

Prevention of ergonomic risk of back pain injuries

Sára Felszeghi and Károly Cseh
University of Miskolc Semmelweis University



Ergonomic risk of back pain injuries

The characteristics of the work environment may increase the risk particularly of back injury if:

3. Characteristics of the work environment

- there is not enough room, in particular vertically, to carry out the activity,
- there are variations in the level of the floor on the work surface, requiring the load to be manipulated on different levels, the floor is uneven, thus presenting tripping hazards, or is slippery in relation to the worker's footwear,
- the place of work or the working environment prevents the handling of loads at a safe height or with good posture by the worker,
- the temperature, humidity or ventilation is unsuitable.

Conclusion

- Besides employers must ensure that workers and their representatives receive additional proper training, the teaching of risks at universities also important for everybody. In this way they prepare for risks in the world of work.
- This is the aim of education.

"... those who have taught many, they shall perish for ever and ever, as the stars"

(David the prophet's book)

Obligations of the employer

The activity may present a risk particularly of back injury if it entails one or more of the following requirements:

4. Requirements of the activity

- over-frequent or over-prolonged physical effort involving in particular the spine
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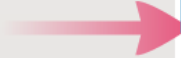
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Ergonomic risk of back pain injuries

Definition of back pain injuries

- Primarily the injuries of the vertebral column and related tissues (strains, ruptures, haemorrhages) and subsequent development of chronic diseases
- In the world of work they may be caused by the 'manual handling of loads', which means any activity of moving or supporting a load, by one or more workers, including lifting, putting down, pushing, pulling, carrying or shifting of a load.
- Due to the characteristics of such activities or the unfavourable ergonomic conditions, they involve a risk particularly of back injury to workers.



Legal background

- EEC (European Economic COUNCIL) DIRECTIVE (90/269/EEC) of 29 May 1990
- on the minimum health and safety requirements for the manual handling of loads where there is a risk particularly of back injury to workers (fourth individual Directive within the meaning of Article 16 (1) of Directive 89/391/EEC



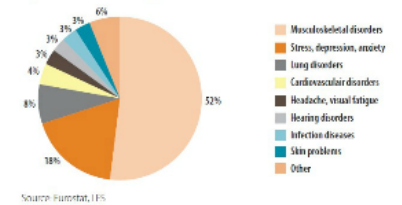
Legal background

- In Hungary the Decree 25/1998 (Dec.27) of the Ministry of Health
- states the minimal safety and health conditions of the manual transportations of heavy loads which present the risk of back pain injuries, and defines the criteria of employers' obligations to minimize the risk due to this work activity



The proportion of musculoskeletal diseases is significant (over 50%) in professional diseases

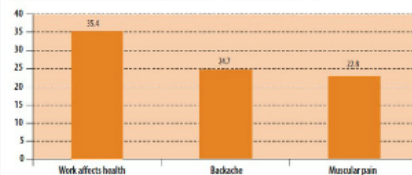
Figure 10: Work-related health problems, EU-15, % LFS 1999 ad hoc module



Source: Eurostat, LFS

The proportion of Back pain in professional diseases

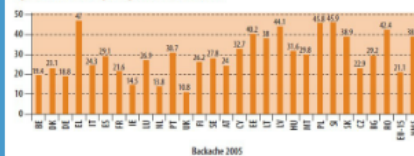
Figure 1: Percentage share of workers reporting health problems, EU-27, 2005



Source: European Survey on Working Conditions (ESWC) 2005

Statistics for EU countries

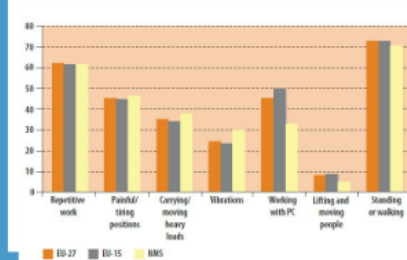
Figure 7: % Workers reporting backache, ESWC 2005



Source: ESWC

Proportion of risk factors for back pain injuries is illustrated here

Figure 4: Risk factors for MSDs, % of workers being exposed a quarter of the working time, ESWC 2005



