European Agency for Safety and Health at Work

Work-related musculoskeletal disorders: prevalence, costs and demographics in the EU

National report: Austria

European Agency for Safety and Health at Work

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Summary

Prevalence of MSDs

- The percentage of Austrian men and women workers reporting that their work affects their health is slightly lower (38 % and 33 %, respectively) than the average levels for the 28 EU Member States (EU-28) (39 % and 35 %, respectively).
- The percentage of Austrian workers affected by back pain and muscular pain in the shoulders, neck and/or upper limbs is higher than the EU-28 average, whereas the prevalence of workers affected by muscular pain in the lower limbs is lower than the EU-28 average.
- According to national data, the most common work-related health problem among Austrian workers is back problems (affecting almost one-third of respondents (32.2 %)), followed by neck, shoulder and arm problems (reported by 19.0 % of respondents) and hip, leg or foot problems (reported by 16.3 % of workers). Although men complained more frequently about back problems (33.7 %, compared with 30.6 % of women) and hip, leg and foot problems (18.1 %, compared with 14.3 % of women), women were more likely to have problems with the neck, shoulders, arms or hands (23.4 %, compared with 14.9 % of men).
- An in-depth review of the personal characteristics of workers with a work-related musculoskeletal disorder (MSD) shows that, generally speaking, these problems are much more common in older workers, and in workers educated to International Standard Classification of Education (ISCED) levels 3 and 4 (upper secondary education). Furthermore, MSD-related problems are particularly common in specific sectors, particularly manufacturing, health and social work, construction and agriculture/forestry/fishing, as well as trade, public administration, and transport and logistics. They are also particularly common among specific occupational groups, such as craft and related jobs, service professions, technicians, plant and machinery operators and unskilled occupations.
- Available national data on MSDs reported and recognised as occupational diseases show that in 2014 there were 40 recognised MSD-related cases out of a total of 1,129 recognised occupational diseases (approximately 3 % of the total). In Austria, only 1 case was recognised per 100,000 insured people (in 2014).
- National data on new health-related retirement pensions show that MSDs are the primary reason for granting this type of pension (32.5 % of pensions), followed by mental/behavioural disorders (26.8 %) (2006 data).

Impact of MSDs

- With regard to the costs and other burdens related to MSDs, the available data on disability-adjusted life years (DALYs) show that the number of years of life lost and lived with disability resulting from work-related MSDs per 100,000 workers represents a lower percentage of the total number of years of life lost and lived with disability due to different reasons (cancer, circulatory problems, injuries, etc.) than the EU-28 average.
- Available data show that a higher percentage of people in Austria have reported a period off work as a result of a work-related health problem resulting in sick leave than the average level for the EU-28. Available data also show that Austrian workers have longer periods of sick leave.
- A lower percentage of Austrian employees work in companies that support employees to return to work after a long-term sickness than the EU-28 average.
- National data on new health-related retirement pensions in Austria for the years 2001 and 2006 show that MSDs were the main underlying reason for these pensions in both years; the second and third most common causes were mental/behavioural disorders and diseases of the circulatory system. MSDs are the most common reason for receiving a health-related retirement

pensions in men, whereas in women they are the second most common cause after mental/behavioural disorders.

- Available national information on sick leave shows that MSDs are the third most common reason for taking sick leave (accounting for 13.2 % of cases), after diseases of the respiratory system and certain infectious and parasitic diseases. Meanwhile, MSDs account for more working days lost than any other type of health problem. The average duration of sick leave caused by MSDs was 15.8 days in 2016.

Risk factors for MSDs

- A large percentage of Austrian employees are exposed to physical factors at work that may put them at risk of MSDs. More precisely, the most important physical risk factors are jobs involving working in standing positions and working with computers/laptops, followed by other risks such as working in sitting positions, repetitive hand/arm movements and working in tiring/painful positions. A comparison with EU-level data shows that the general order of the different physical risk factors is similar in Austria, with the exception of the risk linked to working with computers/laptops (which is particularly relevant in Austria).
- Organisational and psychosocial risk factors also play a role as potential triggers of MSDs. The most relevant of these factors among Austrian employees are the pace of work being dependent on other people's demands, working at very high speed and the presence of tight deadlines. Other relatively important risk factors include the pace of work being dependent on the boss and difficulties with sleep. A comparison with EU-level data shows that the most relevant organisational and psychosocial risk factors are very similar in Austria and in the EU-28, although working at very high speed is a particularly important risk factor in Austria.
- National data show that there are three factors that can be identified as being particularly important risk factors for MSD-related health problems, specifically two physical risk factors (difficult work postures/difficult movements and handling heavy loads) and one psychosocial one (significant time pressure/work overload). These three risk factors can be related to all types of MSD-related health problems. Other, less relevant risk factors include two physical factors (work that strains the eyes and danger of accidents) and one psychosocial one (harassment/bullying in the workplace).

Prevention of MSDs

- Surveys of enterprises suggest that Austrian employees benefit considerably from measures aimed at preventing MSDs in their workplaces, particularly in relation to the provision of equipment to help with lifting or moving, the provision of ergonomic equipment, and encouraging regular breaks for people working in uncomfortable positions (these percentages are similar to EU-28 levels). However, the percentage of Austrian employees working in establishments where they can rotate tasks to reduce repetitive movements is much lower than the EU-28 average.
- A large proportion of Austrian employees work in establishments where training on the proper use and adjustment of work equipment is offered, or where training is provided on how to lift and move heavy loads (the first figure is higher than the EU-28 average, whereas the second is lower). Meanwhile, training on how to prevent psychosocial risks is much less prevalent in Austria (and it is below the EU-28 average).

1 Introduction

1.1 Background

This is the national musculoskeletal disorders (MSDs) facts and figures overview report for Austria ([1]). This national report is part of a much larger project, '**MSDs facts and figures overview: prevalence, costs and demographics of MSDs in Europe**', intended to support policy-makers at EU and national levels by providing an accurate picture of the prevalence and costs of MSDs across Europe, pulling together existing data from a number of relevant and reliable official statistical sources. This national report is considered complementary to the overview report covering the EU as a whole, *Work-related musculoskeletal disorders: prevalence, costs and demographics in the EU – Final report* ([2]).

The European Agency for Safety and Health at Work (EU-OSHA), aware of the limits of EU data sources related to MSDs, decided to complement and enrich EU-level findings with national data and analyses. This national report is not intended to provide a comprehensive and exhaustive national overview of MSDs. Rather, the main criteria followed in relation to gathering national data were to identify and focus on national MSD-related information that is either not available at EU level or complementary to existing data. Moreover, EU-OSHA considers that making the information/data identified at national level accessible to the European occupational safety and health (OSH) community and Member States (by publishing it in English) is also important. By sharing this national data at EU level, EU-OSHA aims to improve knowledge on the MSD topic among policy-makers, OSH professionals and national authorities in general.

This national report is structured into five chapters, including this introductory chapter, Chapter 1. Chapter 2 presents some data on the prevalence of MSDs among national workers, as well as information on MSD-related occupational diseases. Chapter 3 analyses the impact of MSDs, presenting information on health, work and employment outcomes (including information on costs linked to MSDs). Chapter 4 identifies several risk factors underpinning MSDs, including physical as well as organisational/psychosocial and sociodemographic risk factors. Chapter 5 provides some information related to activities carried out by enterprises/establishments intended to prevent MSDs within the workforce, including training and support activities to help workers returning to work. Finally, the report lists the main national data sources on MSDs along with (when possible) links through which this information can be accessed. All chapters follow the same structure: each chapter presents national data on MSDs based on EU-level data sources and these data are subsequently complemented with information from national data sources (if any). This has been done to ensure that all reports contain a minimum level of basic information, harmonised for all the Member States analysed.

The structure of this national report is the same as that of the general European overview report (mentioned above), and readers are invited to consult the information available in the equivalent chapter of the general European report for a more comprehensive overview of the issues addressed in this national report.

From a methodological perspective, the information presented in this report comes from national data sources based either on surveys or on administrative data related to the issue of MSDs. This national information has been complemented in some cases with information from European/international data sources to allow comparisons between national and EU-level results.

([1]) Information about the occupational safety and health system in Austria is available at: https://oshwiki.eu/wiki/OSH_system_at_national_level_-_Austria

([2]) This report is available at: https://osha.europa.eu/en/publications/msds-facts-and-figures-overview-prevalence-costs-and-demographics-msds-europe/view

1.2 Causes and consequences of MSDs: a framework

1.2.1 Main sources of information on MSDs

MSDs refer to impairments of bodily structures such as muscles, joints, tendons, ligaments, nerves, cartilage, bones and the localised blood circulation system (EU-OSHA, 2002) ([3]). If MSDs are caused or aggravated primarily by work and by the effects of the immediate environment in which work is carried out, they are known as work-related MSDs.

