **Work-related musculoskeletal disorders: back to work — Factsheet 75 (2007)**

https://osha.europa.eu/en/publications/factsheet-75-work-related-musculoskeletal-disorders-back-work/view

This factsheet summarises the above report and is available in various languages.

- **Rehabilitation and return to work: Analysis report on EU and Member States policies, strategies and programmes (2016)**

https://osha.europa.eu/en/tools-and-publications/publications/rehabilitation-and-return-work-analysis-eu-and-member-state/view

This report links aspects of chronic problems with the ageing workforce and suggests ways to keep the affected people safe at work. It includes specific sections on MSDs.

- **Return to work strategies to prevent disability from musculoskeletal disorders — OSHwiki article (2020)**

https://oshwiki.eu/wiki/Return_to_work_strategies_to_prevent_disability_from_musculoskeletal_disorders

- **Rehabilitation and return to work after cancer — instruments and practices**

https://osha.europa.eu/en/publications/rehabilitation-and-return-work-after-cancer-instruments-and-practices/view

This report explores the OSH challenges that employers and employees face when workers return to work after a diagnosis of cancer. The report provides national examples of successful instruments and practices that help prevent long-term sickness absence and unemployment.

- **Advice for employers on return to work for workers with cancer (2018)**

https://osha.europa.eu/en/publications/advice-employers-return-work-workers-cancer/view

Although it concerns cancer, this simple leaflet provides advice relevant to return to work that is also relevant to chronic MSDs. It is available in various languages.

Low back disorders

- **Managing low back conditions and low back pain — OSHwiki article (2019)**

https://oshwiki.eu/wiki/Managing_low_back_conditions_and_low_back_pain

- **Work-related low back disorders**

https://osha.europa.eu/en/publications/report-work-related-low-back-disorders/view

This report covers the prevalence, origin, work-related risk factors and effective prevention strategies for low back disorders.

Older workers

- **E-guide — ageing workers**

https://eguides.osha.europa.eu/all-ages

A multilingual e-guide for the workplace on the ageing workforce.

- **Twenty-four case studies of workplace good practices**

https://osha.europa.eu/en/themes/osh-management-context-ageing-workforce/ep-osh-project/case-studies-of-workplace-good-practices

On this web page, links to 24 examples of approaches from workplaces to managing an ageing workforce can be found.

- **Healthy Workplace Good Practice Awards 2016-2017: Healthy Workplaces for All Ages (2017)**

https://osha.europa.eu/en/tools-and-publications/publications/healthy-workplaces-good-practice-awards-2016-2017-booklet/view

This report contains 18 good practice examples from workplaces for managing the safety and health of ageing workers and prolonging working life. It has been translated into various languages.

- **The ageing workforce: implications for occupational safety and health — A research review**

https://osha.europa.eu/en/tools-and-publications/publications/safer-and-healthier-work-any-age-ageing-workforce-implications/view

This research report examines OSH measures that could promote sustainable work throughout the working life.

- **The ageing workforce: implications for occupational safety and health — A research review — Information Sheet**

https://osha.europa.eu/en/publications/ageing-workforce-implications-occupational-safety-and-health-research-review-0/view

This information sheet summarises the above report and is available in various languages

- **Safer and healthier work at any age: Review of resources for workplaces (2016)**

https://osha.europa.eu/en/publications/safer-and-healthier-work-any-age-review-resources-workplaces/view

This review presents a wide variety of tools and resources to be used to make workplaces safe and ensure employees are healthy, no matter what their age.

- **European Parliament project on the ageing workforce**

https://osha.europa.eu/en/themes/osh-management-context-ageing-workforce/ep-osh-project

Research and good practice resources on the ageing workforce can be accessed through this web section.

Training resources

- **Conversation starters for workplace discussions about musculoskeletal disorders**

https://osha.europa.eu/en/publications/conversation-starters-workplace-discussions-about-musculoskeletal-disorders/view

This includes activities on raising/the discussion of MSD/RMD problems with the employer and speaking with a worker on the topic. It also includes annexes with advice on having conversations with the employer about health issues. It has been translated into various languages.

- **Napo film training resource 'Know the early signs of MSDs'**

https://www.napofilm.net/en/learning-with-napo/napo-in-the-workplace/

These resources are for running group activities on MSDs using a Napo film clip. The activities 'Keep moving at work', 'Check your posture' and 'Take a break' may be relevant to MSDs. The resources have been translated into various languages.