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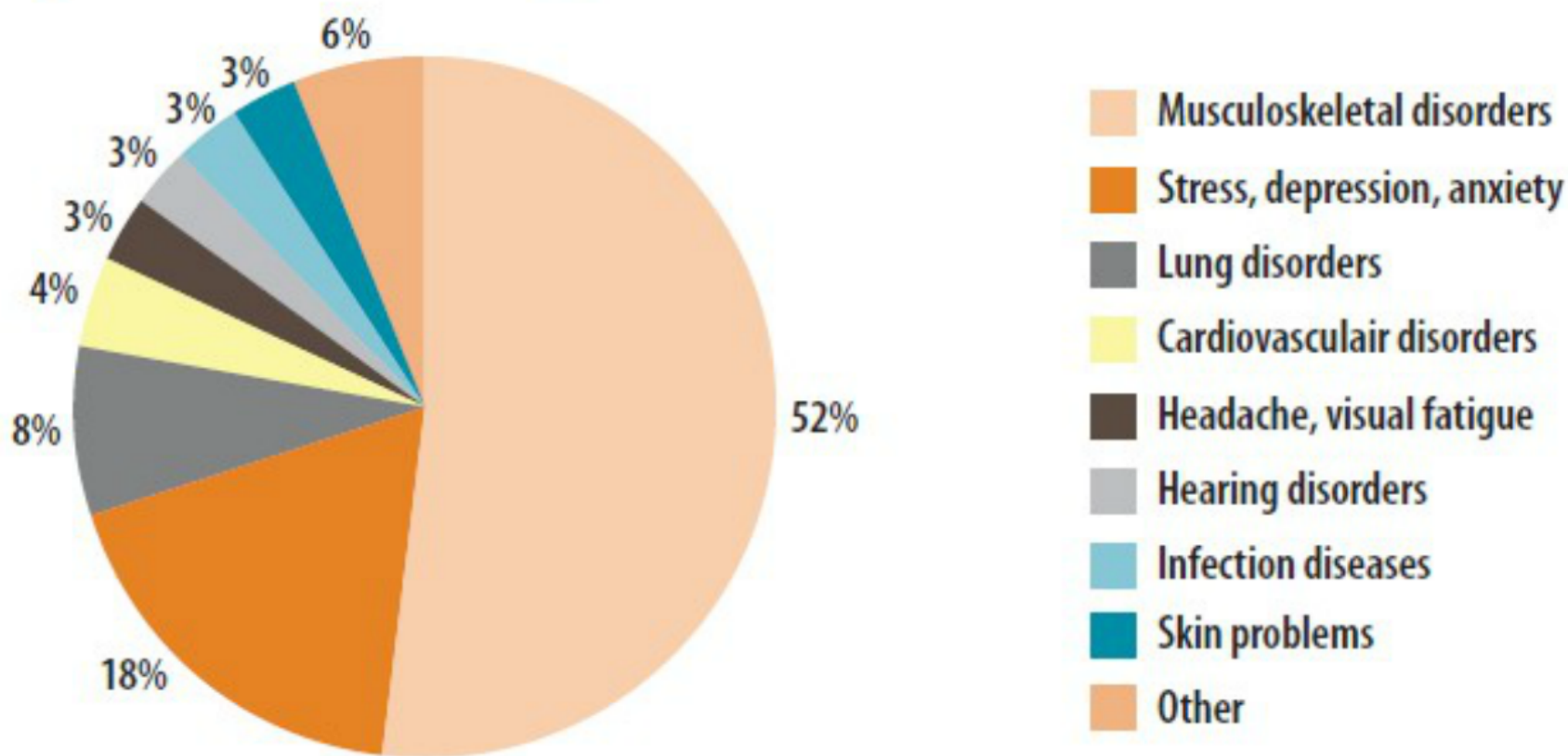
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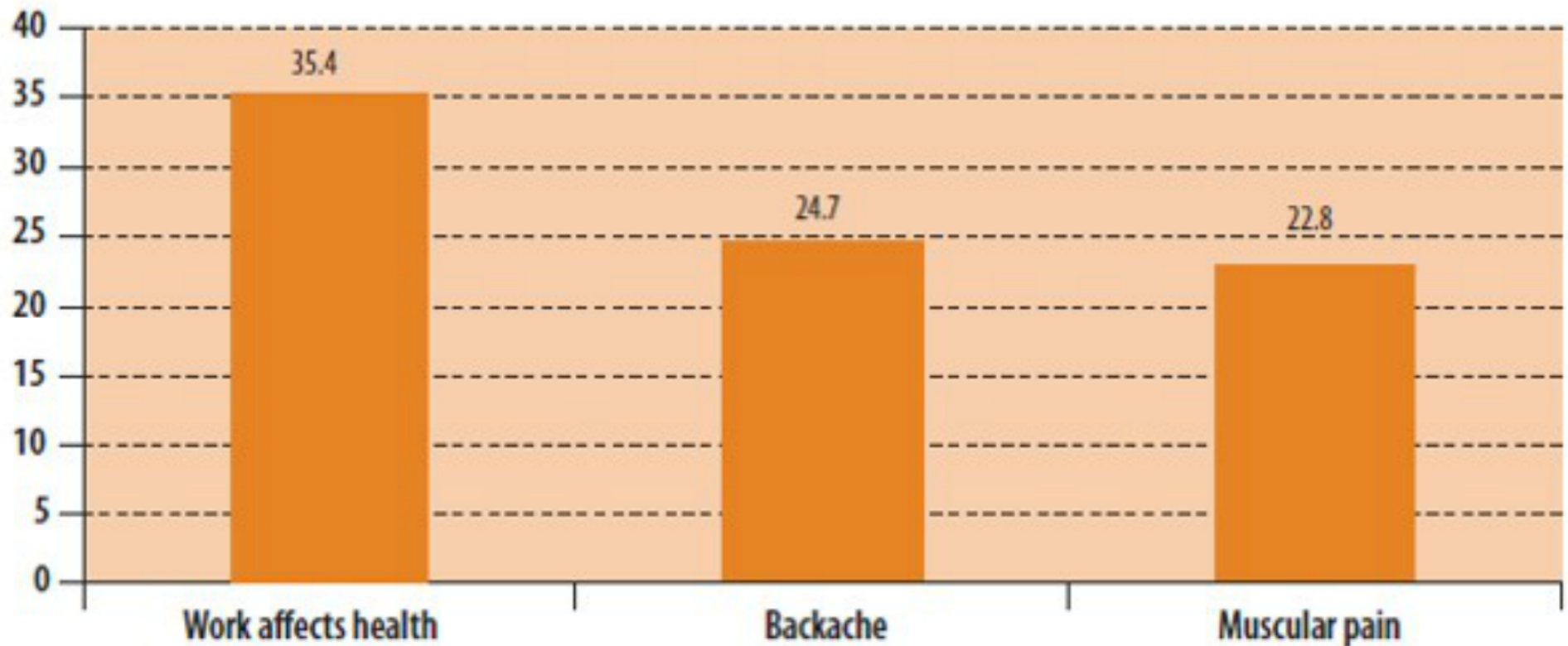