The two main sources of information and data regarding MSDs are surveys based on self-reporting and administrative data.

In the case of self-reporting, people are asked whether or not they suffer from an MSD (either in general or a specific type of MSD). When assessing the prevalence of MSDs through surveys, it is customary to ask about the part of the body affected by health complaints and not about the clinical nature of complaints.

Questions regarding the prevalence of MSDs are included in different surveys. The formulation of the questions used varies between surveys and also between different waves of these surveys. These differences are likely to result in different outcomes.

Another important source of information is administrative data. Two examples of available administrative data are:

- data on the number (and proportion) of occupational diseases recognised to be due to diseases of the musculoskeletal system and connective tissue;
- data on declared work-related accidents.

Estimates of MSD prevalence based on self-reporting may include people with relatively mild health complaints as well as people with severe health complaints. Statistics based on administrative data are likely to include only people with more severe health complaints (severe enough to result in the complaint being recognised as an occupational disease).

1.2.2 A multidimensional model of MSDs

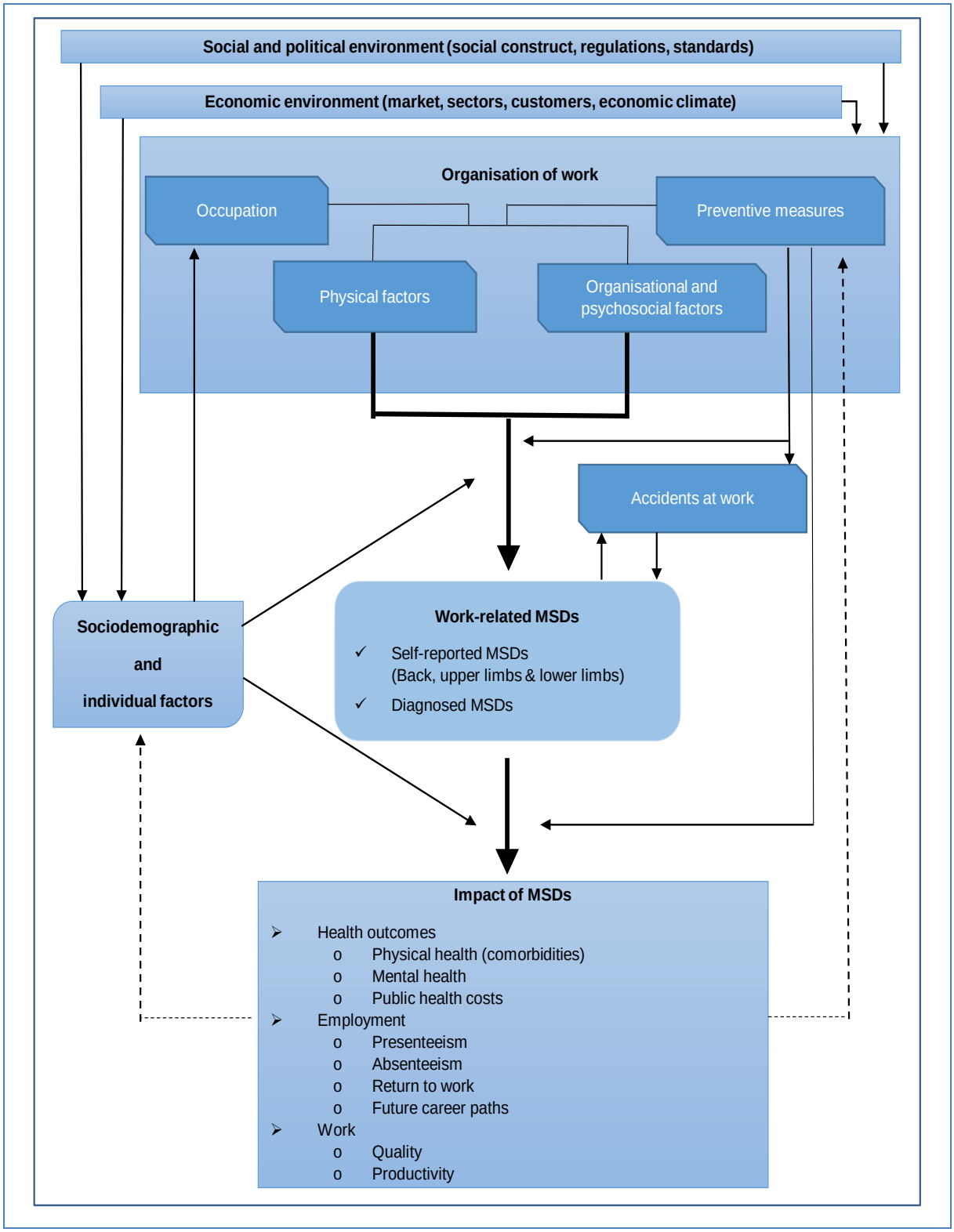
MSDs can be caused by many different (combinations of) factors and may have many different consequences. Figure 1 shows the main causes and consequences of MSDs that have been identified in previous studies.

The objective of this national report is to present additional country-specific information regarding the following aspects of the framework depicted in Figure 1:

- the prevalence of MSDs;
- the impact of MSDs;
- risk factors for MSDs;
- the prevention of MSDs.

([3]) EU-OSHA — European Agency for Safety and Health at Work, 'Introduction to work-related musculoskeletal disorders', *Facts 71*, 2002. Available at: https://osha.europa.eu/sites/default/files/publications/documents/en/publications/factsheets/71/Factsheet_71_-_Introduction_to_work-related_musculoskeletal_disorders.pdf

Figure 1: Theoretical framework of work-related MSDs



Note: Theoretical framework developed by Panteia, vhp performance and IKEI

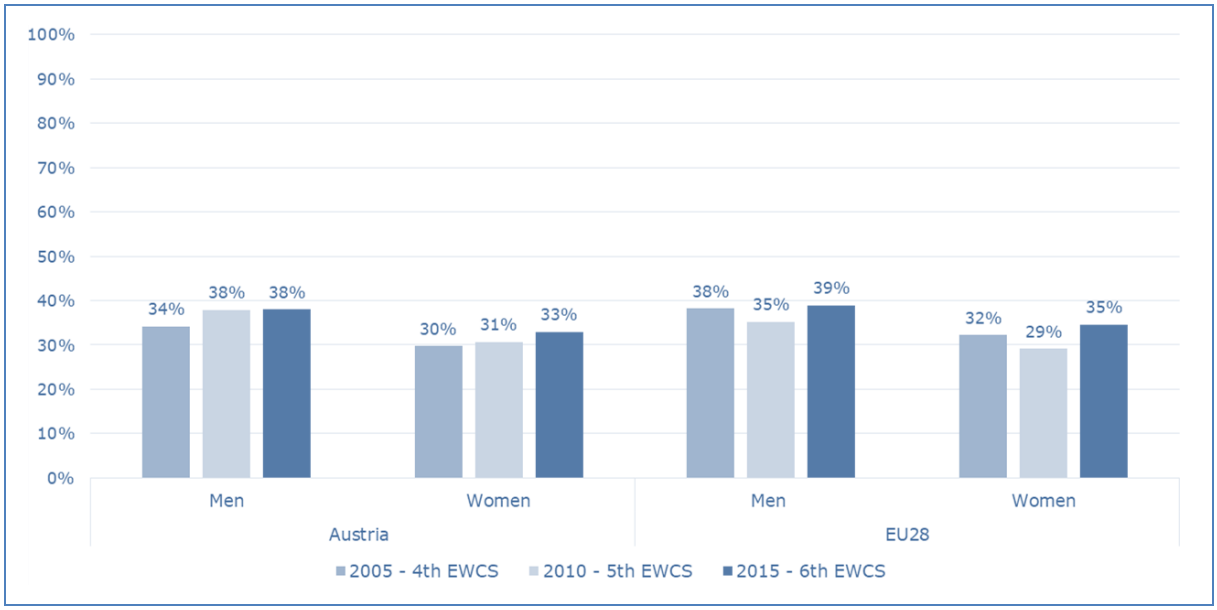
2 Prevalence of MSDs

2.1 Self-reported MSDs

In this chapter, an overview of the prevalence of MSDs in Austria and in comparison with the EU-28 is presented.

First, Figure 2 illustrates the percentages of workers, by gender, in Austria who report that their work affects their health. Around 38 % of men and 33 % of women report that their work affects their health (data for 2015); both percentages are relatively similar to, although slightly lower than, the EU-28 averages (39 % and 35 %, respectively).

