

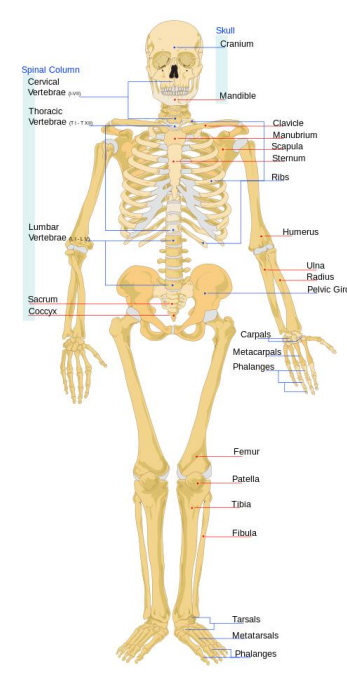
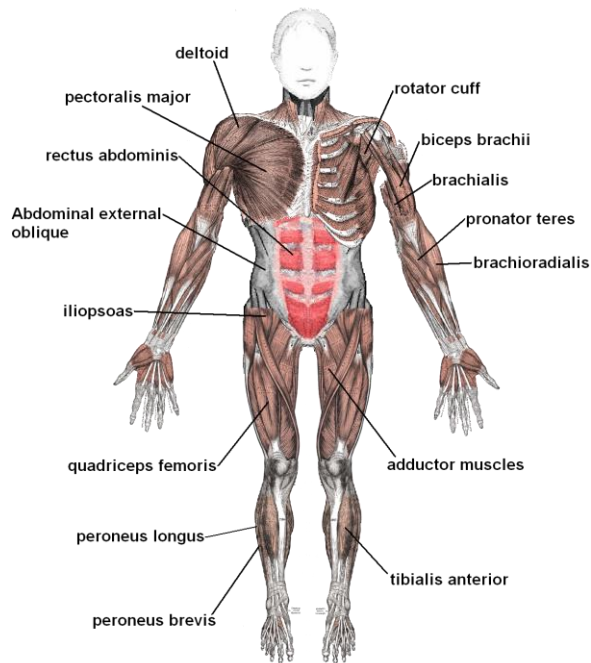
# Musculoskeletal Disorders

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JD Irving, Limited – Research Chair in Occupational Medicine

# What is a musculoskeletal disorder?

- Musculoskeletal system – two components the muscular system and the skeletal system.



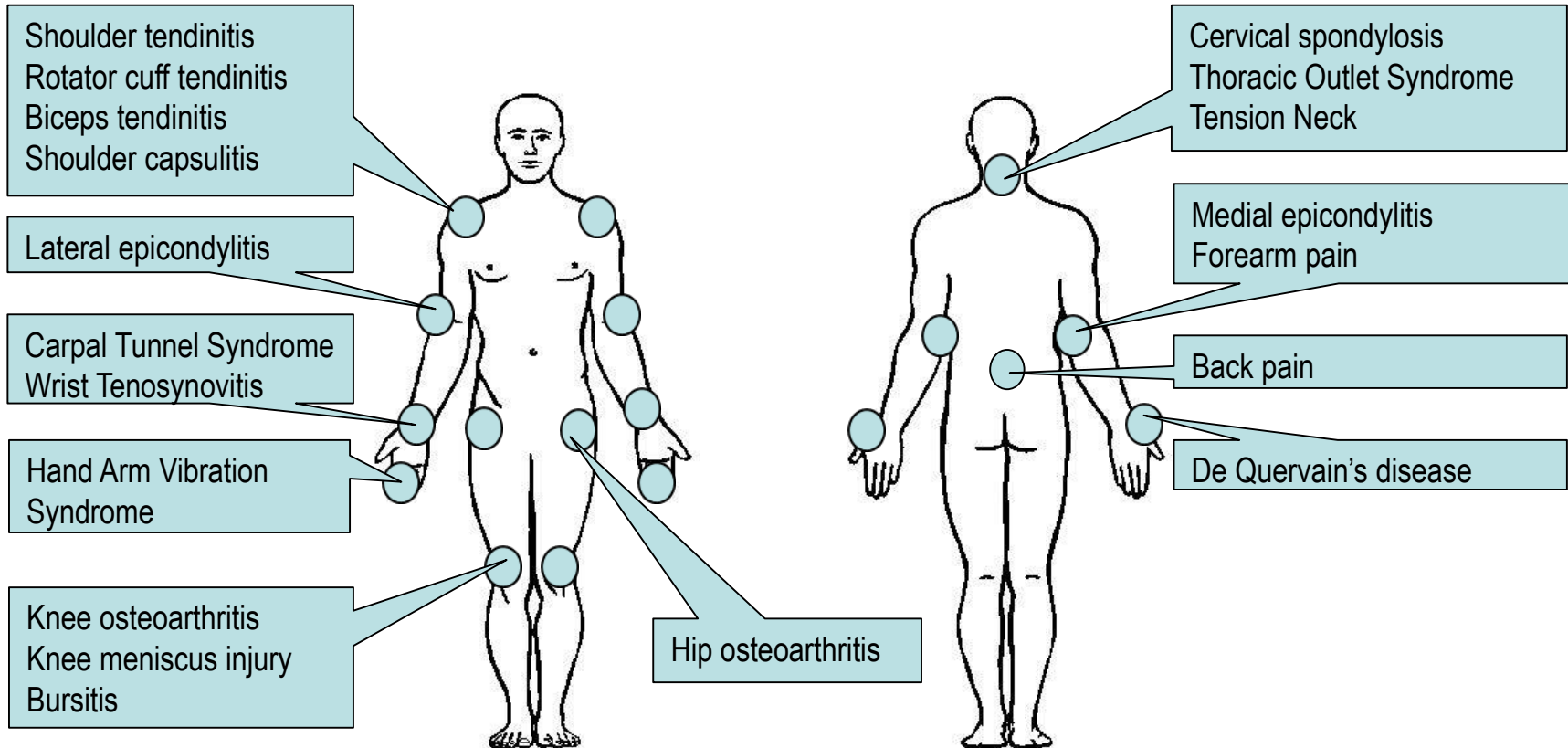
# What is a musculoskeletal disorder?

