

Work-related Musculoskeletal Disorder (WRMSDs) Statistics, Great Britain 2016

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Background

Work related musculoskeletal disorders (WRMSDs) can be sub divided into the more specific and recognised body regions of the back, upper limbs and lower limb disorders. These sub categories when combined, form the overall grouping values presented in this document for the general classification of MSD illness type.

Musculoskeletal disorders can affect muscles, joints and tendons in all parts of the body. Most WRMSDs develop over time. They can be episodic or chronic in duration and can also result from injury sustained in a work related accident. Additionally they can progress from mild to severe disorders. These disorders are seldom life threatening but they impair the quality of life of a large proportion of the adult population.

Work related disorders can develop in an occupational setting due to the physical tasks with which individuals carry out their normal work activities. WRMSDs are associated with work patterns that include: Fixed or constrained body positions, Continual repetition of movements, Force concentrated on small parts of the body, such as the hand or wrist, A pace of work that does not allow sufficient recovery between movements. Additionally workplace psychosocial factors such as organisational culture, the health and safety climate and human factors may create the conditions for WRMSDs to occur. Generally, none of these factors acts separately to cause WRMSDs. They more commonly occur as a result of a combination and interaction among them.

The rate of self-reported musculoskeletal disorders showed a generally downward trend up to around 2011/12; more recently the rate has been broadly flat.

However to date WRMSDs in Great Britain remains an ill health related condition that places significant burdens on employers and employees accounting for 41% of all work related ill-health.

The rest of this document looks in more detail at the statistics related to WRMSDs to get a clearer understanding of the problem within the working environment in Great Britain.

This document cites two main sources for WRMSD statistics. The first is the Labour Force Survey (LFS), an annual survey of 38,000 households in Great Britain. The second is analysis from a survey of occupationally trained General Practitioners across Great Britain called, "The health and occupation network of general practitioners" (THOR-GP).

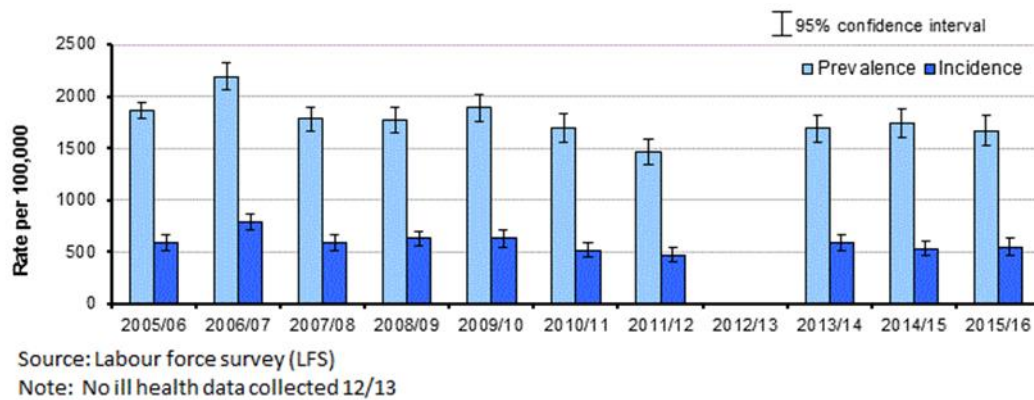
The latest estimates from the Labour Force Survey (2016) show that in Great Britain,

- The total number of WRMSDs cases (prevalence) in 2015/16 was 539,000 out of a total of 1,311,000 for all work related illnesses, 41% of the total.
- The number of new cases of WRMSDs (incidence) in 2015/16 was 176,000, an incidence rate of 550 cases per 100,000 people. This rate is not significantly different from the previous year and the rate has been broadly flat for the last five years.
- An estimated 8.8 million working days were lost due to WRMSDs, an average of 16 days lost for each case. This is not significantly different from the previous year. Work related musculoskeletal disorders account for 34% of all working days lost due to work related ill health.

Agriculture, forestry and fishing, Construction, Transportation and storage and Human health and social work activities are industries with significantly higher rates of WRMSDs when compared with the rates for all industries.

The occupations that have statistically significantly higher rates of work related musculoskeletal disorders are those in skilled trade occupations (and process and machine operatives

Figure 1. Estimated rates for total cases (prevalence) and new cases (incidence) of WRMSDs in Great Britain for people working in the last 12 months



Working days lost

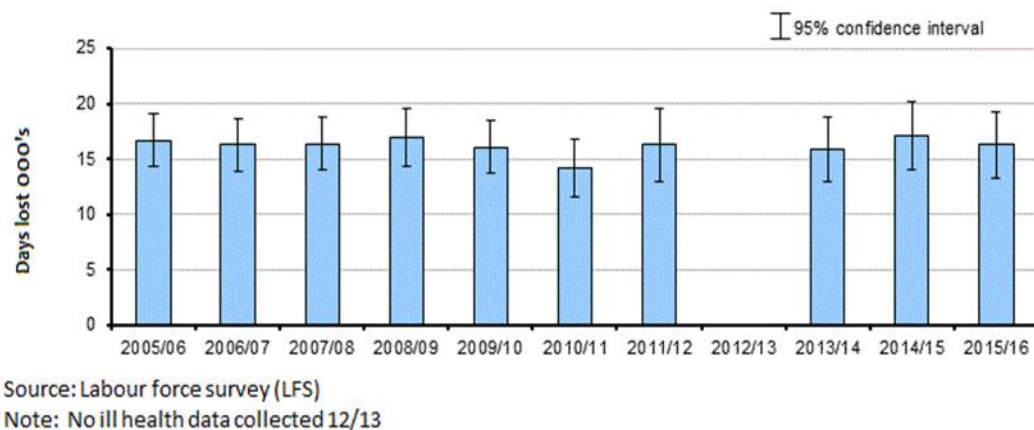
An estimated 8,784,000 working days were lost due to WRMSDs, an average of 16.3 days lost for each case.

However, whilst the number of days lost is significantly lower than days lost in 2001/02, there has been no significant change over the last five years.

WRMSDs represent 34% of all days lost due to work related ill health in Great Britain in 2015/16.

Within the total number of 8,784,000 days lost due to WRMSDs, work related upper limb disorders (WRULDs) account for around 36% of days lost, with back disorders around 39% of days lost and work related lower limb disorders (WRLLDs) 26%.

Figure 2. Days lost in thousands for WRMSDs in Great Britain



WRMSDs by industry and occupation

The industries with the highest rates of WRMSDs averaged over the 3 year period, 2013/14-2015/16. Agriculture and forestry, Construction, Transport and storage and Human health and social work activities. Compared with the average rate for all industry these industries have significantly higher rates of WRMSDs.