Figure 2: Percentages of workers who reported that their work affects their health in the EU-28 and Austria, by gender, in 2005, 2010 and 2015



Source: Panteia, based on data from the 2005, 2010 and 2015 waves of the European Working Conditions Survey (EWCS) ([4])

The main focus is on three specific categories of MSDs, namely back pain, muscular pain in the upper limbs and muscular pain in the lower limbs.

Figure 3 shows the percentages of workers who reported back pain in the past 12 months in the EU-28 and in Austria. According to the available information, back pain is slightly more prevalent in Austria than in the EU-28. In 2015, 47 % of Austrian workers reported back pain in the past 12 months, whereas this percentage was 43 % in the EU-28.

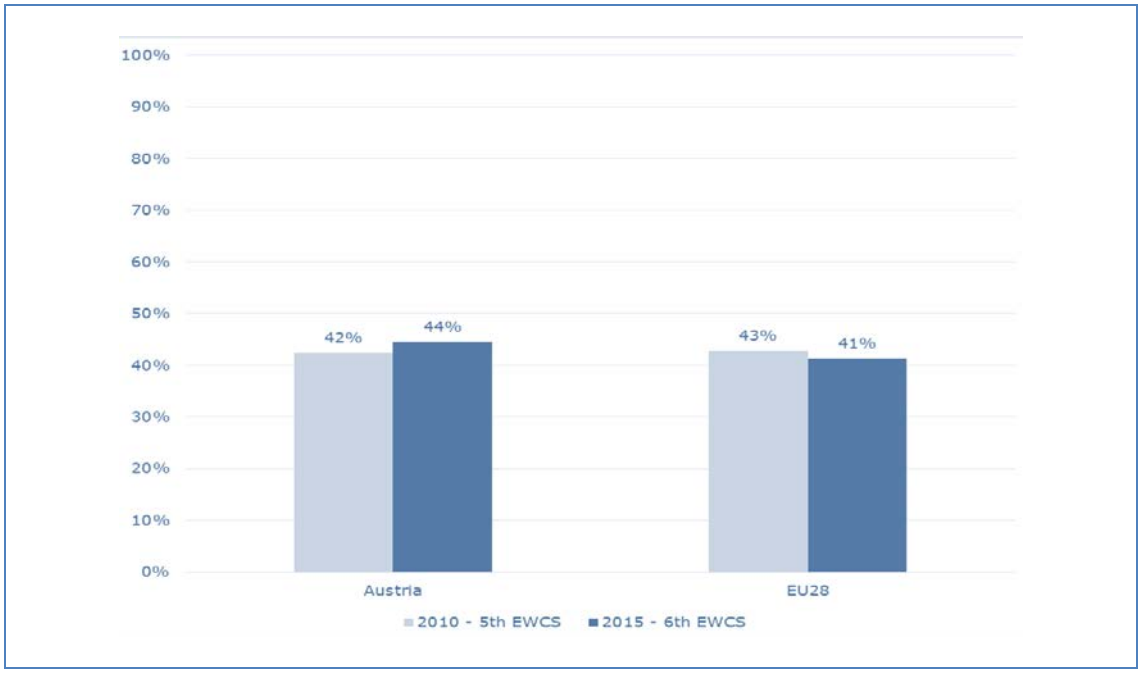
([4]) Eurofound (European Foundation for the Improvement of Living and Working Conditions), EWCS. Information about the survey is available at: https://www.eurofound.europa.eu/surveys/european-working-conditions-surveys

Figure 3: Percentages of workers who reported back pain in the past 12 months in the EU-28 and Austria, in 2010 and 2015

Source: Panteia, based on data from the 2010 and 2015 waves of the EWCS

Figure 4 illustrates the percentage of workers who reported muscular pain in the shoulders, neck and/or upper limbs in the past 12 months in the EU-28 and in Austria. According to the available data, the percentage of Austrian workers reporting this type of muscular pain was 44 % in 2015, which was slightly higher than in the EU-28 (41 %). The percentages have been relatively stable since 2010.

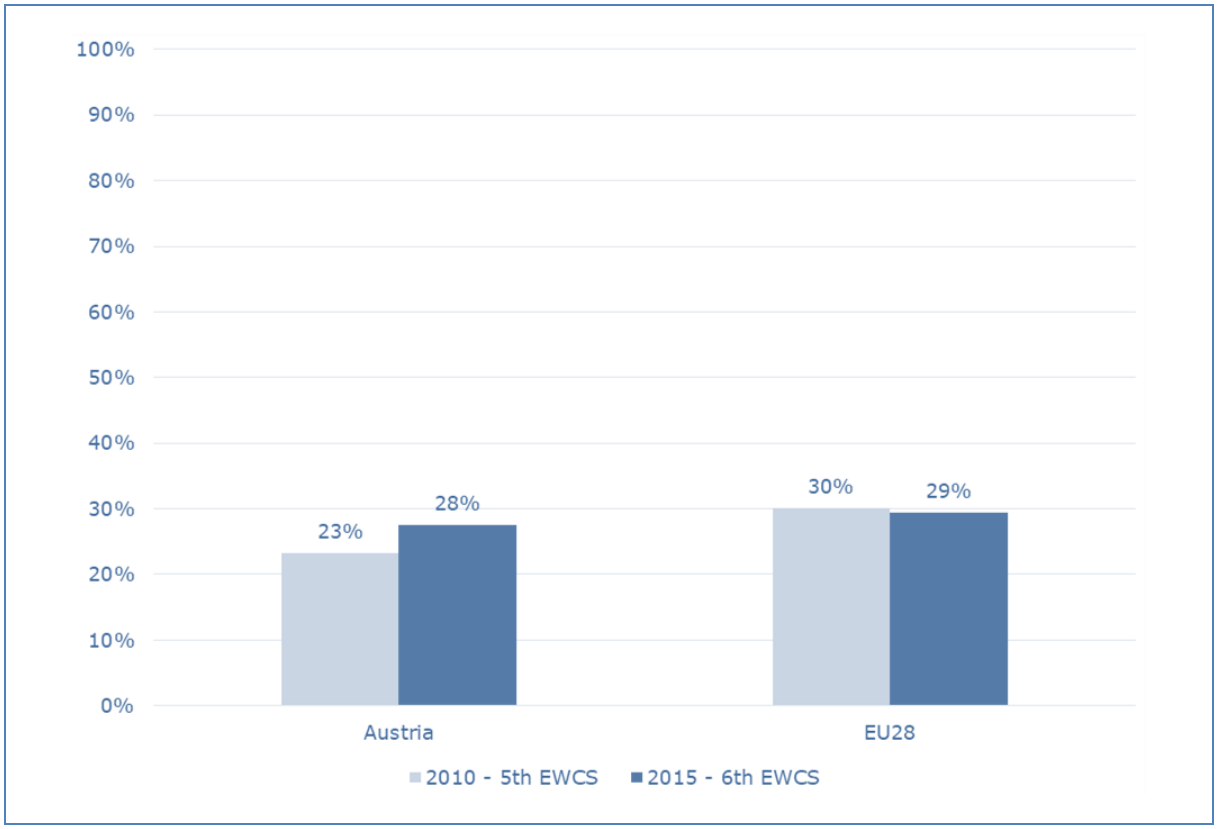
Figure 4: Percentages of workers who reported muscular pains in the shoulders, neck and/or upper limbs in the past 12 months in the EU-28 and Austria, in 2010 and 2015



Source: Panteia, based on data from the 2010 and 2015 waves of the EWCS

Finally, Figure 5 presents the percentages of workers who reported muscular pain in the lower limbs in the past 12 months in the EU-28 and in Austria. The available data show that the percentage of Austrian workers reporting being affected by this type of muscular pain was 28 % in 2015, which was similar to the figure for the EU-28 (29 %). Compared with the 2010 data, the 2015 data show a significant increase in the percentage of people affected in Austria.

Figure 5: Percentages of workers who reported muscular pains in the lower limbs in the past 12 months in the EU-28 and Austria, in 2010 and 2015



Source: Panteia, based on data from the 2010 and 2015 waves of the EWCS

According to national data ([5]), the most common work-related health problem among Austrian workers is back problems (affecting almost one-third of respondents (32.2 %), followed by neck, shoulder and arm problems (reported by 19.0 % of respondents) and hip, leg or foot problems (reported by 16.3 % of workers). While men were more likely to have back problems (33.7 %, compared with 30.6 % of women) or hip, leg and foot problems (18.1 %, compared with 14.3 % of women), women were more likely to have problems with the neck, shoulders, arms or hands (23.4 %, compared with 14.9 % of men) (see Table 1).