Appendix 5 Annotated bibliography

Title of document	Organisation	Country	Web link	Summary
Absence from work (2017)	European Foundation for the improvement of living and working conditions (Eurofound)	EU	https://www.eurofound.europa.eu/sites/default/files/ef_files/docs/ewco/tn0911039s/tn0911039s.pdf	This study addresses patterns of absence from the 27 EU Member States and Norway, the costs involved, policies for dealing with absence and general developments in relation to promoting health and well-being. It includes national examples of best practice.
Advice for employers on return to work for workers with cancer (2018)	European Agency for Safety and Health at Work (EU-OSHA)	EU	https://osha.europa.eu/en/publications/advice-employers-return-work-workers-cancer/view	Although it concerns cancer, this simple leaflet provides advice relevant to return to work, which is also relevant to chronic MSDs. It is available in various languages.
The ageing workforce: implications for occupational safety and health — A research review (2016)	European Agency for Safety and Health at Work (EU-OSHA)	EU	https://osha.europa.eu/en/tools-and-publications/publications/safer-and-healthier-work-any-age-ageing-workforce-implications/view	This research report includes an examination of OSH measures that could promote sustainable work throughout the working life and highlights the importance of improved prevention for all workers, considering individual work ability and specific measures in risk prevention strategies and effective OSH systems.
The ageing workforce: implications for occupational safety and health — A research review, info sheet (2016)	European Agency for Safety and Health at Work (EU-OSHA)	EU	https://osha.europa.eu/en/publications/ageing-workforce-implications-occupational-safety-and-health-research-review-0/view	This info sheet summarises the above report and is available in various languages.
Arthritis, back pain & related conditions: a guide for employers	Fit for Work Ireland	Ireland	http://arthritisireland-education.com/wp-	This is a practical guide for employers.

Title of document	Organisation	Country	Web link	Summary
			content/uploads/2016/06/Employer-web-version.pdf	
Chronic low back pain (2006)	Belgian Health Care Knowledge Centre	Belgium	https://kce.fgov.be/sites/default/files/atoms/files/d20061027371.pdf	This report comprises the outputs of a Belgian project regarding the efficiency of interventions targeting chronic low back pain. The final recommendations include that care providers should be more aware of physical inactivity among patients, and the role of occupational nurses and physicians in preventing low back pain from becoming chronic.
Conversation starters for workplace discussions about musculoskeletal disorders: An EU-OSHA resource for workplaces (2019)	European Agency for Safety and Health at Work (EU-OSHA)	EU	https://osha.europa.eu/en/publications/conversation-starters-workplace-discussions-about-musculoskeletal-disorders/view	This resource can facilitate group discussions in the workplace or during vocational training. The scenarios included are designed for workers involved in tasks that may cause MSDs, and for their managers and supervisors. The resource also supports the need for prompt and effective communication between a worker and their manager about a musculoskeletal health problem. It includes annexes with tips for individuals and managers on having a conversation about the individual's MSD.
Disabilità e lavoro: un binomio possibile [*Disability and work, a possible combination*] (2009)	Fondazione Don Carlo Gnocchi-Onulus	Italy	http://portale.siva.it/it-IT/databases/libraries/detail/id-269	This report contains methods for risk analysis, methods of risk elimination and selected case studies.
Don't Delay, Connect Today — Time2Work campaigns	European League Against Rheumatism (EULAR)	EU	https://www.eular.org/eular_campaign.cfm	The campaign Don't Delay, Connect Today aims to raise awareness of the importance of early intervention — diagnosis and treatment — for chronic MSDs such as rheumatism and arthritis. The linked campaign Time2Work has been incorporated into the ongoing campaign and, as its name suggests, focuses on improving access to work.
Ensuring the health and safety of workers with	EU-OSHA	EU	https://osha.europa.eu/en/publications/factsheet-53-ensuring-health-and-	This factsheet explains how people with disabilities are covered by both European employment equality legislation and OSH legislation. It provides practical advice on risk assessment and tips