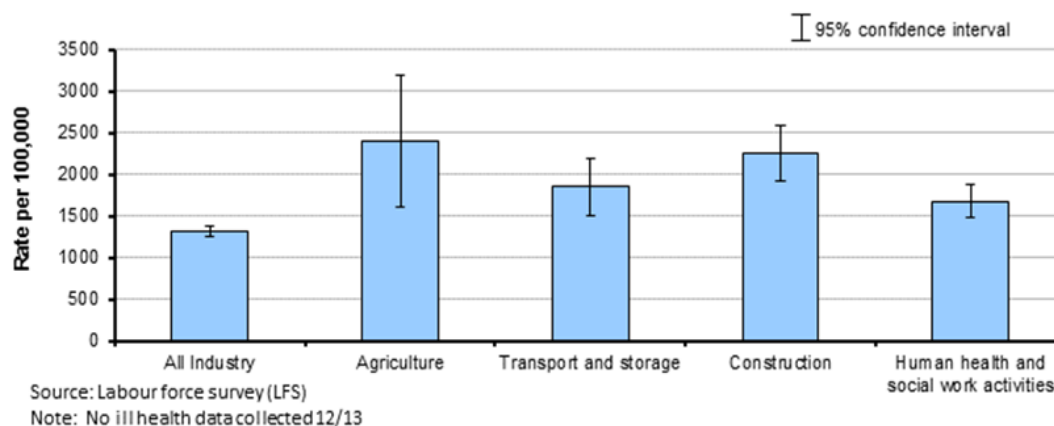
Looking more closely at these industry areas, the following sectors are those with the highest rates of WRMSDs. (Figure 3)

Within the agricultural industry it has been consistently shown that musculoskeletal disorders (WRMSDs) are the most common of all occupational non-fatal injuries and illnesses for farm workers, especially those who are involved in labour-intensive practices (McCurdy et al., 2003, Meyers et al., 1997, Villarejo, 1998 and Villarejo and Baron, 1999). Whilst agriculture in Great Britain is highly mechanised and not as labour intensive as other countries agricultural workers are still at risk from WRMSDs. These include: lifting and carrying heavy loads (over 50 lb); sustained or repeated full body bending (stoop); and very highly repetitive hand work (clipping, cutting).

Historically workers in the postal industry have reported higher rates of WRMSDs due to lifting and carrying mail sacks. Industrial automation of tasks has reduced the scope over the years however a recent report in the USA by the National Institute for Occupational Safety and Health (NIOSH) has suggested that investigators have identified excessive heavy lifting and several ergonomic hazards -- design features that tax or endanger the human body excessively - associated with the Postal Services automated mail-processing equipment. The agency warns that these hazards put employees at potential risk for crippling low back problems as well as musculoskeletal disorders of the upper body; other NIOSH studies have found that machine-paced postal workers reported a higher incidence of fatigue, blurred vision, and neck, arm, or hand complaints.

In the UK, the main postal workers union, the Communication Workers Union (CWU) suggested that postal workers representing 0.7% of the UK workforce reported 10% of WRMSDs (Hooper 2015)

Figure 3. Prevalence rate (total cases) of work related musculoskeletal disorders in Great Britain by industry averaged over the 3 year period 2013/14-2015/16.



Within category of Human health and social work activities there is a higher risk of WRMSDs. Most attention has been directed towards nursing— as the largest occupational group in the health care sector— in terms of mitigation of risks associated with WRMSDs. However, the health care sector employs a large range of occupations, including paramedics, care assistants, theatre support staff, maintenance, food services, and cleaning staff (Hignett, Fray, et al., 2007) all of which require further attention to reduce risks associated with WRMSDs (Oakman et al., 2014). The main physical risk in terms of WRMSDs has focussed on patient handling.

The construction industry has a long history of higher rates of WRMSDs due to the physical nature of working in that industry. Plasterers, bricklayers and joiners are the trades frequently cited within construction at high risk (EU –OSHA, 2015).

Tasks carried out within construction trades require the use of hand tools and power tools, entailing the use of multiple body regions, constant movement in awkward positions, and repetitive, forceful, use of the back and upper and lower extremities.

The particular tasks undertaken by construction workers largely depend on the trades they are employed in and the particular construction site they are on. Tasks can vary throughout the day, but can also be repetitive.

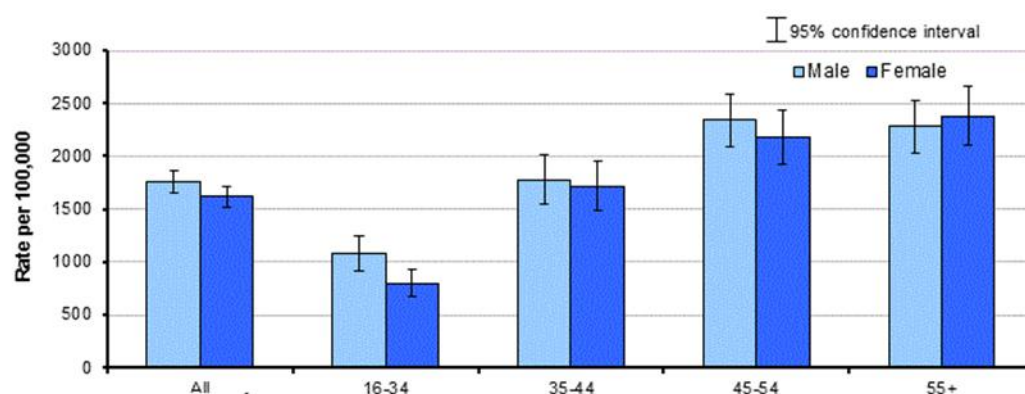
WRMSDs and age and gender

The prevalence rate across all age groups and genders for the three year period 2013/14-2015/16 is a rate of 1700 per 100,000 workers (all persons). This is not significantly different from the previous three year period.

However within the male gender the prevalence of WRMSDs is significantly lower the age category 16-34 years with a rate of 1080 per 100,000 workers in this period. Males in the age categories 45-54 and 55+ years have significantly higher prevalence rates of WRMSDs than that for all persons at a rate of 2260 and 2320 per 100,000 workers respectively.

Females present a similar pattern in this period with the 16-34 year category having a statistically lower prevalence rate than all persons 800 per 100,000 workers. Both the 45-54 year category and the 55+ have higher rates respectively at 2180 and 2380 per 100,000 workers.

Figure 4. Prevalence rate (total cases) of WRMSDs by age and gender in Great Britain 3 year average 2013/14-2015/16.



Source: Labour force survey (LFS)

Note: No ill health data collected 12/13

In Great Britain, as in many developed nations, the populations, including worker populations, are ageing. This has generated increased research into the control of age related workplace risks, particularly those associated with occupational ill health.

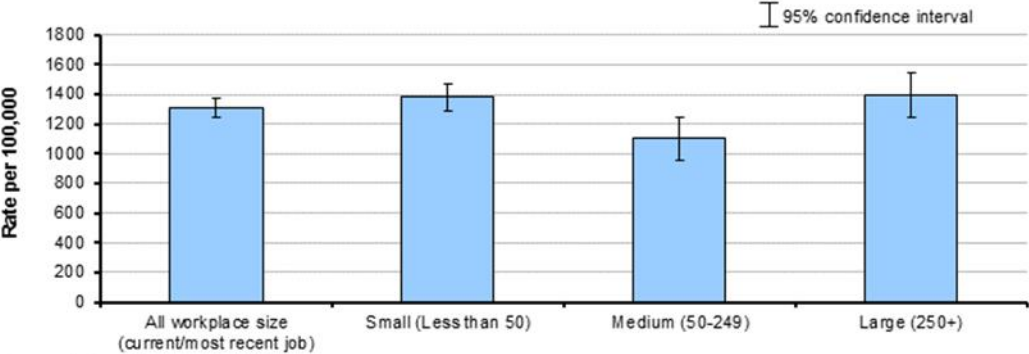
Age is not the most important determinant of health, nor does ageing inevitably bring illness and disease. Negative beliefs about ageing, including that older age is a risk factor for injury at work, have however, tended to preclude older workers from workplaces (HSE, 2010)

The studies on functional capability indicate age-related changes in functional capabilities of adults and it is generally agreed that as we age we are not able to perform to the same level as when we were young (Savinainen et al., 2004; Atwood, 2005; Kowalsi-Trakofler et al., 2005; Kenny et al., 2008; Welch et al., 2008). In terms of WRMSDs, there are three main musculoskeletal changes reported in the literature; a reduction in joint mobility, decrease in muscular strength and the slowing of reaction and movement times.