Other work-related health problems affected a much lower percentage of people. For instance, around 4-6 % of those in employment reported that stress, depression or anxiety, a respiratory or lung condition, or a heart condition was their biggest work-related health problem. Depression or anxiety was almost twice as common in women as in men (6.5 %, compared with 3.4 %). Conversely, problems with the respiratory system (5.7 % of men, compared with 2.9 % of women) and heart problems (5.9 % of men, compared with 2.7 % of women) were the most common occupational health problems among men.

([5]) Statistik Austria — Work-related accidents and work-related diseases 2013 (Arbeitsunfälle und arbeitsbezogene Gesundheitsprobleme 2013), 2013. Available at: http://www.statistik.at/web_de/services/publikationen/4/index.html?includePage=detailedView&sectionName=Gesundheit&pubId=694

Other problems (problems with the digestive organs, hearing problems, infectious diseases, eye strain and fatigue, headaches and skin problems) affected even fewer people.

Table 1: Most relevant work-related health problems by gender in Austria, 2013 (percentage of workers affected in the past year)

Disease group	Total	Men	Women
Bone, joint or muscle problems (back)	**32.2**	**33.7**	**30.6**
Bone, joint or muscle problems (neck, shoulders, arms, hands)	**19.0**	**14.9**	**23.4**
Bone, joint or muscle problems (hips, legs, feet)	**16.3**	**18.1**	**14.3**
Stress	5.7	5.2	6.1
Other health complaint	5.0	5.3	4.6
Depression, anxiety	4.9	3.4	6.5
Breathing problems, problems with the lungs	4.4	5.7	2.9
Heart disease, heart attack, other cardiovascular problems	4.4	5.9	2.7
Problems with the stomach, liver or kidney, indigestion	2.2	1.7	2.7
Hearing problems	1.5	2.3	1.0
Infectious disease (viruses, bacteria, etc.)	1.5	1.0	2.0
Strain or fatigue of the eyes	1.3	1.0	1.7
Headaches	1.0	0.8	1.4
Skin problems	0.8	1.2	0.3

Source: Statistik Austria, Work-related accidents and work-related diseases 2013 (Arbeitsunfälle und arbeitsbezogene Gesundheitsprobleme 2013), 2013.

An in-depth review of the personal characteristics of workers with a work-related MSD shows that, generally speaking, these problems are much more common in older workers, and in workers educated to ISCED levels 3 and 4 (upper secondary education) (see Table 2). Furthermore, the available data show that MSD-related problems are particularly common in specific sectors, particularly manufacturing, health and social work, construction and agriculture/forestry/fishing, as well as in trade, public administration, and transport and logistics. Finally, MSDs are also particularly common among specific occupational groups, such as craft and related jobs, service professions, technicians, plant and machinery operators and unskilled occupations.

Table 2: Percentages of workers with a work-related MSD, by type of MSD and individual characteristics, level of education, economic sector and occupational group in Austria, 2013

Disease group	Bone, joint or muscle problems (neck, shoulders, arms, hands)	Bone, joint or muscle problems (hips, legs, feet)	Bone, joint or muscle problems (back)
Age			
15-30 years old	5.8	3.1	7.0
30-45 years old	18.1	10.7	22.0
45-60 years old	47.6	39.3	40.9
over 60 years old	28.4	46.9	30.1
Level of education			
ISCED 0-2	26.9	34.5	21.8
ISCED 3-4	60.1	57.8	67.2
ISCED 5-6	13.0	7.8	11.0
Economic sector			
Agriculture and forestry; fishing	5.6	7.8	6.6
Mining and quarrying	n.a.	n.a.	n.a.
Manufacturing	9.4	11.2	13.6
Energy supply	n.a.	n.a.	n.a.
Water supply; wastewater and waste	n.a.	n.a.	n.a.
Construction	9.9	11.5	9.5
Trade; maintenance and repair of motor vehicles	10.2	6.0	9.6
Transport and logistics	n.a.	4.6	4.4
Hotels, restaurants and catering	5.8	7.3	4.2
Information and communication	n.a.	n.a.	n.a.
Financial and insurance services	n.a.	n.a.	n.a.
Real estate and housing	n.a.	n.a.	n.a.
Scientific and technical services	3.2	n.a.	n.a.
Other economic services	3.5	n.a.	2.3
Public administration, defence, social security	7.4	n.a.	5.5
Education	5.0	n.a.	3.6
Health and social work	9.8	5.2	10.5
Arts, entertainment and recreation	n.a.	n.a.	n.a.
Other services	n.a.	n.a.	2.6
Occupational group			
Executives	n.a.	n.a.	1.9
Academics and comparable professionals	8.6	3.7	6.4
Technicians and equivalent non-technical professionals	11.7	6.7	10.9
Office staff and comparable professionals	8.1	n.a.	5.4
Service professionals and salespeople	18.8	12.8	15.5
Professionals in agriculture, forestry and fishing	6.2	7.7	6.4
Workers in craft and related jobs	11.9	13.3	15.7
Plant and machinery operators and installation professionals	n.a.	7.2	8.8
Workers in elementary occupations	13.2	8.5	8.3
Soldiers	n.a.	n.a.	n.a.
TOTAL	**100.0**	**100.0**	**100.0**

Note: n.a., not available

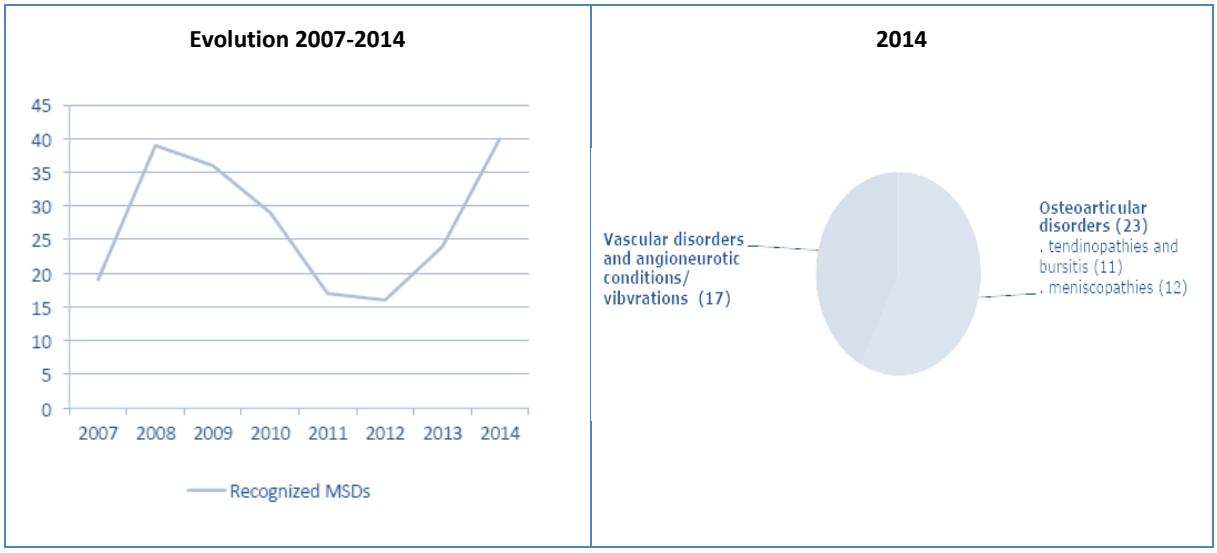
Source: Statistik Austria, Work-related accidents and work-related diseases 2013 (Arbeitsunfälle und arbeitsbezogene Gesundheitsprobleme 2013), 2013.

2.2 MSD-related occupational diseases

Available national data ([6])on MSDs reported and recognised as occupational diseases show that in 2014 there were 40 recognised MSD-related cases out of a total of 1,129 recognised occupational diseases (approximately 3 % of the total). In addition, available data show that in Austria, only 1 case was recognised per 100,000 insured people (in 2014).

From a time trend perspective, available data for the period from 2007 to 2014 show a very irregular pattern in the number of recognised MSDs. The largest proportion of cases involved osteoarticular disorders (23 out of 40 cases), followed by vascular disorders and angioneurotic conditions/vibrations (17 cases) (see Figure 6).

Figure 6: Trend in recognised MSDs and distribution of MSD cases recognised as occupational diseases, Austria



Source: Eurogip, 2016.

Furthermore, based on national data from the Austrian Institute for Economic Research (WIFO) for 2017 ([7]), it is possible to add the following:

- The frequency of suffering from an MSD is one-sixth higher in men than in women.
- Regarding sick leave due to MSDs, women's sick leave is around 2 days longer on average than men's.
- The proportion of MSDs in all diagnosed diseases increases with the age of the employee. For example, MSDs are the reason for about 10 % of sick leave days among employees aged 15-49. The proportion increases to 33 % in employees aged 50-64.