- Acute
- Chronic
- Conditions that involve the nerves, tendons, muscles, and supporting structures of the body and compromise their function.

# What is a work-related musculoskeletal disorder?

- Work is the only identifiable cause
- Work contributes significantly as one of several causative factors

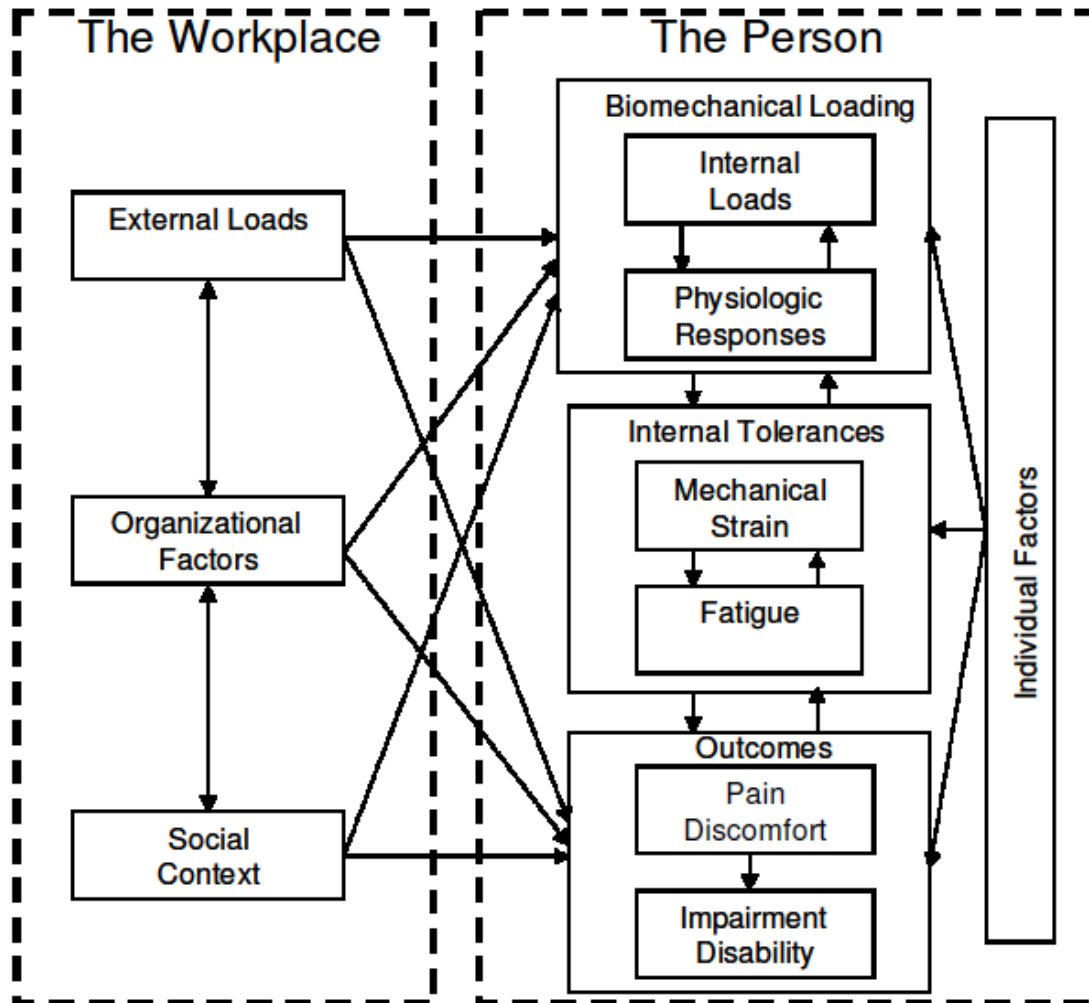
# Which parts of the body are affected?