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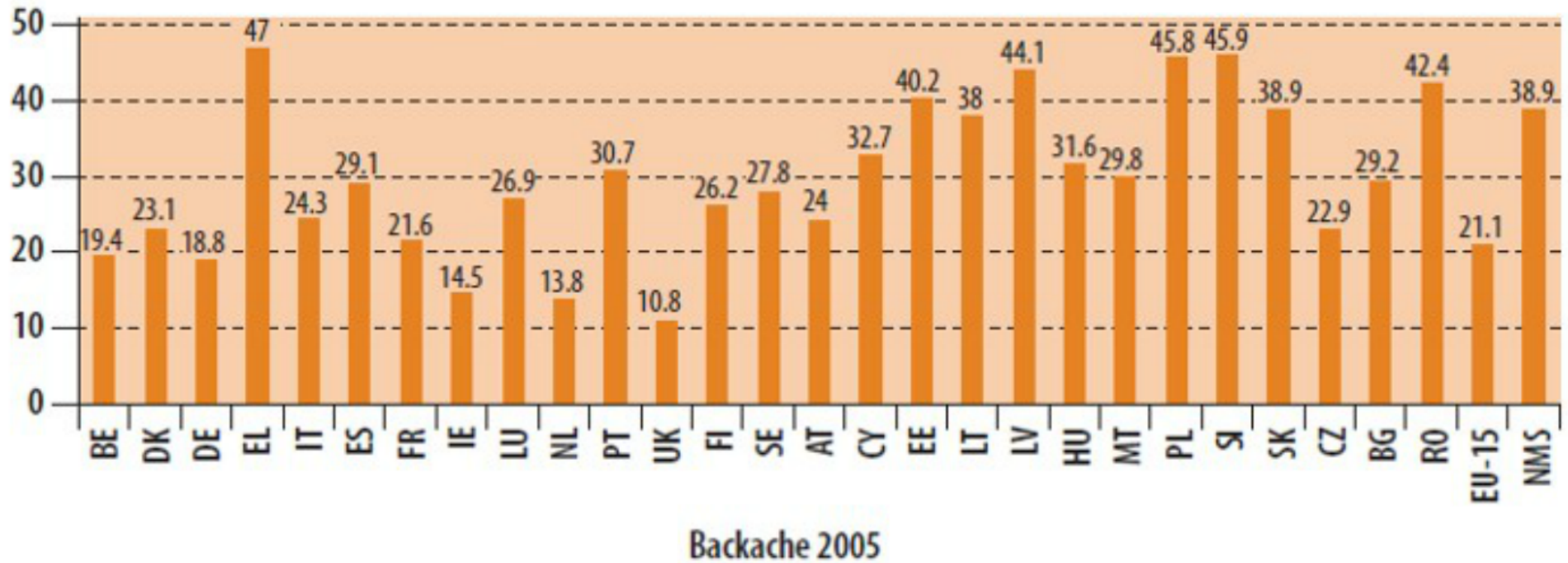
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Obligations of the employer