([6]) Information obtained from Eurogip, *Musculoskeletal disorders: What recognition as occupational diseases? A study on 10 European countries*, 2016. Available at: https://www.eurogip.fr/en/news/4427-msds-what-recognition-as-occupational-diseases-in-europe

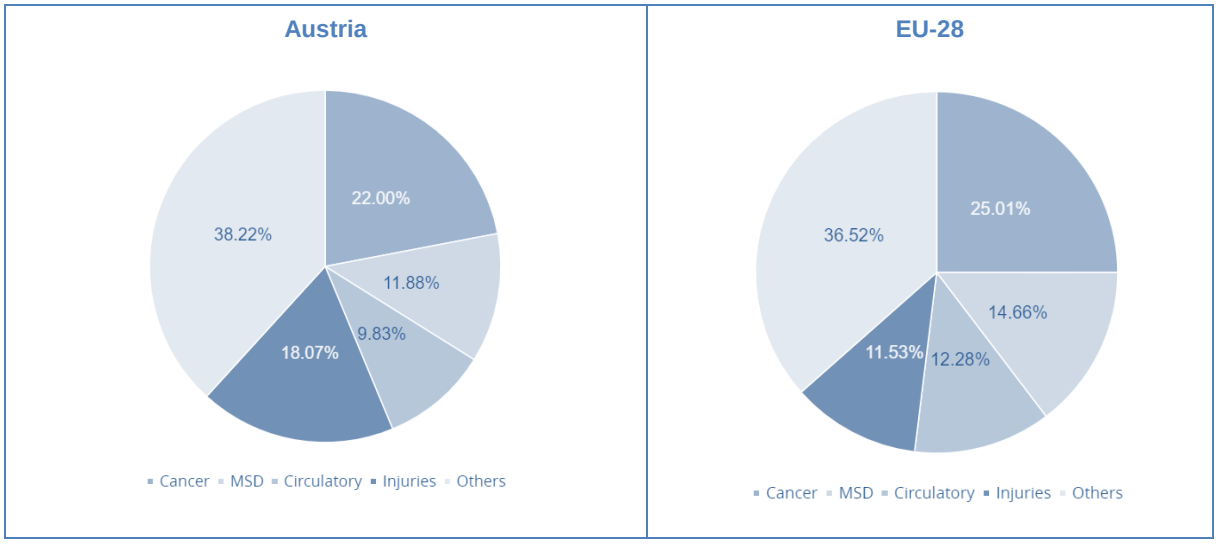
([7]) WIFO, Report on sick leave 2017 (Fehlzeitenreport 2017), 2017. Available at: http://www.hauptverband.at/cdscontent/load?contentid=10008.646602&version=1510674740

3 Impact of MSDs

3.1 Health outcomes

With regard to costs and burdens related to MSDs, the available data([8]) on DALY rates ([9]) show that the number of years of life lost and lived with disability resulting from work-related MSDs represent 11.88 % of the total number of years of life lost and lived with disability due to different reasons (cancer, circulatory, injuries, etc.), which is slightly lower than the EU-28 average (14.66 %) (see Figure 7).

Figure 7: Distribution of years of life lost and lived with disability (DALYs) per 100,000 workers, by main work-related illnesses, in Austria and the EU-28, 2017



Source: Panteia, based on EU-OSHA, data visualisation, 'The economics of occupational safety and health', 2017. Available at: https://visualisation.osha.europa.eu/osh-costs#!/eu-analysis-illness

3.2 Employment and work outcomes

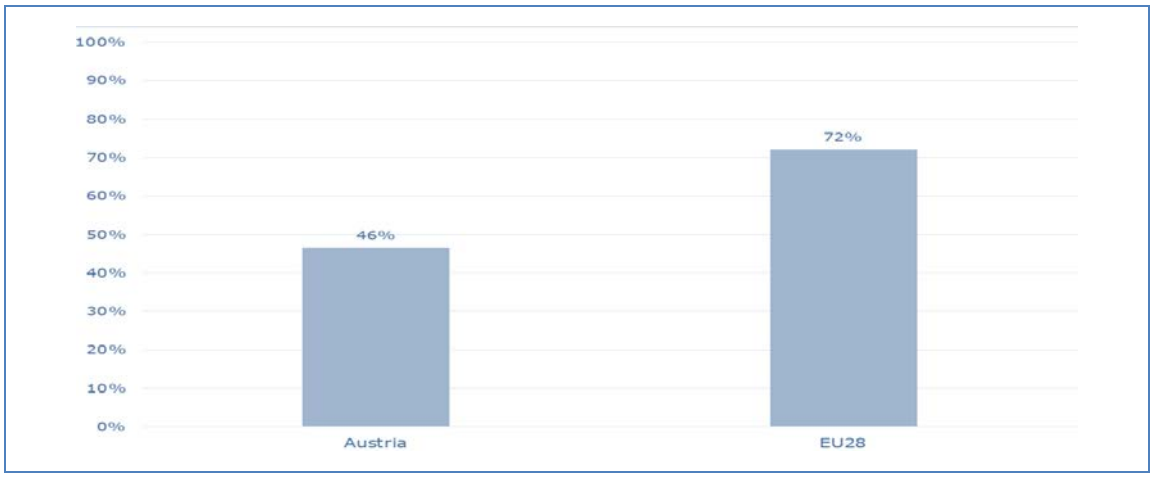
Approximately half of Austrian employees (46 %) work in companies that support employees to return to work after long-term sickness. This percentage is much lower than in the EU-28 (72 %) (data from ESENER 2 ([10]) for 2014; see Figure 8).

([8]) EU-OSHA, data visualisation, 'The economics of occupational safety and health', 2017. Available at: https://visualisation.osha.europa.eu/osh-costs#!/eu-analysis-illness

([9]) A DALY is the sum of years of life lost (YLL) because of work-related death and years of life lived with disability (YLD) due to work-related injury and illness. DALY rate refers to DALYs per 100,000 workers.

([10]) EU-OSHA, Second European Survey of Enterprises on New and Emerging Risks (ESENER 2). Information about the survey is available at: https://osha.europa.eu/en/facts-and-figures/esener

Figure 8: Percentages of employees working in establishments with support measures for employees returning to work after long-term sickness in the EU-28 and Austria, 2014

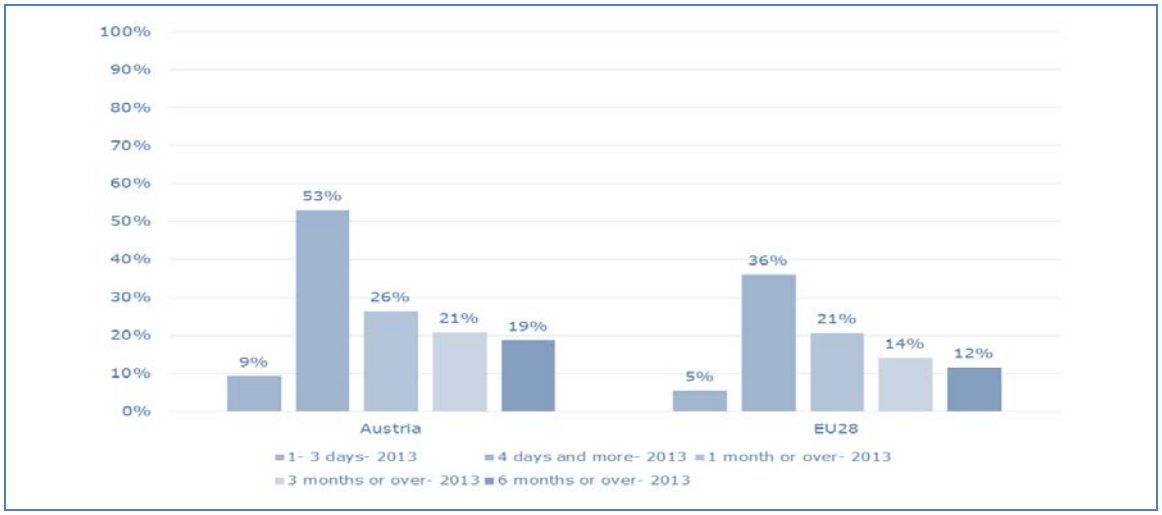


Note: Data are weighted with the employee-proportional weighting factor. This weighting factor controls for the disproportional nature of the national samples, is scaled to the number of employees instead of the number of establishments in the universe, and allows for international analysis. ESENER covers employees in enterprises employing five or more workers.