# ILO Listed Musculoskeletal disorders

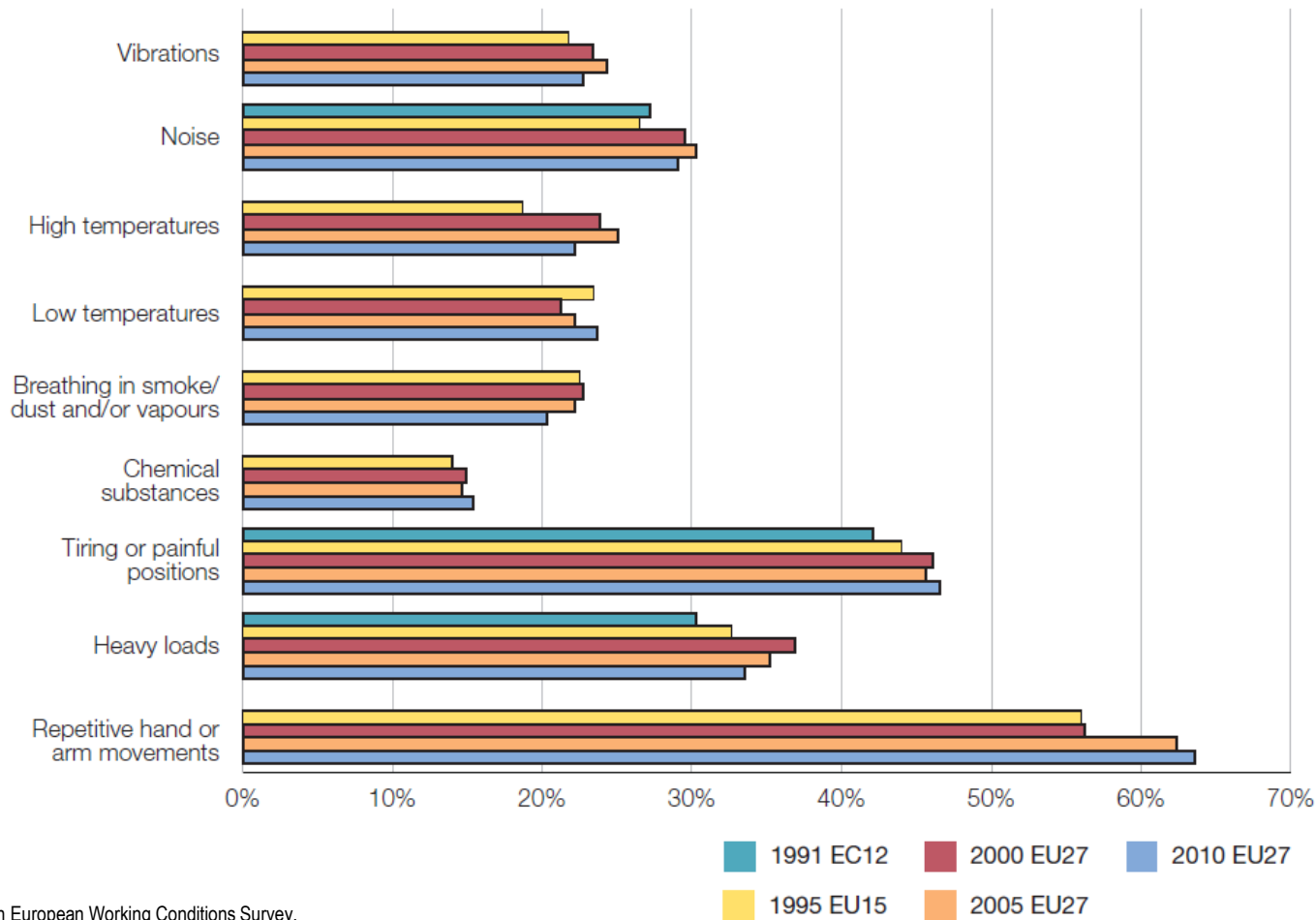
- 2.3.1. Radial styloid tenosynovitis
- 2.3.2. Chronic tenosynovitis of hand and wrist
- 2.3.3. Olecranon bursitis of the elbow region
- 2.3.4. Prepatellar bursitis (knee)
- 2.3.5. Epicondylitis (elbow)
- 2.3.6. Meniscus lesions (knee)
- 2.3.7. Carpal tunnel syndrome
- 2.3.8. Other musculoskeletal disorders.....
- 1.2.2. Diseases caused by vibration
- 1.2.3. Diseases caused by compressed or decompressed air