In case the need for the manual handling of loads by workers cannot be avoided, the employer:

- shall assess, in advance if possible, the health and safety conditions of the type of work involved, and in particular examine the characteristics of loads,
- shall take care to avoid or reduce the risk particularly of back injury to workers, by taking appropriate measures



Which are the ergonomic risk factors for back injuries?

1. Characteristics of the load

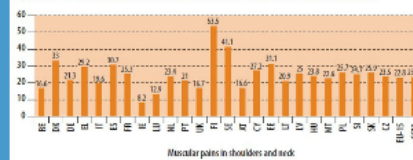
The manual handling of a load may present a risk particularly of back injury if it is:

- too heavy, or too large,
- unwieldy or difficult to grasp
- unstable or its contents likely to shift,
- positioned in a manner requiring it to be held or manipulated at a distance from the trunk, or with a bending or twisting of the trunk, or
- likely, because of its contours and/or consistency, to result in injury to workers, particularly in the event of a collision.



Muscular pain in shoulders and neck

Figure 8: % Workers reporting muscular pain in neck and shoulders, ESWC 2000 - ESCC 2001



Source: ESWC, ESCC



A physical effort may present a risk particularly of back injury

2. Physical effort required

- too strenuous
- only achievable by a twisting movement of the trunk,
- likely to result in a sudden movement of the load, or
- made with the body in an unstable posture.



"You need to solve difficult problems while they are easy"

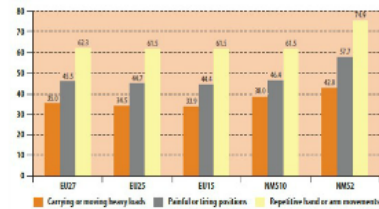
Primary Prevention!

- The responsibility of education is primary, including the employer, the employee and occupational medicine as well
- The teaching of ergonomic risks is a basic duty, therefore the introduction of teaching ergonomic risks is recommended not only in Medical Universities, but ALL higher level institutions, irrespective of their profile



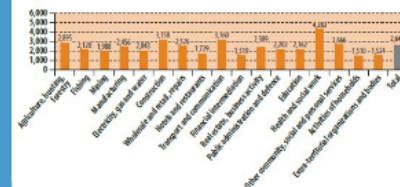
Percentage by geographic area of workers carrying out these tasks

Figure 6: Percentage workers carrying or moving heavy loads, working in painful/tiring positions and reporting repetitive hand/arm movements (all of them at least 25% of the time), by geographic area, 2005



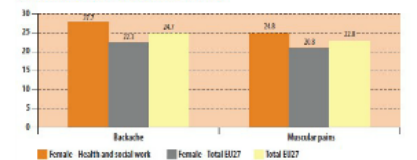
Prevalence rate of musculoskeletal disorders by sector: note the leading position of Health and Social Work in this respect

Figure 23: Standardised prevalence rate (per 100,000 workers) of musculoskeletal disorders, by sector, ad hoc module LIS 1999



The proportion of Women in Health and social work reporting back pain injuries is prominent

Figure 25: Percentage share of workers reporting backache and muscular pains, women in health and social work, total women in EU27 and total EU27, 2005