Source: Panteia, based on ESENER 2 data

Figure 9 is based on publicly available data from the Labour Force Survey (LFS) ([11]) ad hoc modules. It shows the percentages of people who reported a work-related health problem resulting in sick leave characterised by various periods off work, in the EU-28 and in Austria in 2013. The available data show that up to 53 % of Austrian workers in this situation had a period of 4 days or more off work, in comparison with 36 % in the EU-28. Moreover, 19 % of Austrian workers reporting a work-related health problem resulting in sick leave had a period off work of 6 months and over, compared with 12 % on average in the EU-28.

Figure 9: Percentages of people reporting a work-related health problem resulting in sick leave by period off work, in the EU-28 and Austria, 2013



Source: Panteia, based on LFS ad hoc module (Eurostat)

([11]) Eurostat, European Union LFS ad hoc module on accidents at work and other work-related health problems. Information about the survey is available at: https://ec.europa.eu/eurostat/web/microdata/european-union-labour-force-survey

The data set out above can be complemented by some specific national data on new health-related retirement pensions in Austria for the years 2001 and 2006 ([12]). According to the available data, MSDs are the main underlying reason for these new health-related retirement pensions in both years (see Table 3). In 2006, MSDs were responsible for 32.5 % of these new pensions; the second and third most common causes were mental/behavioural disorders and diseases of the circulatory system (26.8 % and 13.1 % of the total new pensions, respectively). MSDs are the most common reason for health-related retirement pensions in men (34.2 % of all cases), whereas in women they are the second most common reason (29.5 % of cases) after mental/behavioural disorders (34.6 % of all cases).

Table 3: Percentages of new health-related retirement pensions related to certain diseases in Austria, by gender, 2001 and 2006

Disease group	2001			2006		
	Total	Men	Women	Total	Men	Women
Certain infectious and parasitic diseases	0.8	0.9	0.6	0.7	0.8	0.5
Malignant neoplasms	9.3	7.7	13.0	8.4	7.2	10.6
Endocrine, nutritional and metabolic diseases	2.8	3.0	2.2	3.1	3.4	2.5
Mental/behavioural disorders	21.1	17.4	29.5	26.8	22.6	34.6
Diseases of the nervous system	5.4	4.8	6.9	4.9	4.7	5.4
Diseases of the circulatory system	12.9	15.3	7.6	13.1	15.8	8.1
Diseases of the respiratory system	3.4	3.9	2.3	3.4	4.1	2.2
Diseases of the digestive system	2.0	2.0	1.9	1.8	2.0	1.4
Skin and subcutaneous diseases	0.4	0.4	0.4	0.5	0.5	0.7
Musculoskeletal disorders	**34.9**	**37.7**	**28.4**	**32.5**	**34.2**	**29.5**
Diseases of the genitourinary system	1.1	0.8	1.6	0.9	0.8	1.0
Clinical abnormal findings and symptoms	2.1	1.8	2.7	2.1	2.1	1.9
Injuries and poisoning	3.4	4.2	1.6	1.5	2.0	0.7
Other	0.3	n.a.	1.1	0.3	n.a.	0.9
Total	100.0.	100.0.	100.0	100.0	100.0	100.0

Note: n.a., not available

Source: WIFO, 2009

Complementing the information set out above, the available national information ([13]) on sick leave in Austria shows that MSDs are the third most common reason for taking sick leave in terms of numbers of cases (13.2 % of the total), after diseases of the respiratory system and certain infectious and parasitic diseases (37.0 % and 16.1 % of all cases, respectively) (data for 2016; see Table 4). Meanwhile, MSDs account for more working days lost than any other type of health problem, accounting for 21.4 % of the total sick leave days in 2016 in Austria, with diseases of the respiratory system and injuries/poisoning/other external causes being the reasons for 20.6 % and 16.4 %, respectively. Finally, the average duration of sick leave caused by MSDs was 15.8 days, well above the duration of the

([12]) Austrian Institute for Economic Research (WIFO), Stress at workplace, work-related diseases and disability (Arbeitsplatzbelastungen, arbeitsbedingte Krankheiten und Invalidität), 2009 (available at: https://www.wifo.ac.at/jart/prj3/wifo/resources/person_dokument/person_dokument.jart?publikationsid=35901&mime_type=application/pdf)

([13]) WIFO, Report on sick leave 2017 (Fehlzeitenreport 2017), 2017. Available at: http://www.hauptverband.at/cdscontent/load?contentid=10008.646602&version=1510674740

average sick leave period in Austria (9.8 days) but below the average duration of sick leave caused by other health problems such as neoplasms, mental/behavioural disorders and diseases of the circulatory system (38.5 %, 37.2 % and 19.5 % days, respectively).

Table 4: Percentages of sick leave cases and sick leave days and average duration of sick leave in Austria, by type of disease, 2016

Disease group	Sick leave cases (%)	Sick leave days (%)	Average duration of sick leave (days)
Diseases of the musculoskeletal system and connective tissue	**13.2**	**21.4**	**15.8**
Diseases of the respiratory system	37.0	20.6	5.4
Injuries, poisoning and certain other consequences of external causes	8.2	16.4	19.4
Mental/behavioural disorders	2.4	9.2	37.2
Certain infectious and parasitic diseases	16.1	7.0	4.2
Symptoms and abnormal clinical and laboratory findings not classified elsewhere	5.7	4.3	7.3
Diseases of the digestive system	5.1	3.9	7.5
Diseases of the circulatory system	1.8	3.6	19.5
Neoplasms	0.9	3.5	38.5
Diseases of the genitourinary system	2.3	2.3	9.5
Diseases of the nervous system	2.0	1.9	9.1
Pregnancy, childbirth	0.9	1.2	12.6
Diseases of the skin and the subcutaneous tissue	1.1	1.2	10.8
Diseases of the eye and the appendages of the eye	1.0	0.8	7.8
Other causes	0.4	0.8	18.1
Endocrine, nutritional and metabolic diseases	0.4	0.8	19.4
Diseases of the ear and mastoid	0.9	0.7	7.9
Diagnosis not detectable	0.3	0.2	6.8
Congenital malformations, deformities and chromosomal abnormalities	0.1	0.2	19.3
Diseases of the blood and blood-forming organs and certain disorders of the immune system	0.1	0.1	16.6
Certain states that originate in the perinatal period	n.a.	n.a.	11.1
Total	100.0.	100.0	9.8

Note: n.a., not available

Source: WIFO, 2017

Some additional national information on the duration of periods off work because of a work-related MSD is also available. In 2013, approximately 1 out of 3 workers suffering from problems in their hips, legs or feet, 1 out of 4 workers suffering from problems in their neck, shoulders, arms or hands and the same proportion of those suffering from problems in their back did not take any time off work because of their health problems (see Table 5). In contrast, problems in hips, legs or feet required longer periods off work (14.8 % of workers were off work for 1 month or more, and 8.2 % were still on sick leave) than problems in the neck, shoulders, arms or hands or problems in the back.

Table 5: Percentages of workers taking various periods off work because of a work-related MSD, by type of MSD, 2013

Disease group	Bone, joint or muscle problems (neck, shoulders, arms, hands)	Bone, joint or muscle problems (hips, legs, feet)	Bone, joint or muscle problems (back)
No period off work	39.5	28.5	39.8
1-3 days off	10.6	13.5	9.3
4-13 days off	15.2	14.6	18.1
2 weeks to 1 month	18.6	20.3	16.9
1 month or more	8.7	14.8	8.2
Still on sick leave or no return planned	7.3	8.2	7.6

Note: Data refer to workers who report having at least one work-related health problem