# Risk Factors



Theor Issues in Ergon Sci  
2001, 2;142-152

# Exposed to physical risks over time (% exposed quarter of time or more)

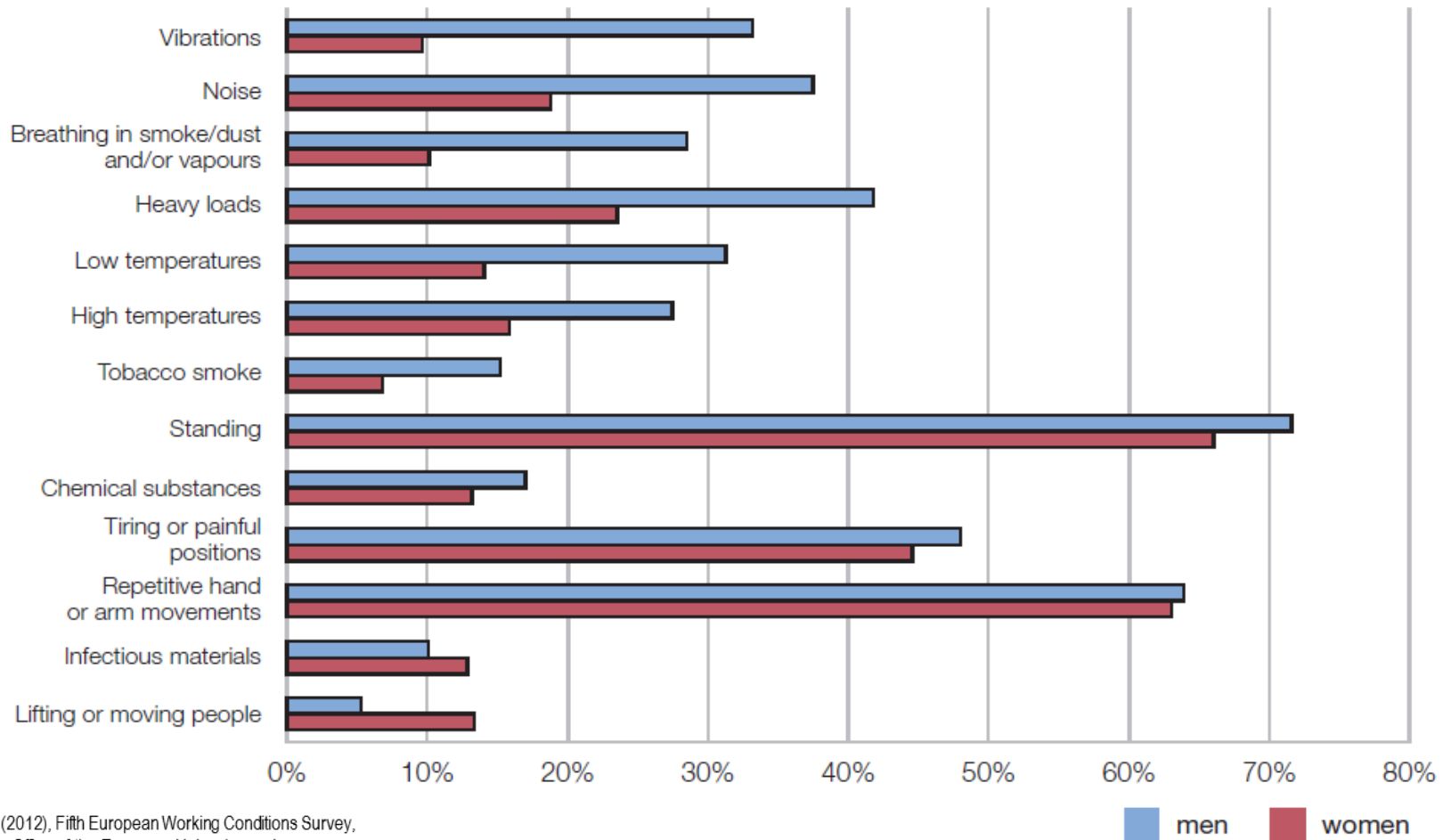


Eurofound (2012), Fifth European Working Conditions Survey,  