Source: LIS06

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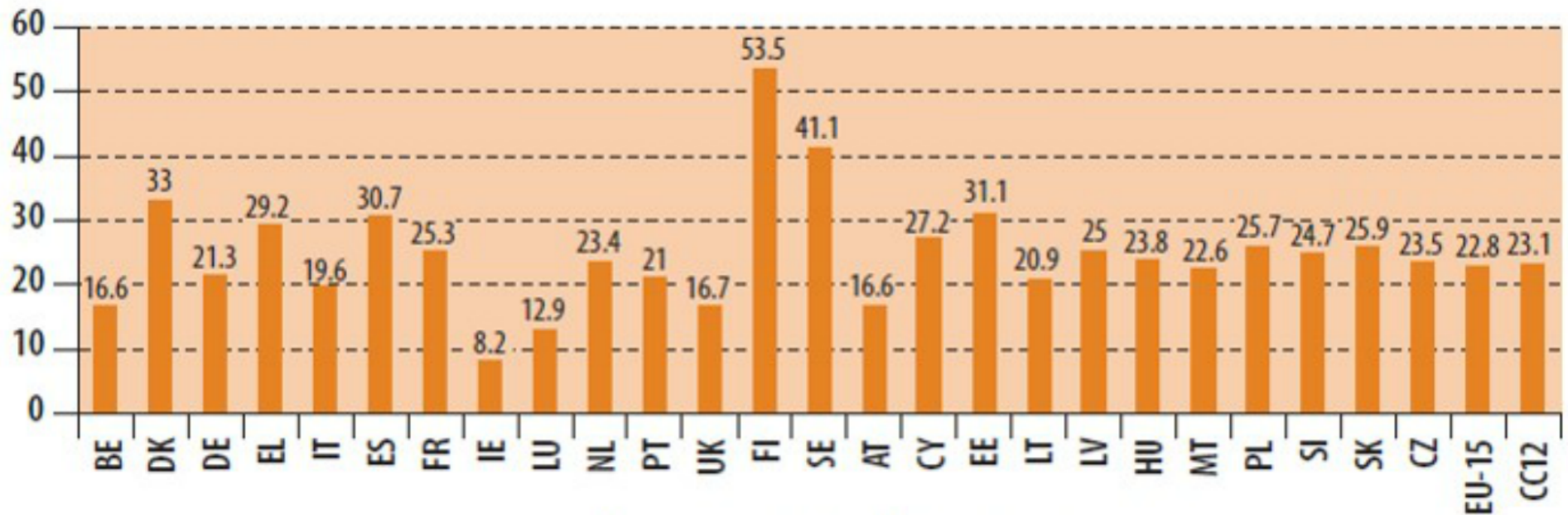
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