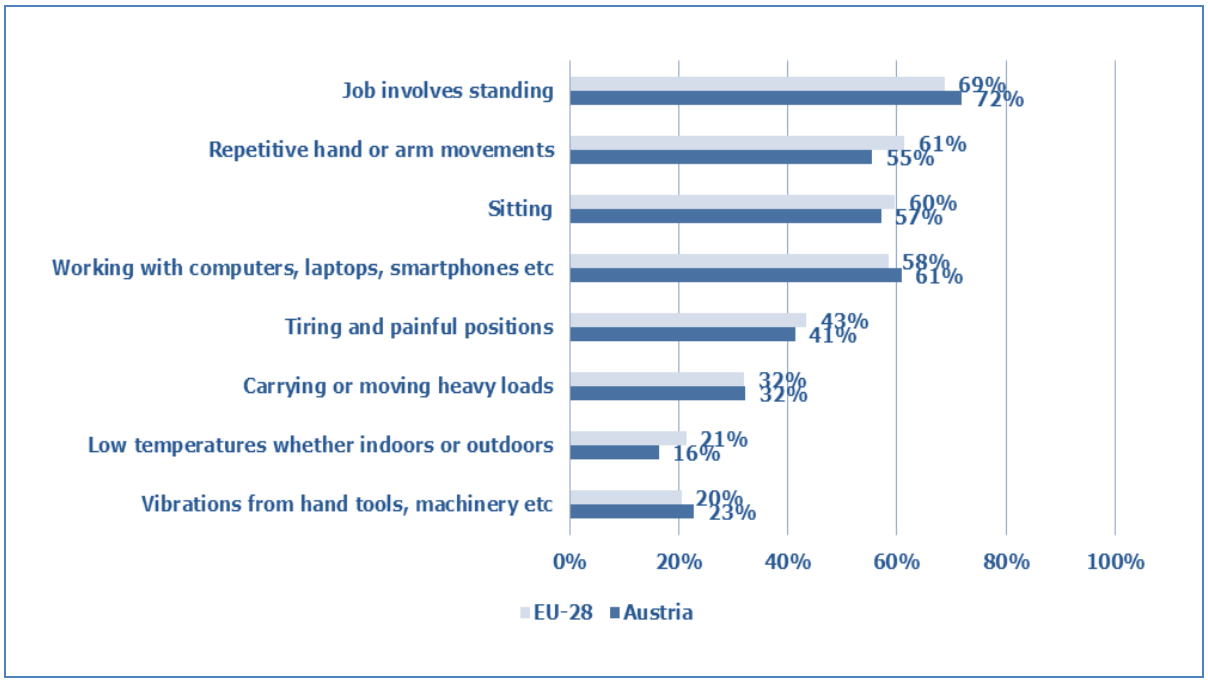
Source: Statistik Austria, work accidents and work-related health problems module of LFS 2013

4 Risk factors for MSDs

4.1 Physical factors at work

A large percentage of Austrian employees are exposed to physical factors at work that may have an influence on MSDs (see Figure 10). More precisely, 72 % of employees work in establishments where work involves standing positions, 61 % work with computers/laptops, 57 % work in sitting positions, 55 % work in jobs involving repetitive hand/arm movements and 41 % work in tiring/painful positions. Other physical risks such as carrying/moving heavy loads, low temperatures and the presence of vibrations are less prevalent.

Figure 10: Percentages of employees working in establishments where there are certain physical risk factors in Austria and the EU-28, 2015 (2010 for standing)



Note: Data are weighted with the employee-proportional weighting factor. This weighting factor controls for the disproportional nature of the national samples, is scaled to the number of employees instead of the number of establishments in the universe, and allows for international analysis. ESENER covers employees in enterprises employing five or more workers.

Source: Panteia, based on ESENER 2 data

A comparison with EU-level data shows that the relative importance of the different physical risk factors is similar in Austria to in the EU-28, with the exception of the risk linked to working with computers/laptops (which is particularly relevant in Austria). In addition, the available data show that Austrian employees are more exposed than their EU counterparts to some of the identified risks, in particular jobs involving standing, working with computers/laptops and the presence of vibrations, whereas Austrian employees are less exposed than their EU counterparts to the other physical risk factors.

National data complement the information set out above by identifying some of the most relevant risk factors for various MSD-related work-related health problems (data for 2013). According to these data, three factors can be identified as being particularly important risk factors for MSD-related health problems, specifically two physical risk factors (difficult work postures/difficult movements and handling heavy loads) and one psychosocial one (significant time pressure/work overload). These three risk factors can be related to all types of MSD-related health problems (see Table 6). Other, less relevant risk factors include two physical factors (work that strains the eyes and danger of accidents) and one psychosocial one (harassment/bullying in the workplace).

Table 6: Main risk factors for work-related MSDs, 2013, Austria

Risk factor	Bone, joint or muscle problems (neck, shoulders, arms, hands)	Bone, joint or muscle problems (hips, legs, feet)	Bone, joint or muscle problems (back)
Difficult work postures, difficult movements	++	++	++
Handling heavy loads	++	++	++
Work that involves eye strain	+	–	+
Danger of accidents	–	+	+
Significant time pressure or work overload	++	++	+
Harassment or bullying	+	–	+

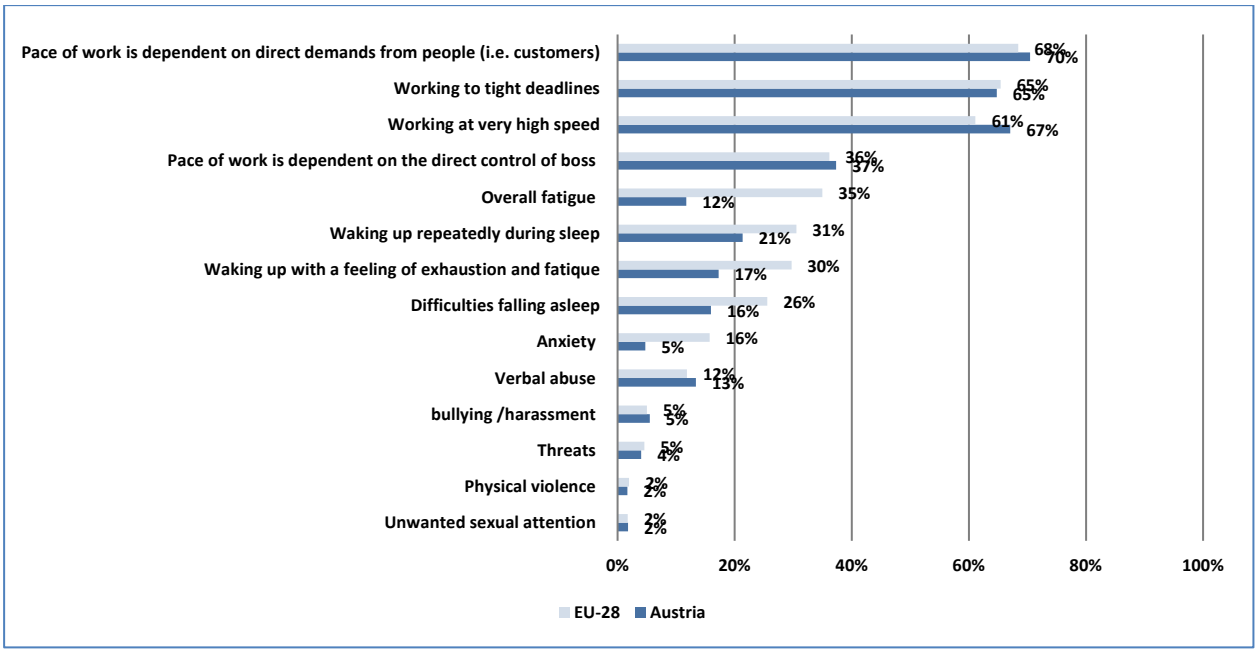
Note: '–' means that no relationship has been identified

Source: Statistik Austria, work accidents and work-related health problems module of LFS 2013

4.2 Organisational and psychosocial risk factors

Organisational and psychosocial risk factors also play a role as potential triggers of MSDs (see Figure 11). The most relevant of these factors among Austrian employees are the pace of work being dependent on other people's demands, working at very high speed and the presence of tight deadlines (more than 65 % of employees work in establishments where these risks are present). Meanwhile, other relatively important risks include the pace of work being under the direct control of the boss or, generally speaking, difficulties with sleep.