Title of document	Organisation	Country	Web link	Summary
disabilities, Factsheet 53 (2004)			safety-workers-disabilities/view	for providing reasonable accommodations and a safe workplace for disabled workers. It has been translated into various languages.
Fit for work? Musculoskeletal disorders in the European Workforce (2009)	Fit for Work Europe and The Work Foundation	United Kingdom/ EU	http://www.bollettinoadapt.it/old/files/document/3704FOUNDATION_19_10.pdf	This report looks at the impact of MSDs on working lives. It looks in particular at low back pain, WRULDs, rheumatoid arthritis and spondyloarthropathy. For MSD prevention, the project proposes that employers should promote healthier lifestyle, more physical fitness, ergonomics, psychologically healthy workplaces and OSH. For cost-effective return-to-work approaches, the study proposes early workplace contact with employees on sick leave, offering to accommodate work, contact between healthcare provider and workplace, ergonomic work-site visits and a return-to-work coordinator. Disability assessors should also be aware of the clinical limitations of the worker. Early intervention can also be achieved by other means such as periodic risk assessments.
A healthy return: good practice guide to rehabilitating people at work (2015)	Institution of Occupational Safety and Health (IOSH)	United Kingdom	https://iosh.com/media/3683/ps0335-good-practice-rehabilitation-document-new.pdf	This is a guidance document for a healthy return to work and rehabilitation. It provides practical examples and guidance on good practice for returning to work after several causes of long absence, from maternity leave to stress and MSDs. It defines the criteria for the main actors in occupational health through specific examples of low back pain, a badly crushed foot, stress and occupational cancer. Moreover, it analyses relevant reasonable adjustments, managing sensitive medical information and other helpful tools such as return-to-work plans for the above-mentioned examples.
Introduction to work-related musculoskeletal disorders, Factsheet 71 (2007)	European Agency for Safety and Health at Work (EU-OSHA)	EU	https://osha.europa.eu/en/publications/factsheet-71-introduction-work-related-musculoskeletal-disorders/view	This factsheet is available in various languages. It provides a short introduction to MSDs at work, and their causes and prevention.

Title of document	Organisation	Country	Web link	Summary
Musculoskeletal health in the workplace: a toolkit for employers (2017)	Business in the Community (BITC)	United Kingdom	https://www.bitc.org.uk/wp-content/uploads/2019/10/bitc-wellbeing-toolkit-musculoskeletal-mar2017.pdf	This guide provides practical advice about managing musculoskeletal health at work, including MSD prevention, workplace accommodations, rehabilitation, having workplace conversations and health promotion.
Promoting healthy work for workers with chronic illness: A guide to good practice (2012)	European Network for Workplace Health Promotion (ENWHP)	EU	https://www.enwhp.org/?i=portal.en.european-guide-to-good-practice-guidelines	This guide explains good practice for managing chronic illnesses at work. It provides explanations of what works in practice and how to achieve workplace health promotion. It includes practical guidance on how to return to work after long absences and what else can be done in the workplace to promote healthy work, including (1) enabling a return to work as soon as possible, (2) focusing return to work around the individual, (3) providing reasonable adjustments according the individual's needs, (4) the employer managing and mentoring the return-to-work programme, (5) ensuring that the individual is engaged in the return-to-work programme, (6) taking appropriate measures for avoiding injuries or illness in the workplace and (7) gaining understanding of the individual's personal situation, which might have an impact on work.
Rehabilitation and return to work: Analysis report on EU and Member States policies, strategies and programmes (2016)	European Agency for Safety and Health at Work (EU-OSHA)	EU	https://osha.europa.eu/en/tools-and-publications/publications/rehabilitation-and-return-work-analysis-eu-and-member-state/view	This report links aspects of chronic problems with the ageing workforce and suggests ways to keep affected people safe at work. Among the suggestions are rehabilitation and return-to-work programmes, and support activities such as financial support and ergonomic adjustments. The report highlights the differences among the then 28 EU Member States and the four European Free Trade Association (EFTA) countries in terms of rehabilitation. The report follows this analysis by describing the factors for successful rehabilitation and return to work.