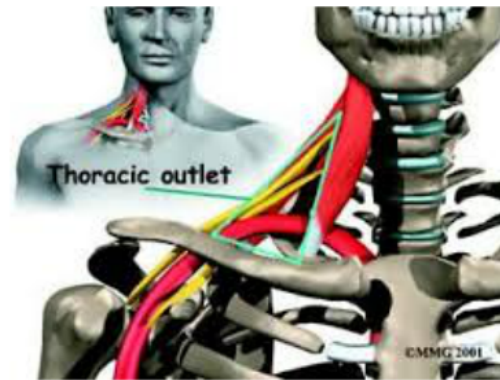
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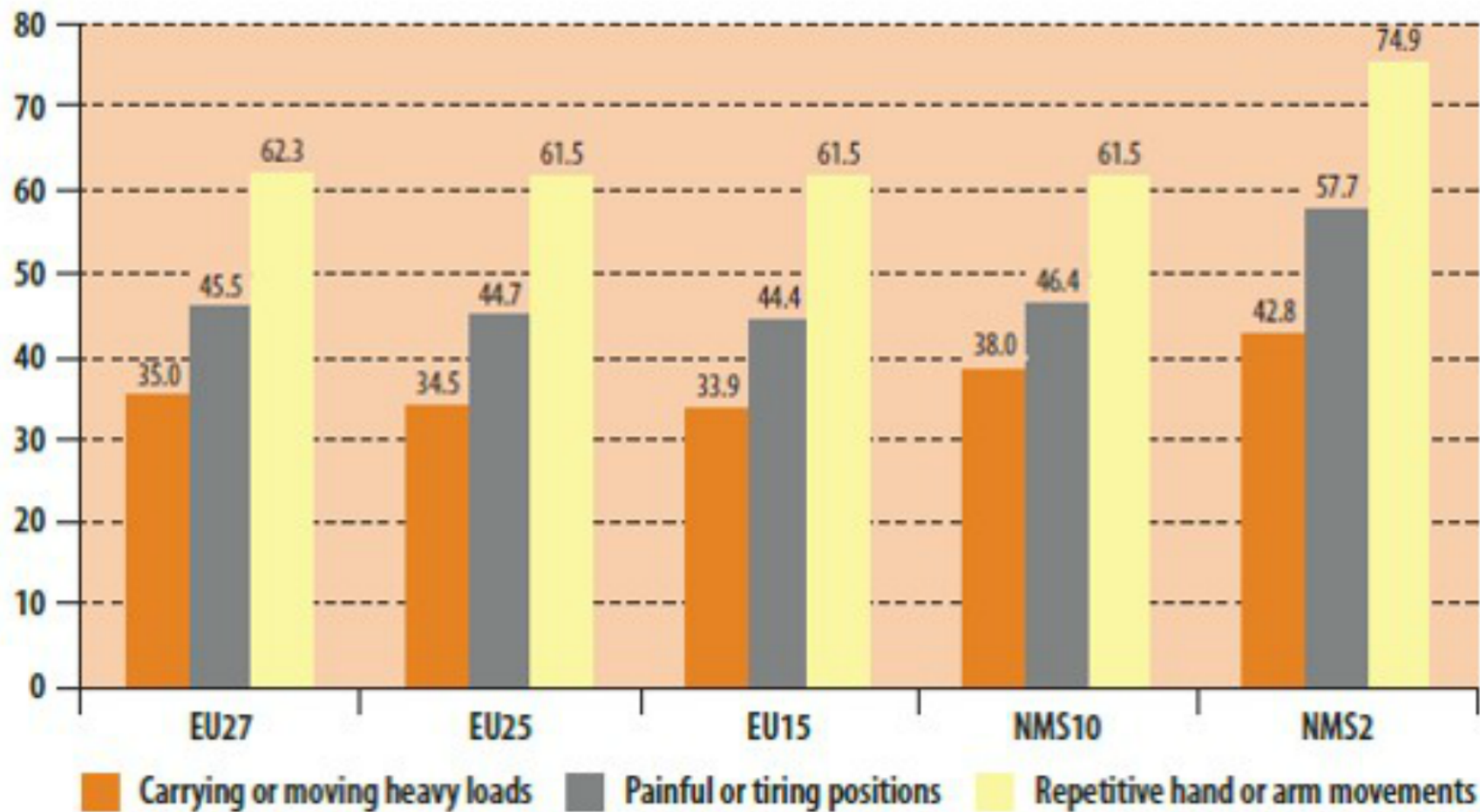