WRMSDs by workplace size

Medium enterprises had a significantly lower prevalence of WRMSDs in 2016 compared with small enterprises and larger enterprises. However, this maybe an artefact of the original question of where people work. Individuals may work in a medium size department or branch of a much larger network.

Figure 5. Estimated prevalence rates of self-reported musculoskeletal disorders caused or made worse by current or most recent job, for small, medium and large workplaces, for people working in the last 12 months, 2015/16

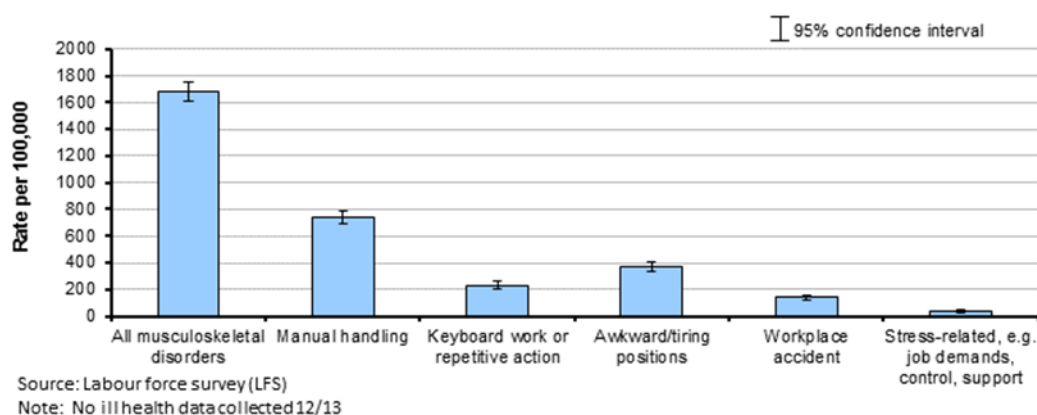


Source: Labour force survey (LFS)
Note: No ill health data collected 12/13

Causative factors in the development of WRMSDs

Examining the Labour Force Survey in greater detail (latest analysis a three year average over the period 2009/10- 2011/12) illustrates that manual handling, lifting and carrying was one of the prime causative factors in the development of work related musculoskeletal disorders particularly the development of back pain. Additionally repetitive movement such as keyboard work or repetitive action or being in awkward or tiring positions were other highlighted factors in WRMSD development.

Figure 6. Prevalence of work related musculoskeletal disorders by causative factor LFS (2009/10-2011/12)

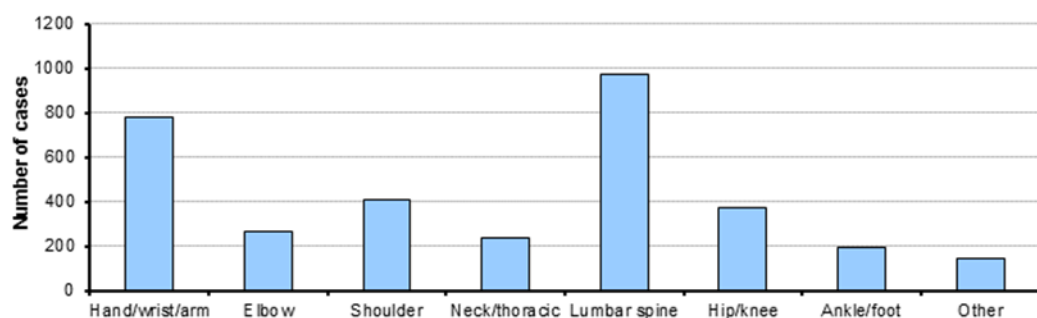


General Practitioners Scheme and WRMSDs.

The THOR-GP scheme sponsored by the Health and Safety Executive from 2005 until the 2016 is a survey where a sample of General Practitioners across Great Britain record work related ill-health from their patients in their local surgeries. The advantage of this survey has been to have a greater understanding of the conditions with which people present symptoms and how the condition might have occurred.

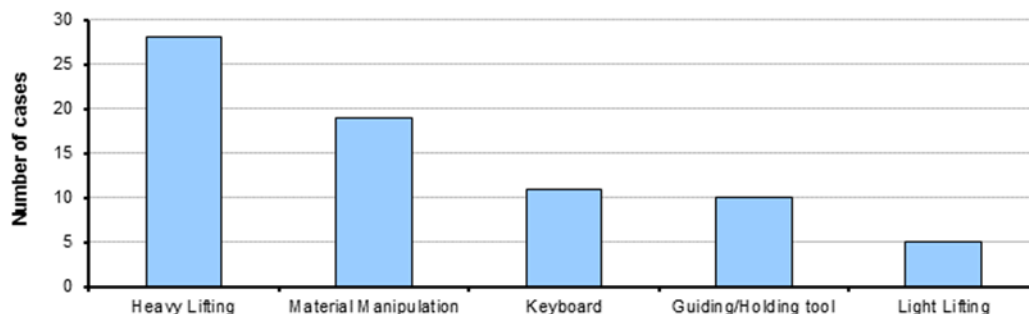
Patients presenting with WRMSDs to their GP's suggest the majority suffer with back pain or disorders with the hand, wrist of arm. This may be due to repetitive movement and most likely reflects what is suggested in the Labour Force Survey.

Figure 7. Cases of WRMSDs by anatomical site THOR-GP, three-year aggregate total 2013 to 2015



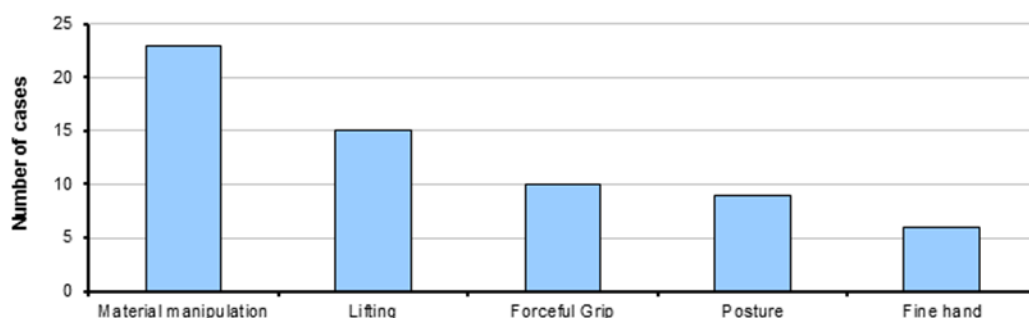
Patients presenting with WRMSDs to their GP's suggest the majority suffer with back pain or disorders with the hand, wrist or arm. This may be due to repetitive movement and most likely reflects what is suggested in the Labour Force Survey.

Figure 8. Breakdown of musculoskeletal cases reported to THOR-GP according to attributed task THOR-GP, three-year aggregate total 2013 to 2015



It is likely that heavy lifting and loading on the spine is responsible for the familiar picture of what task and movement is likely to have contributed to the WRMSD suffered by the patient.