Title of document	Organisation	Country	Web link	Summary
Self-management of chronic musculoskeletal disorders and employment (2014)	The Work Foundation and Fit for Work UK (Summers, K., Bajorek, Z. and Bevan, S.)	United Kingdom	http://arma.uk.net/wp-content/uploads/2014/09/REPORT-self-management-of-chronic-musculoskeletal-disorders-09-2014.pdf	This report acknowledges that self-management should be approached more holistically in the context of everyday life including the workplace. Self-management behaviours such as appropriate exercise, healthy diet and mental strategies can help people with MSDs cope with everyday barriers such as pain, fatigue and the deterioration of their symptoms. The advice is built on interviews with people affected by chronic MSDs who continue to work or plan to return to work in the future. Special focus is given to the problems and the solutions for continued working while affected by MSDs and it is revealed that colleagues and managers play an important role in influencing a worker's decision to continue working.
An employer's guide to rheumatoid arthritis	National Rheumatoid Arthritis Society (NRAS)	United Kingdom	https://nras.org.uk/product/an-employers-guide-to-rheumatoid-arthritis/	This is a guide to help employers understand rheumatoid arthritis and how to deal with it in the workplace. It explains how rheumatoid arthritis symptoms may affect people at work and includes information on best practice and on making reasonable adjustments for employees at work.
Workforce diversity and risk assessment: ensuring everyone is covered — Summary of an Agency report, Factsheet 87 (2010)	European Agency for Safety and Health at Work (EU-OSHA)	EU	https://osha.europa.eu/en/tools-and-publications/publications/factsheets/87/view	This factsheet explains the importance of covering diversity in safety and health risk management and provides a simple checklist for including diversity in risk assessment. It has been translated into various languages.
Working with Arthritis (2016)	Arthritis Care	UK	https://www.versusarthritis.org/media/23176/working-with-arthritis-booklet.pdf	This practical guide provides information for workers and those who wish to work.
Working with arthritis (2016)	Arthritis Research UK	UK	https://www.versusarthritis.org/media/2071/working-with-arthritis-policy-report.pdf	This is a comprehensive practical guide for employers. It includes best practice examples from employers.

Title of document	Organisation	Country	Web link	Summary
Working with arthritis, back pain & related conditions: A guide for employees (undated)	Arthritis Ireland	Ireland	http://arthritisireland-education.com/wp-content/uploads/2016/06/Employee-Booklet-web-version.pdf	This practical guide includes advice on how MSDs affect employment, whether and how to speak to employers, managing an MSD at work and getting help with the job.
Work-related musculoskeletal disorders (MSDs): an introduction , E-Facts 9 (2007)	European Agency for Safety and Health at Work (EU-OSHA)	EU	https://osha.europa.eu/en/publications/e-fact-9-work-related-musculoskeletal-disorders-msds-introduction/view	Factors contributing to MSDs include the use of force, repetitive work, working in awkward or static postures, vibration, work in cold environments and prolonged sitting or standing. MSDs are also affected by levels of stress, autonomy and support from colleagues, individuals' prior medical history, physical capacity and age, and social factors such as leisure activities. These factors may act uniquely or in combination. Employers are required to assess the risks that their workers face, including the risk of developing MSDs, and act on them.
Work-related musculoskeletal disorders: Back to work report (2007)	European Agency for Safety and Health at Work (EU-OSHA)	EU	https://osha.europa.eu/en/publications/report-work-related-musculoskeletal-disorders-back-work	This report is aimed at all those who have influence on the secondary and tertiary prevention of (back-to-work actions following) work-related MSDs. It evaluates the effectiveness of interventions in the workplace, and gives an overview of policy initiatives in Europe and at international level regarding the retention, reintegration and rehabilitation of workers with MSDs.
Work-related musculoskeletal disorders: Back to work — a summary, Factsheet 75 (2007)	European Agency for Safety and Health at Work (EU-OSHA)	EU	https://osha.europa.eu/en/publications/factsheet-75-work-related-musculoskeletal-disorders-back-work/view	This factsheet summarises the above report and is available in various languages.
Work-related musculoskeletal disorders: Prevention report (2008)	European Agency for Safety and Health at Work (EU-OSHA)	EU	https://osha.europa.eu/en/publications/report-work-related-musculoskeletal-disorders-prevention-report/view	This report aims to identify successful practices and interventions for the purpose of preventing workplace MSDs. It includes prevention examples covering technical interventions, organisational interventions and behavioural modifications.