Publications Office of the European Union, Luxembourg.



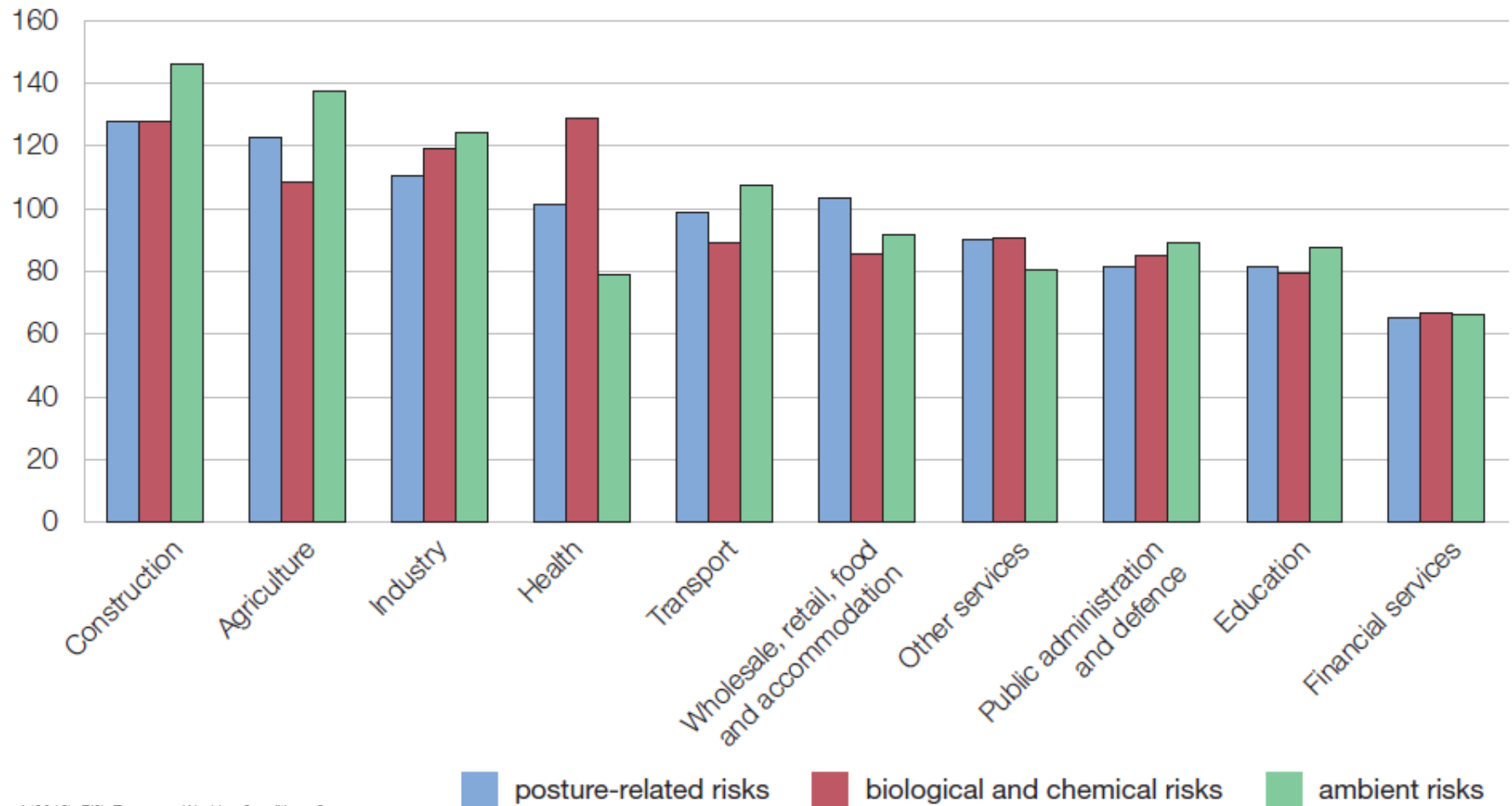
# Exposure to physical risks by gender

(% exposed quarter time or more) EU27



Eurofound (2012), Fifth European Working Conditions Survey,  
Publications Office of the European Union, Luxembourg.