Figure 9. Breakdown of musculoskeletal cases reported to THOR-GP according to attributed movement THOR-GP, three-year aggregate total 2013 to 2015



An example of some typical WRMSDs cases reported to specialist physicians in Great Britain 2002-2008 (THOR)

WRMSDs in butchers from the health and occupation reporting network (THOR) data (2002-08)

Of the 10 cases (aged 29-64 years) reported by rheumatologists, all except 1 case was male:

- 6 cases were hand/wrist/arm problems (1 with a co-diagnosis of shoulder)
 - 3 cases were elbow diagnoses
 - 1 case was simply reported as joint arthritis,
 - Associated tasks were lifting and chopping, cutting meat and twisting, turning, carrying meat,
- There were 6 case reports of hand/wrist/arm problems (including tenosynovitis, tendonitis and thumb fracture) and 1 case of shoulder pain reported to OPRA, attributed to tasks including, boning, cutting, and, trimming.

GPs reported 16 cases of work-related MSDs in butchers and meat cutters,. The cases were aged 18 to 58 years, and 15 of the 16 were males. Of these 8 cited hand/wrist/arm as the affected area (including Raynaud's syndrome, tenosynovitis and carpal tunnel syndrome), and a further 4 cases were diagnosed as tennis elbow. The remainder were single cases of:

- Neck/thoracic spine (muscle strain)
- Low back pain
- Heel pain
- Muscular injury to chest.

The tasks associated with these cases included, deboning, poor lifting technique, repetitive action, prolonged standing, holding/chopping/handling/preparing meat and "struggling with a stropky ewe".

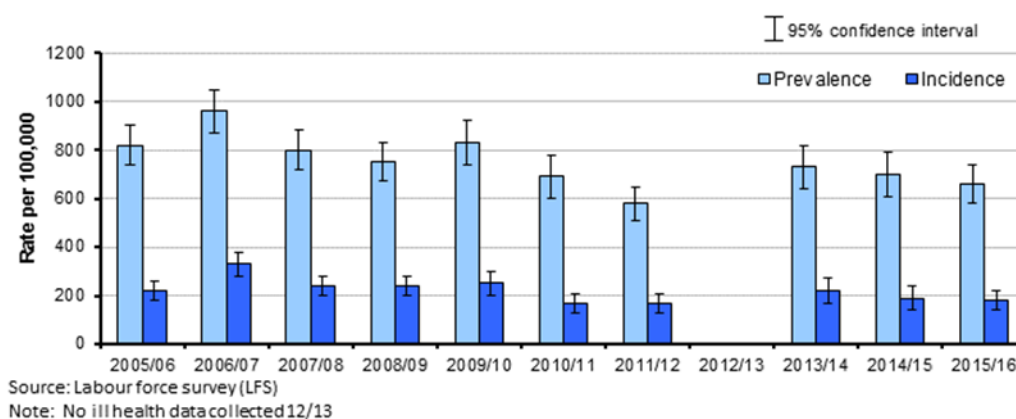
WRMSDs Back Disorders

Work related low back pain is a major ill health condition in Great Britain and across the EU more generally. Typical low back pain has a recurrent course with fluctuating symptoms. The majority of back pain patients will have experienced a previous episode and acute attacks often occur as exacerbations of chronic low back pain. Low back pain is also a socioeconomic problem associated with work absenteeism, disablement and high healthcare costs (Van Tulder, 2006)

WRMSDs affecting the back are a common work related complaint reported through the Labour Force Survey Latest results show:

- There has generally been a broadly flat trend in the prevalence rate of back disorders since 2010/11. In 2015/16 the prevalence rate was 660 cases per 100,000 people employed compared with 690 cases per 100,000 in 2010/11. This equates to 214,000 total cases in 2015/16.
- In 2015/16 the working days lost due to work related back disorders was 3,417,000 days with the average number of days lost per case of 15.9 days. Over the last five years the average days lost per case is of a similar order.

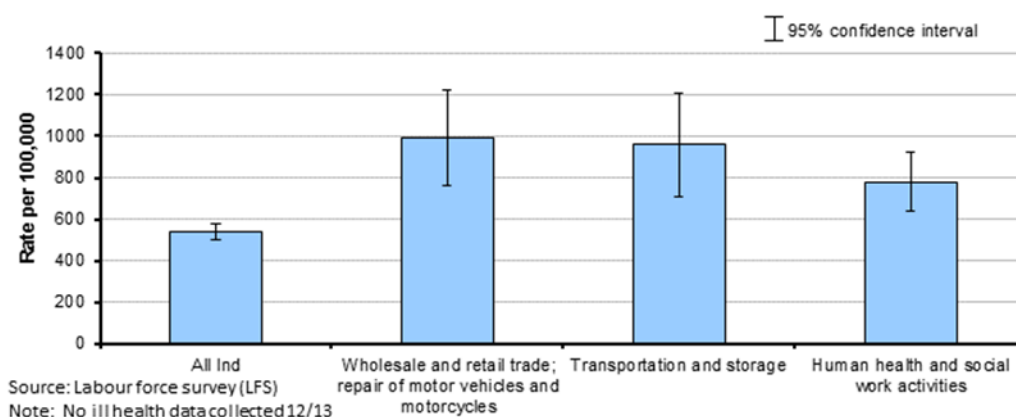
Figure 10. Prevalence rate (total cases) of work related back disorders in Great Britain per 100,000 for people employed in the last 12 months



Back disorders by industry and occupation

The prevalence rates for back disorders are statistically significantly higher in the Construction, Transport and storage and Human health and social work activities compared with the average across all industries. The Transport and storage industries have a rate of 960 cases per 100,000 workers, with 990 cases in the Construction industry, 780 cases in Human health and social work activities and 540 cases across all industries, in the three year period 2013/14-2015/16.

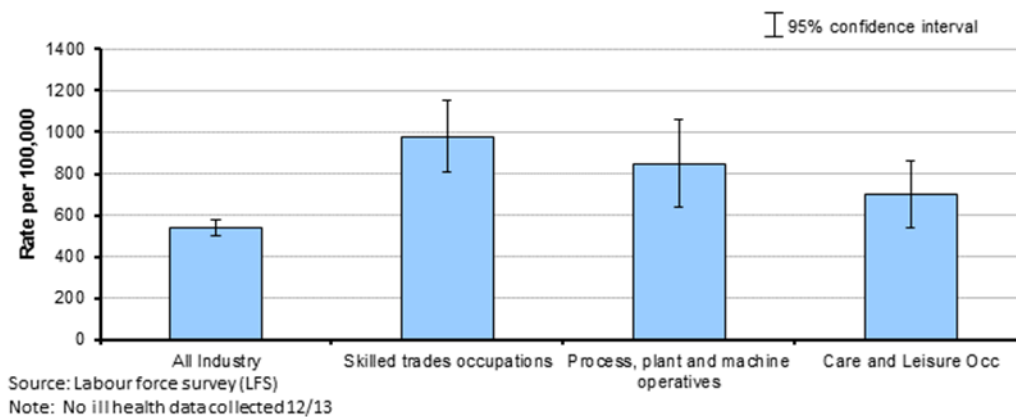
Figure 11. Industries with the highest estimated prevalence rates for back disorders, averaged over the 3 year period 2013/14-2015/16



The occupations that have the highest prevalence rates of back disorders are reflective of the industry areas mentioned above. Skilled trades, and process plant and machine operatives are the occupation categories with statistically higher prevalence rates compared with all occupations.