Appendix 6 Websites with further information and resources

Name	Country	Link to website	Short description of content
AbilityNet	United Kingdom	https://abilitynet.org.uk/	AbilityNet supports people of any age, living with any disability or impairment, to use technology to achieve their goals at home, at work and in education. Resources include free information for workers and employers.
ACED	Canada	https://aced.iwh.on.ca/	Accommodating and Communicating about Episodic Disabilities (ACED) is a research partnership developing evidence-based workplace tools, resources and training programmes to support the sustained employment of people with episodic disabilities. This includes a collection of resources on managing arthritis and work, including advice on whether to disclose a condition to an employer.
Arthritis Action	United Kingdom	https://www.arthritisaction.org.uk/	This website provides a variety of useful advice and factsheets, such as advice on self-management, pain management and exercises, to help people with arthritis.
Arthritis Foundation	United States	https://www.arthritis.org/toolkits/better-living/about/rheumatoid-arthritis/patient-stories.php	This website provides tools and information about arthritis including about useful exercises, pain management, comorbidities and diet. The website includes a section on arthritis in young people and various articles on work in the 'healthy living' section.
Arthritis Ireland	Ireland	https://www.arthritisireland.ie/work-and-arthritis	Arthritis Ireland has a web page ('Work and arthritis') that provides advice on work and arthritis, including a downloadable brochure entitled *Working with arthritis, back pain & related conditions — A guide for employees*. A brochure for employers is also available at: http://arthritisireland-education.com/wp-content/uploads/2016/06/Employer-web-version.pdf
Arthritis Society	Canada	https://arthritis.ca/support-education/arthritis-and-work	The Arthritis Society website contains a section on arthritis and work. There is practical advice for both employers and employees, covering rights, workplace accommodations, communication and exercises, including videos and inspirational stories.

Name	Country	Link to website	Short description of content
Arthritis Society	Canada	https://arthritis.ca/support-education/arthritis-and-work/i-m-an-employer	This Arthritis Society website has a web page with useful information for employees and employers. It contains a series of guidance and practical advice for managing arthritis in the workplace. The main sections are 'What is arthritis?'; 'Creating an arthritis-friendly workplace'; 'Accommodating employees with arthritis'; 'Your rights and responsibilities as an employer'; 'Strategies for the workplace'; and 'Arthritis management beyond the workplace'.
Artrite Reumatoide	Italy	https://www.artritereumatoide.it/	Artrite Reumatoide is an Italian website dedicated to those with rheumatoid arthritis. It provides details of personal experiences and advice for dealing with rheumatoid arthritis at work, in human relationships and in other activities. It includes personal stories of people working with rheumatoid arthritis and how they deal with their symptoms at work.
ARMA	United Kingdom	http://arma.uk.net/musculoskeletal-disorders-msk/	ARMA (Arthritis and Musculoskeletal Alliance) is a UK national action network. The website provides information about different types of MSDs, including some of the causes, statistics, relevant policies and good practices. ARMA also collects news regarding MSDs from scientific and medical points of view, publishes newsletters and organises events, which can be of either scientific/ professional interest or general interest.
AQDC	Canada	https://douleurchronique.org/management-of-chronic-pain/managing-pain-at-work/?lang=en	The AQDC (Association Québécoise de la douleur chronique — Quebec Association for Chronic Pain) is an association aiming to provide information on how to deal optimally with chronic pain. The website contains resources on the types of diseases related to chronic pain and the management of chronic pain. It gives specific information on managing pain effectively at work. There is also information on medications, ergonomics and physical therapies. There is a section dedicated to the management of chronic pain at work, which would be useful for employers as well.
BackCare	United Kingdom	http://backcare.org.uk/i-have-back-or-neck-pain/back-pain-work/	BackCare is the United Kingdom's national back pain association. The website's resources library includes factsheets offering a variety of practical and simple information about work, driving, managing back pain in general, etc. The website has a special section dedicated to pain at work and recommended exercises for back pain.
Chrodis Plus Workbox on	EU	http://chrodis.eu/08-chronic-diseases-and-employment/	The Chrodis Plus Chronic Diseases and Employment Workbox comprises two elements: a training toolkit and a toolkit for workplaces. Its practical resources support workplaces to measure, evaluate and strengthen their inclusiveness and the work ability of employees