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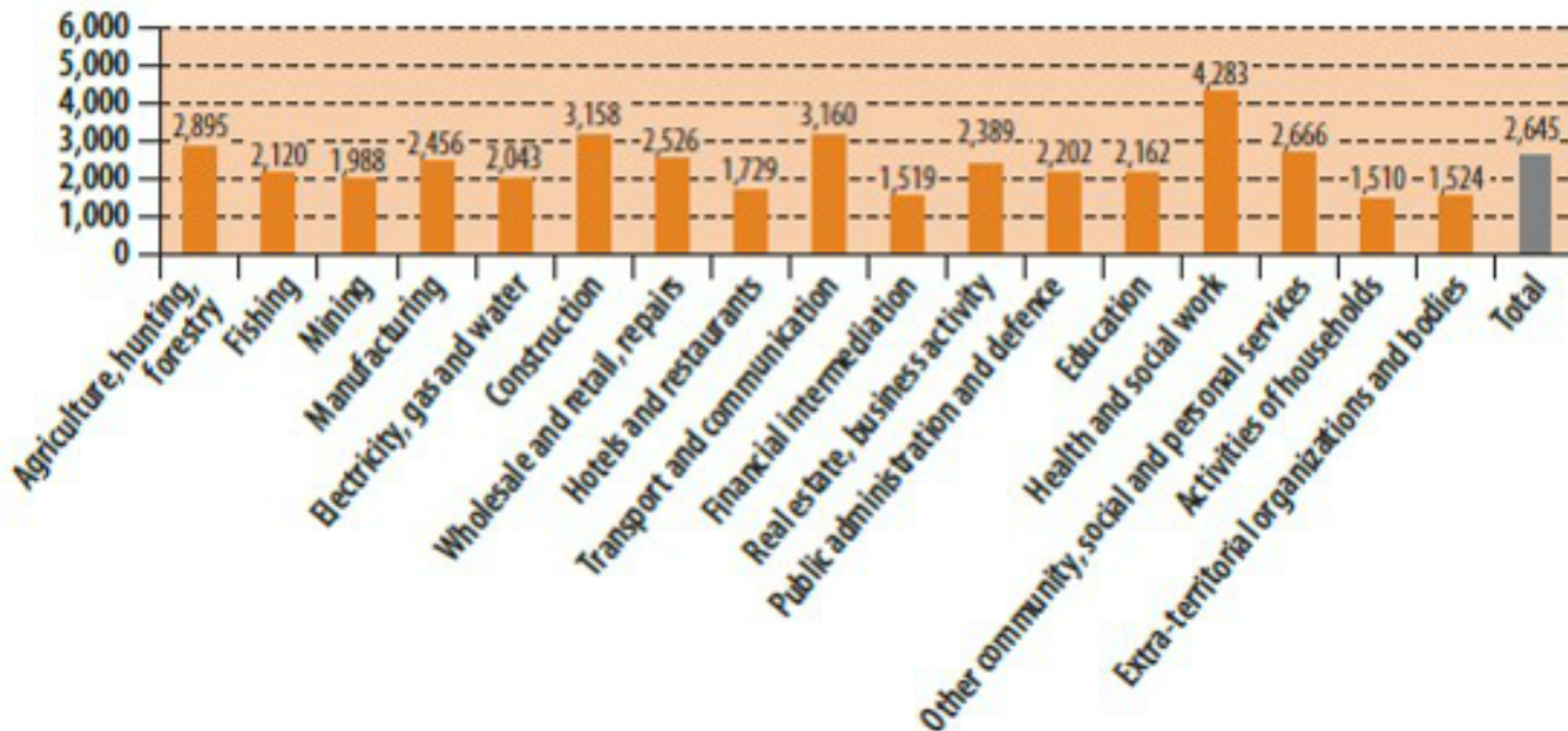
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During the medical assessment of work ability/ job suitability the occupational health service, or the employer ordering the work, must consider the personal risk factors.