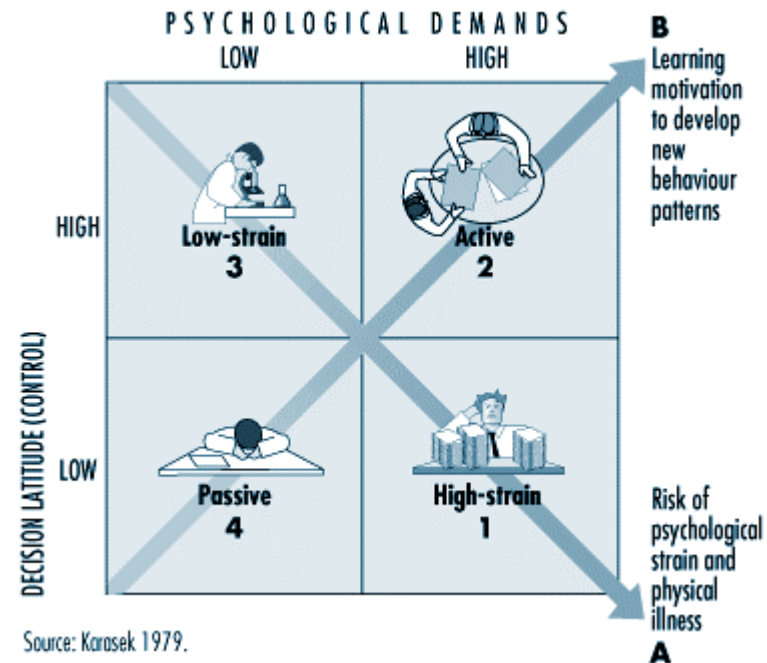
## Exposure to combined physical risks by sector



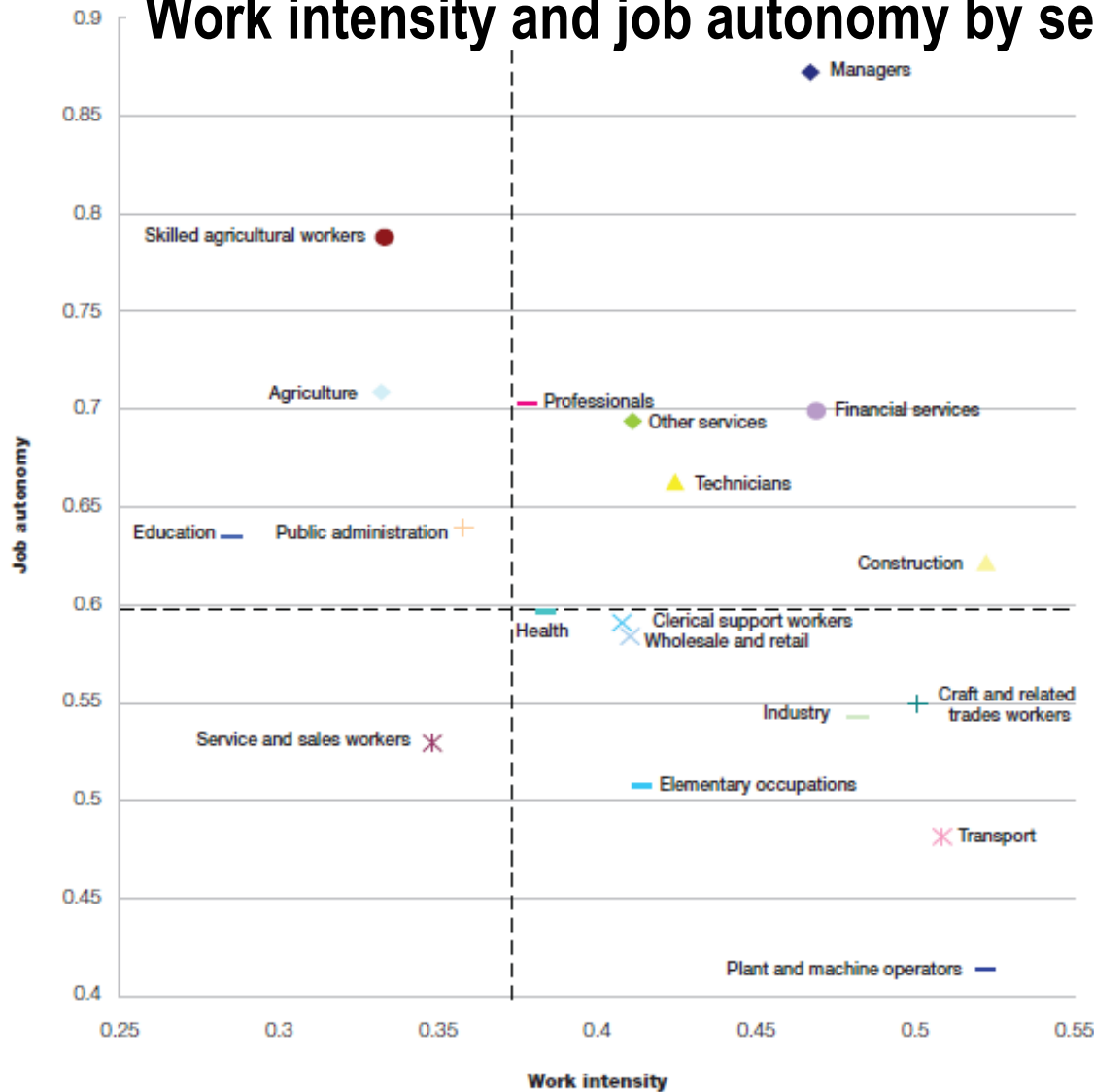
Eurofound (2012), Fifth European Working Conditions Survey,  
Publications Office of the European Union, Luxembourg.