Name	Country	Link to website	Short description of content
chronic diseases and employment			with chronic conditions; foster the well-being, health and work ability of all employees; prevent the development of chronic diseases; support employees to return to work after sick leave; and help individuals with chronic health conditions to stay at work. The workbox was developed by 18 partners from 11 EU countries, and it was co-funded by the European Commission. Both the training toolkit and the toolkit for workplaces have been translated into various languages.
Clear Talents on Demand	United Kingdom	https://cleartalentsondemand.com/	This website provides a tool, 'Clear talents on demand', that is used to create a personalised report that identifies reasonable adjustments through a series of tailored questions about circumstances at work that can present challenges. The person can share the report with their employer so that they are aware of the person's needs.
CCOHS	Canada	https://www.ccohs.ca/	CCOHS (Canadian Centre of Occupational Health and Safety) mainly provides guidance and recommendations on how to achieve a healthy workplace. It covers a range of occupational-related topics such as mental health, gender and health in the workplace. It dedicates a special section to MSDs and their relationship to psychological factors in the workplace. The website also provides courses mainly for recognising MSDs at work and how to improve ergonomics, and other useful guides.
Design for All Foundation	Spain	http://designforall.org/design.php	The Design for All Foundation promotes knowledge around the concept of design tailored to human diversity. Design for All projects aim to improve quality of life, solidarity, dignity, sustainability and equal opportunities. The website contains guidance for various sectors, such as the tourism, education and museum sectors, and companies, but also to individuals. There is a special section regarding news in the sector, where there is information regarding new trends of inclusive design and award-winning initiatives in the sector.
DO IT	United States	https://www.washington.edu/doit/about/overview	The DO IT (Disabilities, Opportunities, Internetworking, and Technology) centre is dedicated to helping people with disabilities through technology and education. DO IT promotes awareness and provides information about accessibility to classrooms and workplaces. In practice, DO IT empowers people through inclusivity and technology and helps them to achieve their targets either as students or as employees. The centre is located at the University of Washington and provides a series of resources for disabilities, parents and mentors, and accessible technology.

Name	Country	Link to website	Short description of content
EULAR — PARE organisations	EU	https://www.eular.org/eular_pare_organisations.cfm	This section of the EULAR (European Alliance of Associations for Rheumatology) website provides a list of rheumatism and arthritis patient support organisations in different countries. These PARE (People with Arthritis and Rheumatism) organisations often provide information, practical advice and support on working with rheumatic and musculoskeletal disorders.
Employee Benefits	United Kingdom	https://www.employeebenefits.co.uk/	The Employee Benefits website is informative regarding the rights of employees in the United Kingdom. Although the website is dedicated to issues such as taxes, pensions and financial information, it also dedicates special articles on health care and well-being, which would be of general interest and not strictly of interest to only UK citizens. With regard to MSDs in the workplace, the website provides information about physical health, how to support staff with MSDs and what employers should provide to support their staff.
ENWHP	EU	https://www.enwhp.org/?i=portal.en.home	The ENWHP (European Network for Workplace Health Promotion) conducts research and training for improving workplaces and occupational health. Its online publications and resources include material related to healthy working and chronic illnesses, good practices for promoting healthy working, good practices in the prevention of psychosocial risks, and guidance on healthy ageing and healthy lifestyles.
EU-OSHA	EU	https://osha.europa.eu/en/themes/musculoskeletal-disorders/practical-tools-musculoskeletal-disorders	MSD database — this EU-OSHA (European Agency for Safety and Health at Work) database contains links to resources on MSDs on other websites. It includes a filter allowing users to search for resources on working with chronic MSDs.
EU-OSHA	EU	https://osha.europa.eu/	EU-OSHA (European Agency for Safety and Health at Work) provides a variety of research and good practice reports and information/factsheets on MSDs and their prevention and also on the ageing workforce and return to work.