- the worker is physically unsuited to carry out the task in question,
- if the employee suffers of vertebral column deformation presenting higher risk for back pain injury (spondylosis, Scheurman-disease, discopathy)
- the worker is wearing unsuitable clothing, footwear or other personal effects
- the employee does not have adequate or appropriate knowledge or training

Employers must ensure that workers and/or their representatives receive general guidelines and, where possible, precise information on:

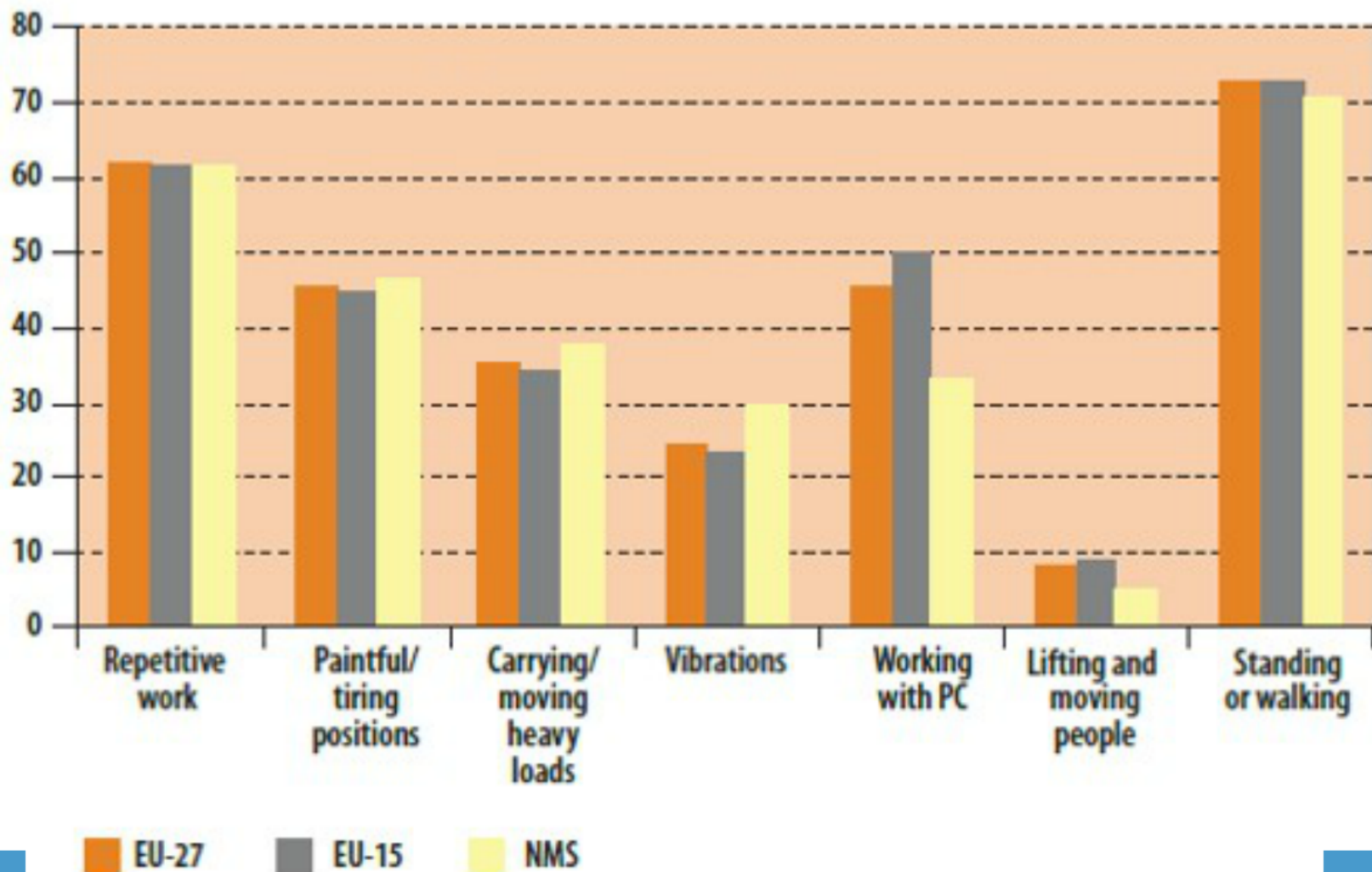
- the exact weight of a load, moreover
- the centre of gravity of the heaviest side when a package is eccentrically loaded

Employers must ensure that workers and their representatives receive additional proper training and information on how to handle loads correctly and the risks they might be open to, particularly if these tasks are not performed correctly – according to the decree.



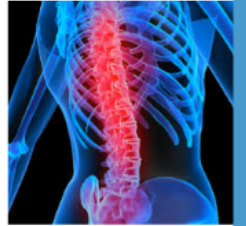
The highest risk factors related to activity in standing or walking position, repetitive work, and working with PC

Figure 60: % of workers report being exposed at least 25% of the working time, ESWC 2005



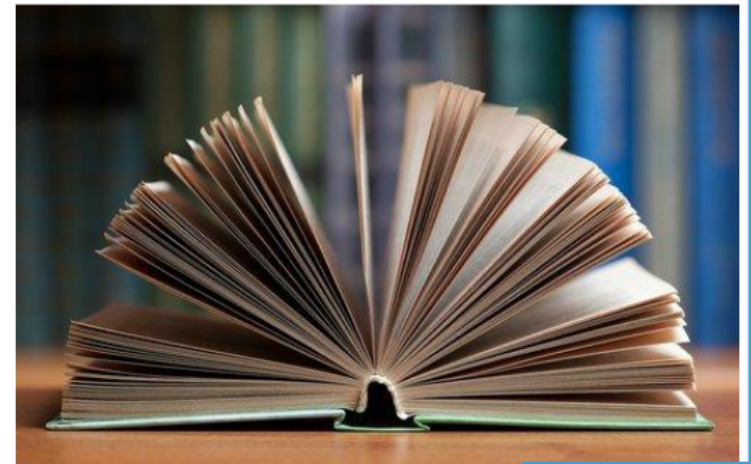
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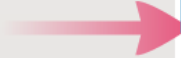
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