Figure 11: Percentages of employees working in establishments where certain organisational/psychosocial risk factors are present in Austria and the EU-28, 2015



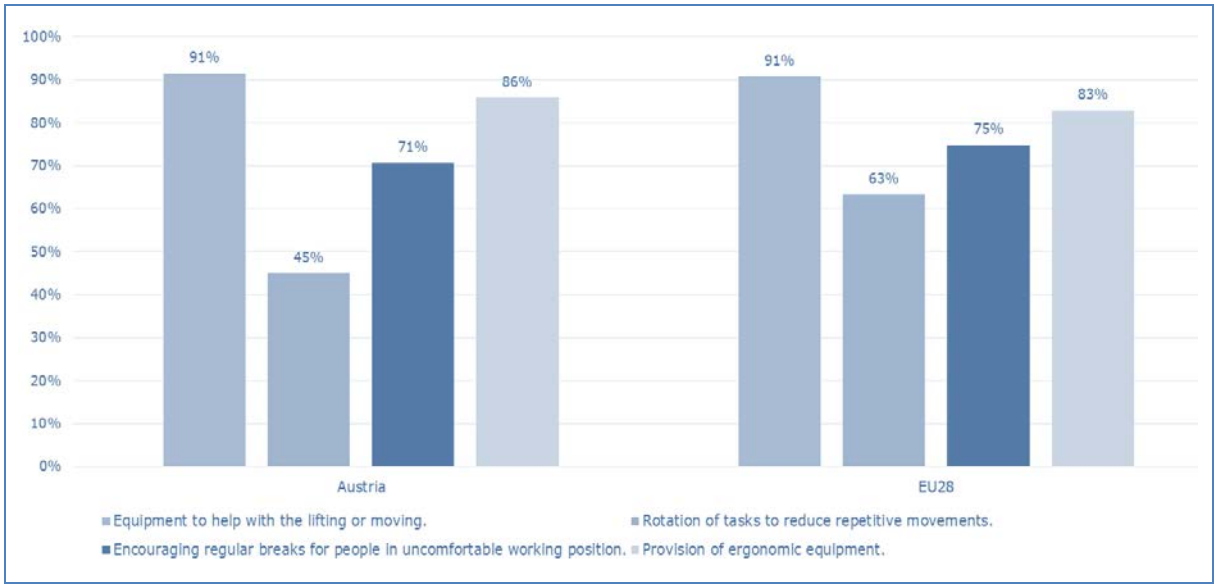
Note: Data are weighted with the employee-proportional weighting factor. This weighting factor controls for the disproportional nature of the national samples, is scaled to the number of employees instead of the number of establishments in the universe, and allows for international analysis. ESENER covers employees in enterprises employing five or more workers. Source: Panteia, based on ESENER 2 data

A comparison with EU-level data shows that the most relevant organisational and psychosocial risk factors are very similar in Austria and in the EU-28, although working at very high speed is a particularly important risk factor in Austria. In addition, the available data show that Austrian employees are more exposed than their EU counterparts to the three most important risk factors, as well as to verbal abuse. The remaining risks seem to be less prevalent in Austria than on average in the EU-28.

5 Prevention of MSDs

A high proportion of Austrian companies report implementing measures to prevent MSDs within their establishments: 91 % of employees work in companies where equipment to help with lifting or moving is provided, and 86 % work in companies where ergonomic equipment is provided. Moreover, 71 % of Austrian employees work in companies that encourage regular breaks for people who work in uncomfortable positions and 45 % work in companies where rotation of tasks has been introduced to reduce repetitive movements (data for 2014; see Figure 12). In some cases, these percentages are similar to or higher than the EU-28 averages, particularly in the case of the provision of ergonomic equipment (83 % in the EU-28), whereas in other cases (encouraging breaks and rotation of tasks) the EU-28 averages are higher (75 % and 63 %, respectively).

Figure 12: Percentages of employees working in establishments where the following preventive measures are in place, EU-28 and Austria, 2014

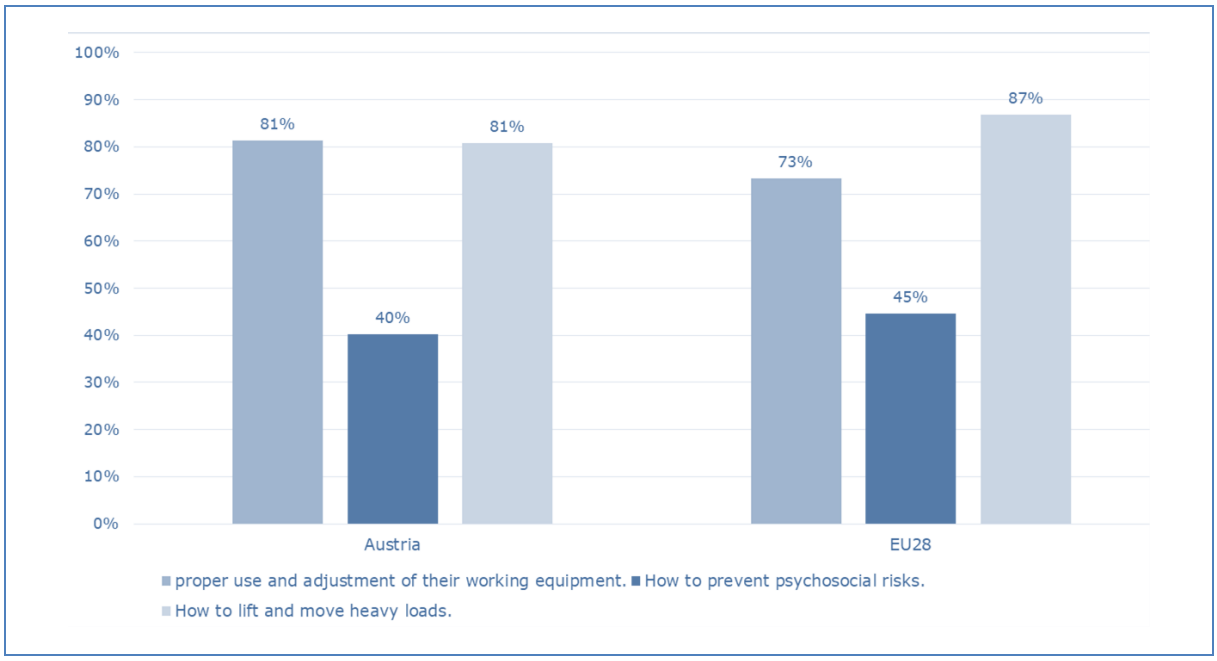


Note: Data are weighted with the employee-proportional weighting factor. This weighting factor controls for the disproportional nature of the national samples, is scaled to the number of employees instead of the number of establishments in the universe, and allows for international analysis. ESENER covers employees in enterprises employing five or more workers.

Source: Panteia, based on ESENER 2 data

As shown in Figure 13, 81 % of Austrian employees work in companies where training on how to lift and move heavy loads is provided, 81 % work in companies where training on the proper use and adjustment of work equipment is provided and 40 % work in companies where training on how to prevent psychosocial risks is provided (data for 2014). The percentage is higher than the EU-28 average only in the case of training on proper use and adjustment of work equipment (73 % in the EU-28).

Figure 13: Percentages of employees working in establishments where training is provided in the EU-28 and Austria, 2014



Note: Data are weighted with the employee-proportional weighting factor. This weighting factor controls for the disproportional nature of the national samples, is scaled to the number of employees instead of the number of establishments in the universe, and allows for international analysis. ESENER covers employees in enterprises employing five or more workers.

Source: Panteia, based on ESENER 2 data

6 Main national data sources on MSDs

- Data source 1: Austrian Institute for Economic Research (WIFO), Stress at workplace, work-related diseases and disability (Arbeitsplatzbelastungen, arbeitsbedingte Krankheiten und Invalidität), 2009 (see https://www.wifo.ac.at/jart/prj3/wifo/resources/person_dokument/person_dokument.jart?publikationsid=35901&mime_type=application/pdf)
- Data source 2: Statistik Austria — Work-related accidents and work-related diseases 2013 (Arbeitsunfälle und arbeitsbezogene Gesundheitsprobleme 2013), 2013. Available at: http://www.statistik.at/web_de/services/publikationen/4/index.html?includePage=detailedView&sectionName=Gesundheit&pubId=694
- Data source 3: Österreichische Sozialversicherung — Statistics related to work-related diseases 2017 (Berufskrankheitenstatistik 2017), 2017. Available at: https://www.auva.at/cdscontent/load?contentid=10008.542548&version=1524129047
- Data source 4: WIFO — Report on sick leave 2017 (Fehlzeitenreport 2017), 2017. Available at: http://www.hauptverband.at/cdscontent/load?contentid=10008.646602&version=1510674740
- Data source 5: Oberösterreich — Austrian Occupational Health Monitor (Österreichischer Arbeitsgesundheitsmonitor). Available at: https://ooe.arbeiterkammer.at/beratung/arbeitundgesundheit/arbeitsklima/Arbeitsgesundheitsmonitor.html; https://www.ifes.at/projekte/oesterreichischer-arbeitsgesundheitsmonitor)
- Data source 6: Statcube — Statistics Austria (Statistik Austria). Available at: http://statcube.at/statistik.at/ext/statcube/jsf/tableView/tableView.xhtml

- Data source 7: Statistik Austria — Micro census-ad-hoc Module 2011: Working population with health problems (MZ-Ad-hoc Modul 2011- Erwerbstätigkeit von Menschen mit gesundheitlichen Beeinträchtigungen). Available at: http://www.statistik.at/web_de/services/publikationen/3/index.html?includePage=detailedView&sectionName=Arbeitsmarkt&pubId=647)
- Data source 8: Allgemeine Unfallversicherungsanstalt (AUVA) — Information on work accidents. Available at: https://www.auva.at/cdscontent/load?contentid=10008.633448&version=1474356231

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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