Name	Country	Link to website	Short description of content
EU-OSHA	EU	https://osha.europa.eu/en/themes/osh-management-context-ageing-workforce	EU-OSHA's research and good practice resources on the ageing workforce can be accessed through this web section. It includes workplace case studies and reports on rehabilitation and women and the ageing workforce.
EU-OSHA	EU	https://eguides.osha.europa.eu/all-ages	This is a multilingual e-guide on the ageing workforce.
Eurofound	EU	https://www.eurofound.europa.eu/topic/ageing-workforce	Eurofound's research reports, data and other information on ageing and work can be found at this link.
Eurofound	EU	https://www.eurofound.europa.eu/topic/disability-and-chronic-disease	Eurofound's research reports, data and other information on disability and chronic diseases can be found at this link.
Fit2Work	Austria	https://fit2work.at/	Fit2Work is an Austria-wide programme based on the Labour and Health Act, which was passed in 2011. It consists of a service for companies and individuals. The key objectives are to reintegrate employees after long periods of sick leave and to preserve their workability on a long-term basis. This is to be done by taking adaptive measures at organisational level and supporting the individual's efforts (integration schedule for the company and the individual).
Fit for Work	United Kingdom (Scotland)	https://fitforwork.org	Fit for Work is a line of support for GPs, employers and employees to help those who are in work or off sick with health conditions. The website includes an advice hub providing tools to support staying in or getting back to work, covering different conditions both in work and outside work. A blog provides additional advice on a range of topics.
Fondazione Veronesi	Italy	https://www.fondazioneveronesi.it/magazine	Fondazione Veronesi is a research-oriented foundation that provides research communication and scientific results for a general audience. The website has a particular focus on rheumatoid arthritis and explains the different types of this disorder through an extended glossary. The site is in Italian and, although it is science oriented, it includes

Name	Country	Link to website	Short description of content
			information regarding the causes, risk factors, and novel therapies and cures for rheumatoid arthritis.
Health	United States	https://www.health.com/health/gallery/0,,20654489,00.html?slide=100236#100236	Health is an online magazine for a broad audience. Beyond other health topics, it gives guidance in the form of short articles on stretching at work, joint replacements, rheumatoid arthritis, chronic pain and general information on MSDs and related symptoms.
Institut für Arbeitsfähigkeit GmbH	Germany	https://www.arbeitsfaehig.com	This institute provides consultation and training for companies in Germany on return to work
IWH	Canada	https://www.iwh.on.ca/	The IWH (Institute for Work & Health) website provides various resources and tools on return to work and working with chronic conditions such as arthritis. This includes tools for young people with a rheumatic disease, resources on return to work in general and on MSDs and a resource on back pain
IWH	Canada	https://www.iwh.on.ca/tools-and-guides/working-with-rheumatic-disease?utm_source=iwhnews&utm_medium=email&utm_campaign=iwhnews-2020-12	'Working with a rheumatic disease: an interactive tool for youth and young adults'. This interactive tool of the IWH (Institute for Work & Health) is designed for youth and young adults who are just entering, have recently entered or are contemplating entering the workforce. The tool takes users through one of three paths: 'I am looking for work', 'I have a job' or 'I'm not able to work'. Using 'yes'/'no' questions the tool then helps users to identify important steps and potential challenges along the way, pointing to web-based resources that offer guidance.
IOSH	United Kingdom	https://iosh.com/resources-and-research/our-resources/occupational-health-toolkit/	IOSH (Institution of Occupational Safety and Health) is the United Kingdom's chartered body and leading organisation for safety and health professionals. It provides any necessary information regarding resources, training, guidance and support for a safer workplace. IOSH frequently publishes guides on training and advice, which are publicly accessible and deal with prevention, recognition and dealing with many occupational

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			issues including MSDs. The website's resources section includes advice on work-related MSDs and also return to work.
JAN	United States	https://askjan.org/	JAN (Job Accommodation Network) provides practical information for workplace accommodations free of charge. The website contains a database where practical examples of accommodations divided by category and type of disability. It There are solutions covering almost all health conditions and their problematic symptoms (not only disabilities) at work. In terms of MSDs, it provides examples of practical solutions for upper limb problems, low back pain, lower limb problems, arthritis, etc.
JAN	United States	https://askjan.org/disabilities/Arthritis.cfm	'Accommodation and compliance: arthritis'. This JAN web section, dedicated to arthritis, contains categorised solutions targeted to specific limitations resulting from arthritis, e.g. balancing, grasping, decreased stamina and pain. It also categorises solutions based on work-related function such as light, temperature, stress, parking, work site access and workstation access. There is detailed information on managing arthritis and the web section provides useful information and a guide for employers and employees who want to deal with such problems.
JAN	United States	https://askjan.org/disabilities/Back-Impairment.cfm	'Accommodation and compliance: back impairment'. This JAN web section is dedicated to back impairment. It contains information regarding the aetiology of back disorders and categorises them by limitation and work-related function and provides accommodation ideas. It gives practical advice on moving items, parking and work access.
JAN	United States	https://askjan.org/disabilities/Chronic-Pain.cfm	'Accommodation and compliance: chronic pain'. This JAN web section is dedicated to workers with chronic pain. 'It summarises tips and practical advice for dealing with chronic pain in the workplace, including in relation to stress, workplace temperatures, 'decreased stamina and fatigue, and sitting at work.
KCE	Belgium	https://www.kce.fgov.be/en	KCE (Centre Fédéral d'Expertise des soins de Santé — Belgian Health Care Knowledge Centre) is a knowledge centre providing information around healthcare topics. The website is dedicated mainly to health care, with advice for patients and scientists, and multiple offers for collaboration and research projects. Forms of thematic-oriented general advice are provided by dedicated reports, such as *Chronic low back pain* (Nielens et al., 2006).