Within these broad categories, Skilled trade occupations and Process plant and machine operatives has significantly higher prevalence rates: 980 cases and 850 per 100,000 people employed respectively, compared with an all industry average of 540 cases per 100,000 people employed in 2015/16. Care and leisure occupations have historically had higher rates of back disorders however in 2015/16 the rate of 700 per 100,000 was not significantly higher than the rate for all industries.

Figure 12. Occupations with the highest estimated prevalence rate of back disorders, averaged over the 3 year period 2013/14-2015/16



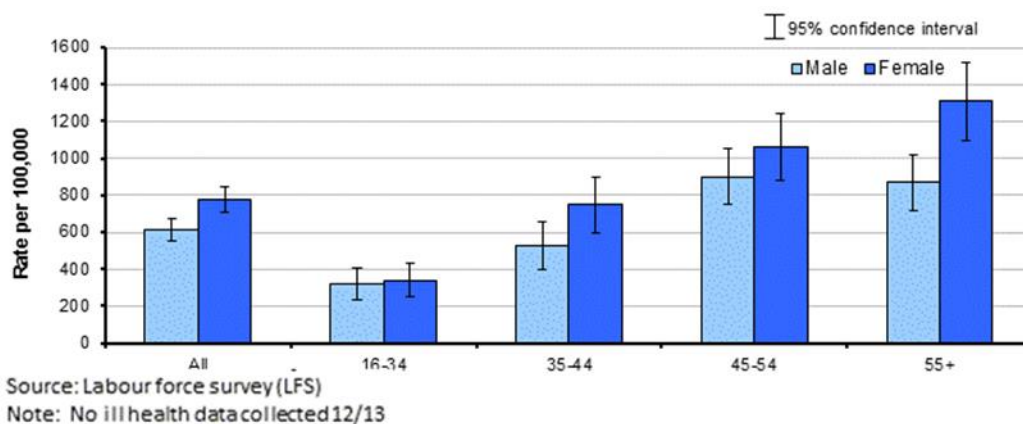
Back disorders by age and gender

The prevalence rate of back disorders amongst all persons in the three year period 2013/14-2015/16 was 700 cases per 100,000 workers.

Males in the 16-34 year category demonstrated no significant difference with a rate of 580 per 100,000 workers. Males in the age categories 35-44 and 44-54 year had significantly higher rates of back disorders compared with all persons at rates of 890 and 940 respectively.

Females in the 16-34 year category had significantly lower rates of back disorders than all persons at 350 per 100,000 workers. Females in the 35-44 year and the 45-54 year category had no significant differences in their rates compared with all persons at rates of 730 and 830 respectively.

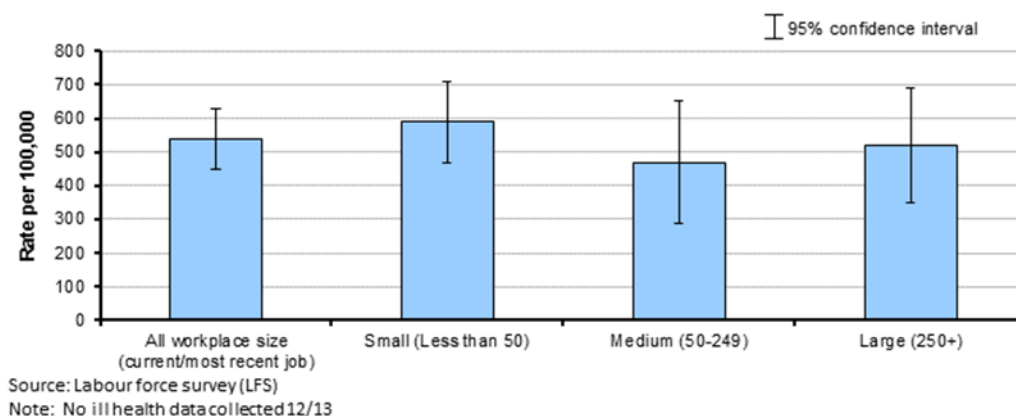
Figure 13. Estimated prevalence rates of self-reported musculoskeletal disorders mainly affecting the back caused or made worse by work, by age and gender, for people working in the last 12 months, averaged 2013/14-2015/16



Back disorders by workplace size

The prevalence of back disorders by workplace size is not significantly different between small medium and large workplaces. This has also been the case over the last five years. The prevalence rates are 590 cases, 470 cases and 520 cases per 100,000 respectively compared with a rate of 540 cases for all industries.

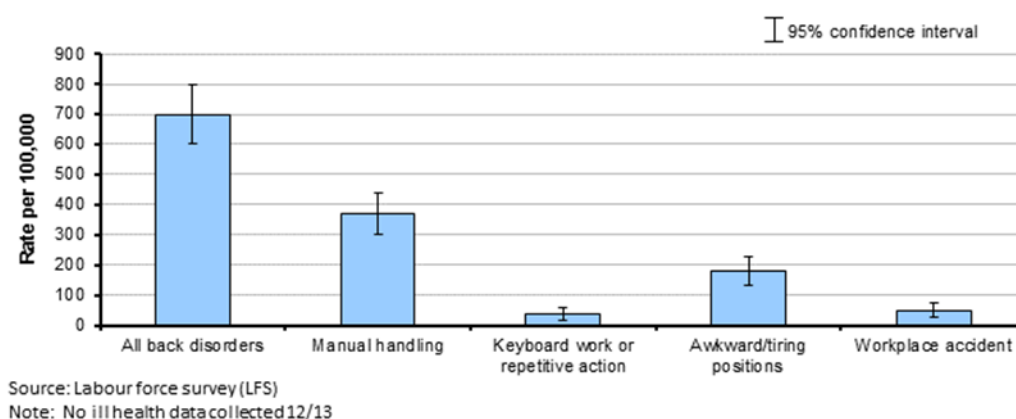
Figure 14. Estimated prevalence rates of self-reported musculoskeletal disorders mainly affecting the back for small, medium and large workplaces, for people working in the last 12 months, 2015/16



Causative factors in low back pain disorders

The prevalence of back disorders of 212,000 cases averaged between 2009/10-2011/12 demonstrated that 113,000 cases (53%) were classified as occurring from manual handling, lifting and carrying activities 11,000 cases (5%) occurred through keyboard or repetitive movement activities 53,000 (25%) from awkward or tiring positions and 15,000 (7%) from workplace accidents.