# Psychosocial risk factors and musculoskeletal disorders

- High job demands
- Lack of job control
- Monotonous work
- Limited social support (at work)



# Work intensity and job autonomy by sector and occupation EU27



Eurofound (2012), Fifth European Working Conditions Survey, Publications Office of the European Union, Luxembourg.

## Prevalence studies of regional pain and clinical disorders in the upper limb and neck

<i>Pain site/disorder</i>	<i>Age group</i>	<i>Prevalence interval</i>	<i>Prevalence</i>	<i>Study population</i>
Shoulder pain	31–74	point	20%	community, Stockholm
	working age	point	13%	aeroengineering factory
	middle age	one month	14%	community, Malmo
Elbow pain	33–39	point	11.6%	textile workers
	working age	point	11–13%	aeroengineering factory
Epicondylitis	working age	point	2 %	aeroengineering factory
	31–74	point	2.5%	community, Stockholm
Epicondylitis and tenosynovitis	50–70	point	4.7%	community, Sweden
Tenosynovitis	33–39	point	3.5%	textile workers
Carpal tunnel syndrome	25–74	point	0.6% (M) 8% (F)	community, Holland
Neck pain	25–74	point	10%	community, US
	33–39	point	4%	textile workers
	working age	point	10%	aeroengineering factory