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Lydia Osteoporosis Project	United Kingdom	http://www.lydiaosteoporosis.com/	The Lydia Osteoporosis Project aims to raise awareness of osteoporosis and the related increased risk of fractures. On the website, health practitioners and individuals can find latest research results and information on the implications of osteoporosis including solutions that work against osteoporosis and reviews of the osteoporosis literature. The website includes further advice on healthy eating tips and working with osteoporosis in demanding settings such as moving and carrying objects or working with older people.
NRAS	United Kingdom	https://www.nras.org.uk/stories	NRAS (National Rheumatoid Arthritis Society) is a patient-led organisation that provides assistance to people with rheumatoid arthritis. NRAS assists people through an extended channel of information (scientific and general) and through events. The website includes information about different types of arthritis, symptoms and treatment, and real stories highlighting experiences of people with rheumatoid arthritis. The publications section includes downloadable guides about work for individuals and employers.
NDA	Ireland	http://nda.ie/ http://universaldesign.ie	The NDA (National Disability Authority) is dedicated to various aspects of disability including working with disability. It is also the Centre of Excellence in Universal Design and provides universal design solutions including workplace accommodations for ordinary people. It provides links to organisations in countries outside Ireland providing advice on universal design: Germany — https://ifworlddesignguide.com/ Norway — https://www.bufdir.no/en/uu/English_info/ Sweden — https://zeroproject.org/practice/handisam-nsphhjarnkoll-sweden/ United Kingdom — https://cae.org.uk/ Japan — https://www.iaud.net/global/conference/ — http://idea.ap.buffalo.edu/ Australia — http://universaldesignaustralia.net.au/about-us-3/
Northwest ADA Centre	Canada	http://nwadacenter.org/	This website contains advice for businesses, government, architects and people with disabilities. It contains advice on making workplaces accessible and making individual accommodations.
Safety+Health	United States	https://www.safetyandhealthmagazine.c	This magazine website contains guidance and conclusions of studies about MSDs in different workplaces. The section on MSDs provides a series of videos aiming to raise

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		om/topics/941-musculoskeletal-disorders	worker awareness of MSDs, related studies, such as on absenteeism due to these disorders, return to work, work-related MSDs and causes, and support in the form of guides and studies. There is targeted information for nurses, vehicle drivers, hotel workers, retail workers, office workers and sectors such as agriculture, health care and others with dominant tasks in manual handling. The material is useful to both employers and workers.
Swedish Work Environment Authority	Sweden	https://www.av.se/halsa-och-sakerhet/arbetsanpassning-och-rehabilitering/?hl=rehabilitering	This website provides information for the workplace on work adaptations and rehabilitation. It includes information on legal obligations and good practice.
Versus Arthritis	United Kingdom	https://www.versusarthritis.org/about-arthritis/living-with-arthritis/work/	This organisation provides advice on work for arthritis sufferers. There is also useful advice on a whole range of issues including types of arthritis, fatigue, how to exercise and how to deal emotionally with the condition. This organisation gives support in various ways: it supports research and provides information, and there is also a helpline for those would like more private information. It was formed by merging Arthritis Research and Arthritis Care.
WebMD	United States	https://www.webmd.com/rheumatoid-arthritis/default.htm	This WebMD 'Rheumatoid arthritis health centre' section aims to provide information about the diagnosis, symptoms and complications of rheumatoid arthritis. There is detailed guidance on how to handle pain, how to keep living a healthy lifestyle and how to manage related symptoms such as the swelling of joints. In terms of the workplace, this section provides a series of personal stories that aim to increase awareness of this disorder; this would be useful for employers who want to understand the main problems of a worker with rheumatoid arthritis.

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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.

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