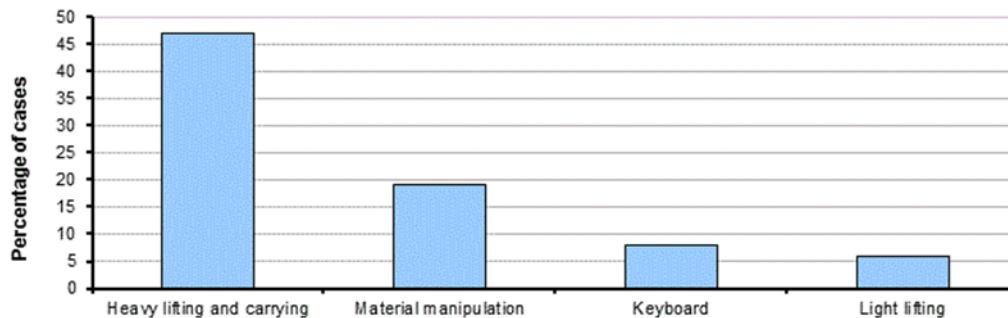
Figure 15. Prevalence of back disorders caused or made worse by work by prior cause 2009/10-2011/12 (LFS)



General Practitioners (THOR-GP)

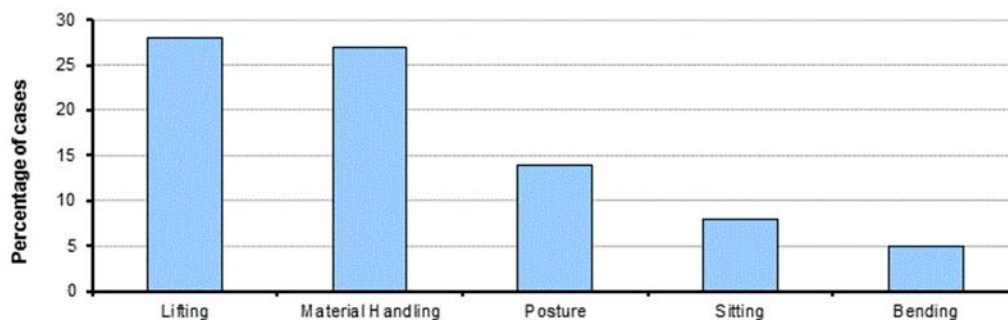
The general practitioners scheme which collects work related data from patients presenting within GP clinics provides some useful information on what the GP and patient considered was the main cause of back pain. Examining the case data from 2013-2015 it demonstrates that lifting and carrying remains the primary driver for low back pain at work. This has also traditionally been the case for many years across all industries. Material manipulation which also involves moving, pushing shoving and lifting is also an important cause presented.

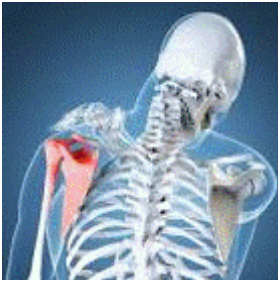
Figure 16. Spine or back disorders reported to General Practitioners scheme (THOR-GP) according to main attributed task THOR-GP, three-year aggregate total 2013 to 2015



General practitioners assess what the main movement at work is likely to be the cause of back disorders. Heavy lifting and moving materials at work are generally responsible for the majority of back disorders presenting at GP surgeries.

Figure 17. Spine or back disorders reported to General Practitioners scheme (THOR-GP) according to main attributed movement THOR-GP, three-year aggregate total 2013 to 2015





Work Related Upper Limb Disorders (WRULDs)

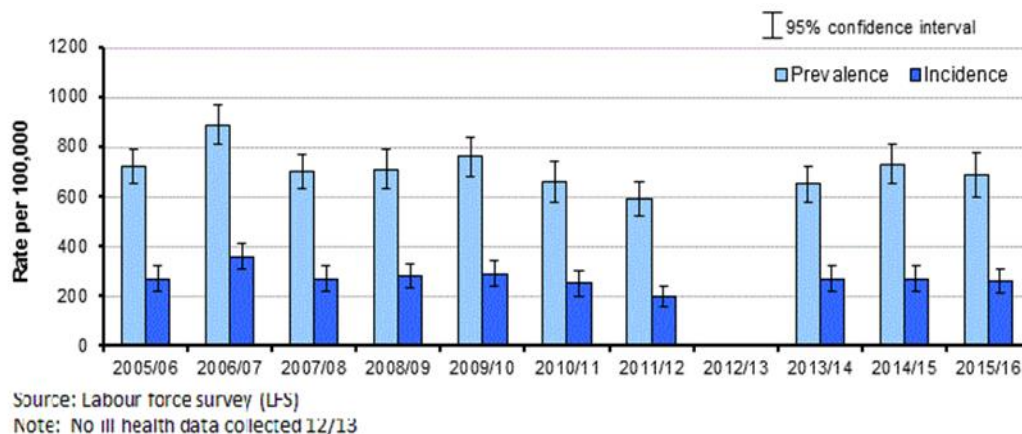
Upper limb disorders include a large number of different WRMSDs in the hand, wrist, shoulder and neck. Typical examples include repetitive strain trauma, hand-wrist tendon syndromes, carpal tunnel syndrome or epicondylitis.

Hand- wrist tendon syndrome, for example, can occur in a work setting where there are repetitive movement of the hand and wrist, forceful movement or extensive flexion of the hand and wrist. Examples of occupations in which this could occur

include the work in the food and drink industry involving repetitive food packing (Riihimaki, 1995).

The prevalence of WRULDs in 2015/16 was 222,000 total cases (case rate of 690 per 100,000 people employed). This was not statistically significantly different from the previous year and this trend has been broadly flat for the last five years.

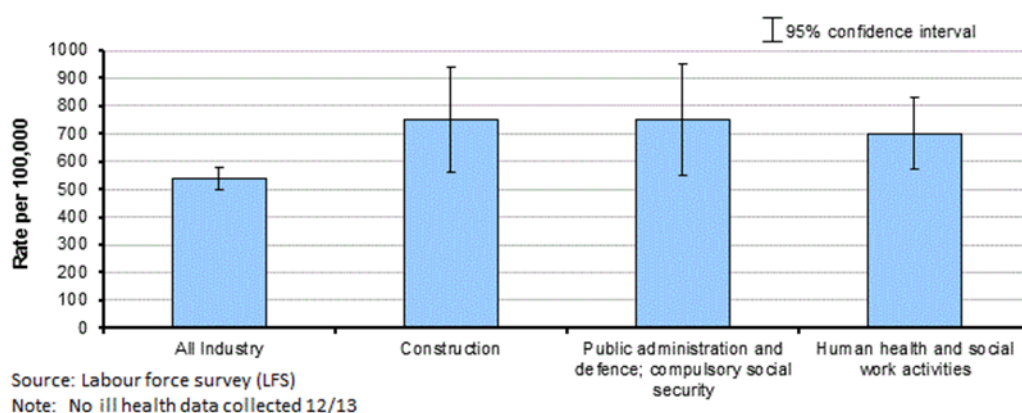
Figure 18. Prevalence (total case) rate of WRULDs per 100,000 people employed in the last 12 months in Great Britain



In 2015/16 there were 3,138,000 days lost due to WRULDs in Great Britain. This equated to 14.1 days per case which was not significantly different from the previous year which had 17.1 days lost per case for WRULDs.

WRULDs by industry and occupation

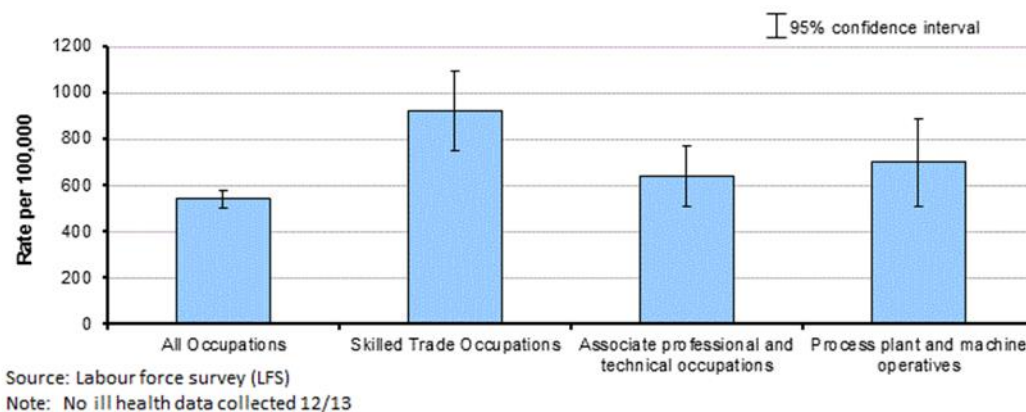
Figure 19. Industries with the highest estimated prevalence rates for WRULDs averaged over the 3 year period 2013/14-2015/16



Three industry groups had significantly higher rates of upper limb disorders than the average prevalence across all industries with a case rate of 540 per 100,000 cases.

Construction, the broad category of Public administration and defence and Human health and social work activities had rates of 750 and 700 cases respectively.

Figure 20. The occupations with the highest estimated prevalence rate for WRULDs averaged over the 3 year period 2013/14-2015/16



Skilled trade occupations had significantly higher rates of upper limb disorders than the rate of all occupations (540 cases) with 920 cases per 100,000 workers. Associate professional and Process plant and machine operatives had higher rates than other occupations but were not significantly higher than the average prevalence rate across all occupations.

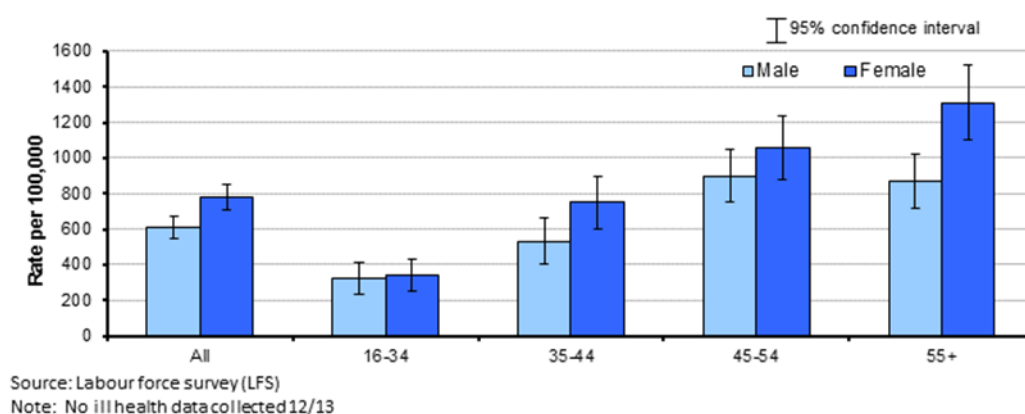
WRULDs by age and gender

The prevalence rate for all upper limbs disorders for all persons was 690 cases per 100,000 for all persons.

Males in the 16-34 year and the 35-44 year categories had significantly lower prevalence of upper limb disorders compared to all persons with rates of 320 and 530 cases respectively. However, males in the 45-54 year and the 55+ categories had significantly higher prevalence rates of upper limbs disorders at 900 cases and 870 cases respectively.

Females in the 16-34 year category had significantly lower prevalence rates at 340 cases whilst those in age categories 45-54 and 55+ had significantly higher prevalence rates at 1060 and 1310 cases respectively.

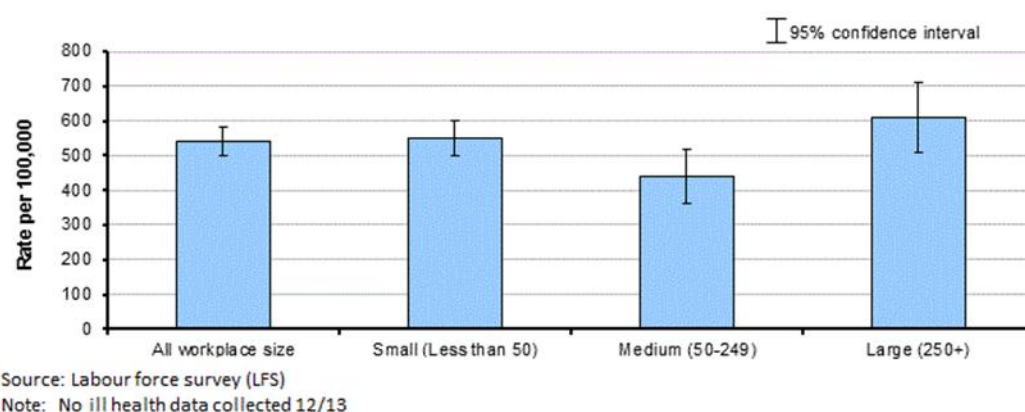
Figure 21. Estimated prevalence rate of WRULDs, by age and gender, for people working in the last 12 months, averaged 2013/14-2015/16



WRULDs by workplace size

Medium enterprises had a significantly lower rate of upper limb disorders compared with small and large enterprises. The average rate across all premises was 540 prevalence cases whereas medium enterprises had 440 cases per 100,000, small enterprises had a rate of 550 cases and large enterprises had a rate of 610 cases.

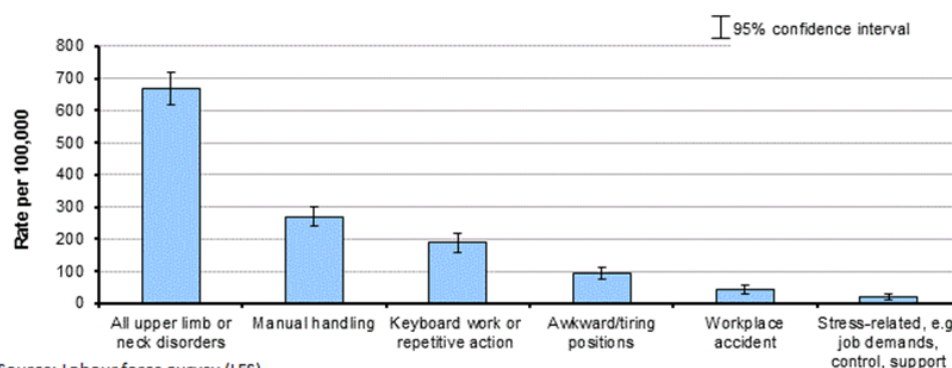
Figure 22. Comparison of estimated prevalence rates of self-reported WRULDs for small, medium and large workplaces, for people working in the last 12 months, 2013/14-2015/16



Causes of Upper Limb Disorders

Of the total prevalence of WRULDs across this time period 2009/10-2011/12, 203,000 cases manual handling, lifting and carrying accounted for 81,000 cases (40%), keyboard or repetitive action accounted for 56,000 cases (27%), awkward or tiring positions 29,000 cases (14%) and workplace accidents 13,000 cases (6%).

Figure 23. Prevalence of Upper Limb Disorders by causative factor 2009/10-2011/12



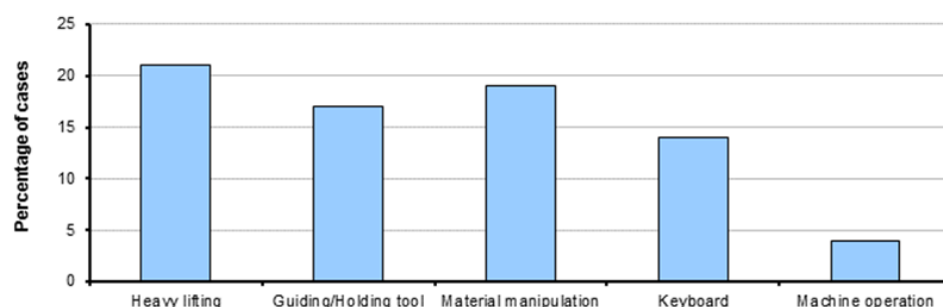
Source: Labour force survey (LFS)

Note: No ill health data collected 12/13

General Practitioners (THOR-GP)

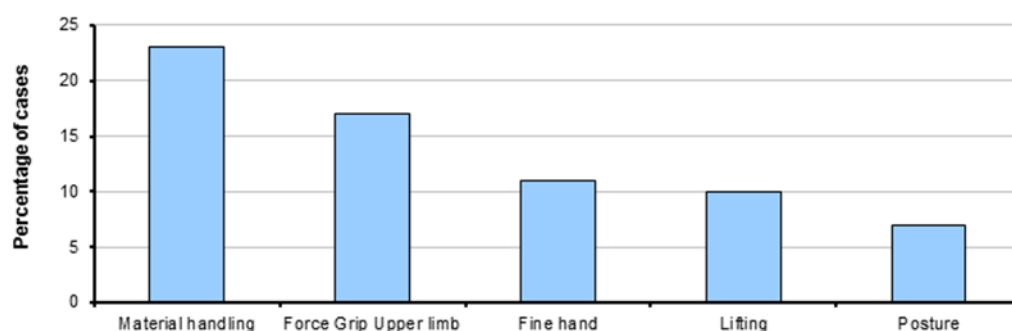
The general practitioners scheme which collects work related data from patients presenting within GP clinics provides some useful information on what the GP and patient considered was the main cause of back pain. Examining the case data from 2012-2014 it demonstrates that heavy lifting, holding tools for periods of time, excessive keyboard work and pulling shoving carrying materials were the main causes for WRULDS cited by GP's and their patients in this period.

Figure 24. Breakdown of upper limb disorders reported to THOR-GP according to attributed task THOR-GP, three-year aggregate total 2013 to 2015



Work related upper limb disorders presenting at GP surgeries are attributed to a combination of heavy lifting, moving materials, holding tools, machinery operations and keyboard activity.

Figure 25. Breakdown of upper limb disorders reported to THOR-GP according to attributed movement THOR-GP, three-year aggregate total 2013 to 2015





Work Related Lower Limb Disorders (WRLLDs)

WRLLDs are distinct from WRMSDs affecting the back, the neck and the upper limbs, in that they can often give rise to greater degrees of immobility and thereby can degrade quality of life substantially (Bruchal, 1995; Lohmander et al., 2004). Like disorders of the upper limb and axial skeleton (neck and trunk), WRLLDs involve the muscles, tendons or nerves, ligaments and other tissues, and they are generally manifested by inflammation, pain, discomfort or tingling.

Historically WRLLDs are not as well documented in the occupational health literature as back and upper limb disorders. Reports of WRLLD symptoms tend not to be independent of reports of symptoms in other areas of the body (Gamperiene and Stigum, 1999; da Silva et al., 2006).

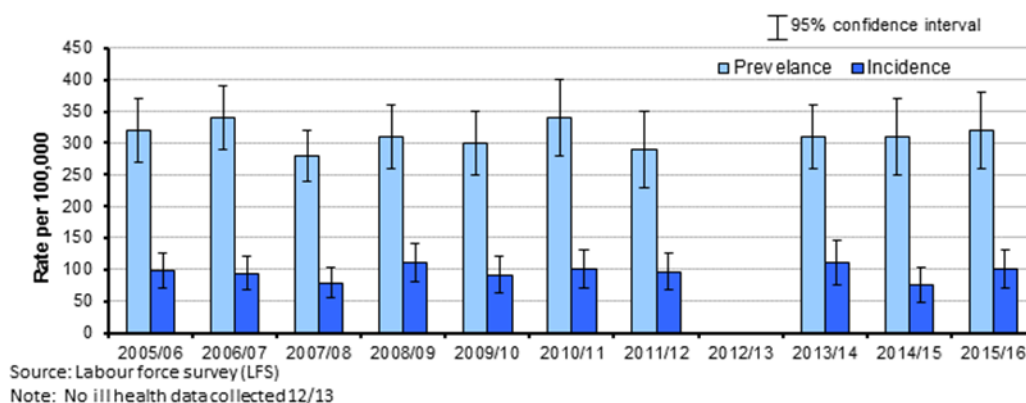
D,Souza et al. (2005) opined from their review of the literature surrounding general worker populations that the low prevalence of WRLLDs reported in the studies, could be due to other factors because true prevalence is not totally captured. For instance, workers who had withdrawn from the workplace or transferred to other jobs due to chronic injuries are likely to have been excluded from surveyed data, as has previously been suggested by Walker-Bone and Palmer (2002).

WRLLDs are often categorised as acute or overuse injuries. Acute can include meniscal tears of the knee or ankle and metacarpal fractures of the ankle and foot. Overuse injuries for example include in the hip and thigh, osteoarthritis and hamstrings strains, in the knee, osteoarthritis, patellofemoral pain syndrome, shin splints and in the foot and ankle, Achilles tendonitis, plantar fasciitis or ankle sprain amongst others.

According to many cross sectional studies workers in occupations with heavy physical demands have a higher prevalence of knee osteoarthritis than those in lower demanding work. Examples include carpet and floor layers whose job requires frequent kneeling had an increased prevalence of patellar osteophytosis (Riihimaki, 1995).

The prevalence rate of WRLLDs was 320 cases per 100,000 people employed and equated to a total case number of 103,000. This is of a similar order over the last 10 years with a broadly flat trend over this period..

Figure 26. Prevalence rate (total cases) of work related lower limb disorders in Great Britain per 100,000 for people employed in the last 12 months



The number of working days lost in 2014/15 was 2,229,000 days lost at a rate of 21.7 days lost per case. This is of a similar order over the last 10 years.

Conclusions

WRMSDs, while not life threatening, can impair the life quality and mobility of large numbers of the working population. The Labour Force Survey statistics over the last 10 years demonstrate that a significant number of WRMSDs are attributed to working practices across many diverse industries and occupations. WRMSDs accounted for 41% of the prevalence of all work related ill-health in Great Britain in 2015/16. WRMSDs working days lost (which place burdens on employers) account for 34% of all days lost due to work related illness in 2015/16 in Great Britain. The industries and occupations that have demonstrated the highest rates of musculoskeletal disorders have also remained similar; with industries with active physical work such as the construction industry or skilled trade occupations those with the highest rates. Examining the prevalence in terms of age and gender, the overall rate for males and females is similar for all WRMSDs. However the age ranges 45-54 and 55+ tend to have the highest rates for both genders.

For further information on WRMSDs

<http://www.hse.gov.uk/statistics/>

Glossary of Acronyms

WRMSDs Work related musculoskeletal disorders

WRULDs Work related upper limb disorders

WRLLDs Work related lower limb disorders

LFS – Labour Force Survey

IIDB Industrial Injuries Disablement Benefit scheme

THOR – The health and occupational reporting network

THOR –GP The health and occupational reporting network – General Practitioners

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THOR The Health and Occupation Research Network (2015) University of Manchester (<http://www.population-health.manchester.ac.uk/epidemiology/COEH/research/thor/>)

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