# How much does it cost?

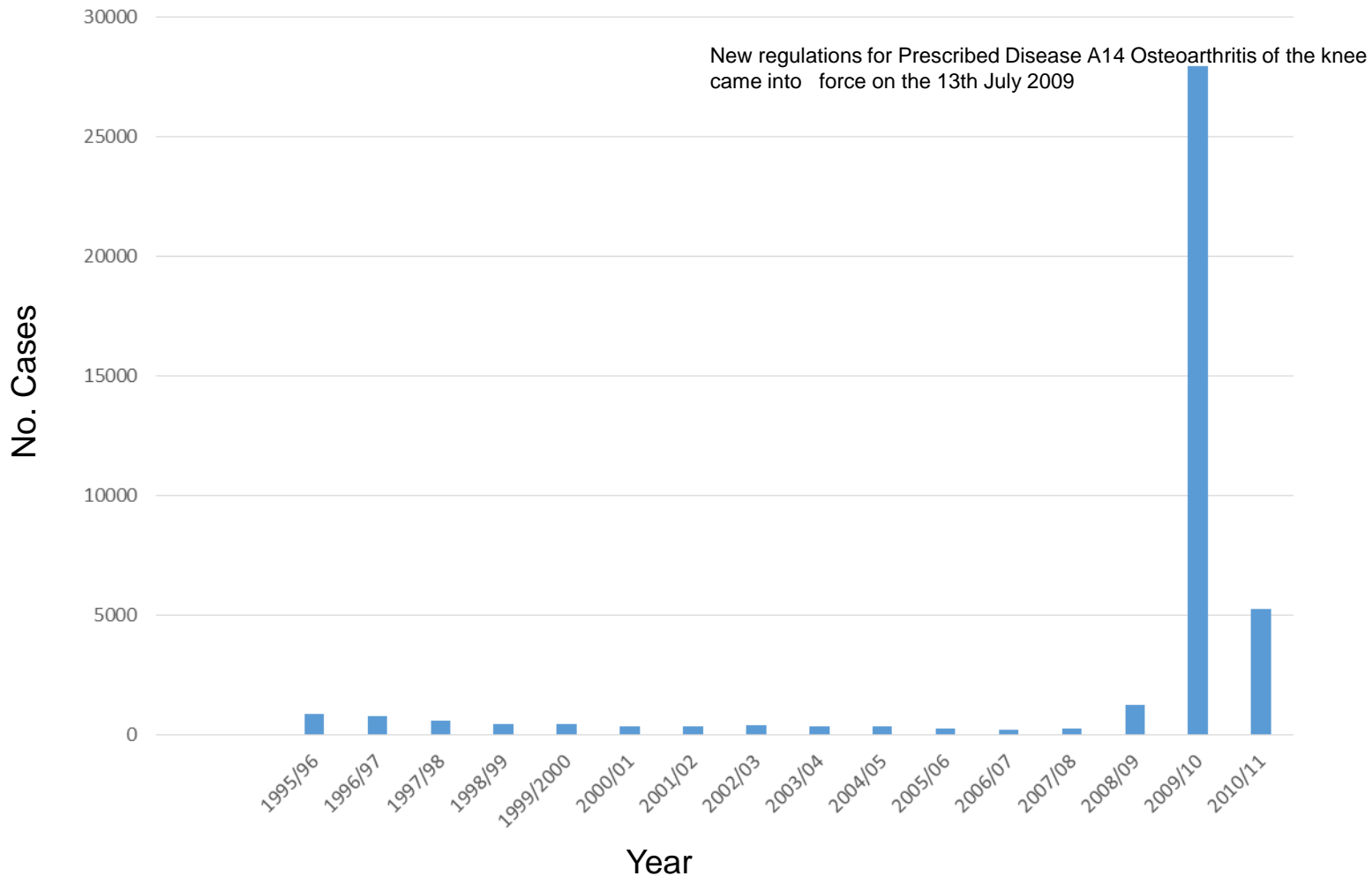
- Some studies have estimated the cost of work-related upper limb musculoskeletal disorders (WRULD) at between 0.5% and 2% of Gross National Product (GNP).
- France (2005) three quarters of occupational diseases were musculoskeletal disorders. The 31,000 compensated diseases have lead to a loss of 6.5 million workdays and a cost of 650 million EUR
- Germany (2006) costs of musculoskeletal diseases: about 23.7% of days lost (95 million days lost), and 23.9 billion EUR or 1.1% of the GNP in lost productivity and gross value added.
- USA, OSHA estimates that work-related musculoskeletal disorders account for over 600,000 injuries and illnesses (34 % of all lost workdays reported to Bureau of Labor Statistics). One out of every three dollars spent on workers' compensation. It is estimated that employers spend as much as \$20 billion a year on direct costs for MSD-related workers' compensation, and up to 5X that much for indirect costs

Eurofound (2012), Fifth European Working Conditions Survey,  
Publications Office of the European Union, Luxembourg.  
OSHA 29 CFR 1910; 29 CFR 1915

# Musculoskeletal Disease claims in Great Britain

A4	Task specific focal dystonia of the hand or forearm. For example, writer's cramp.	Prolonged periods of handwriting, typing or other repetitive movements of the fingers, hand or arm.
A5	Subcutaneous cellulitis of the hand.	Manual labour causing severe or prolonged friction or pressure on the hand. For example, miners and road workers using picks and shovels.
A6	Bursitis or subcutaneous cellulitis arising at or about the knee due to severe or prolonged external friction or pressure at or about the knee. For example, housemaid's knee	Manual labour causing severe or prolonged external friction or pressure at or about the knee. For example, workers who kneel a lot.
A7	Bursitis or subcutaneous cellulitis arising at or about the elbow due to severe or prolonged external friction or pressure at or about the elbow.	Manual labour causing severe or prolonged external friction or pressure at or about the elbow. For example, jobs involving continuous rubbing or pressure on the elbow.
A8	Traumatic inflammation of the tendons of the hand or forearm, or of the associated tendon sheaths. Tenosynovitis.	Manual labour, or frequent or repeated movements of the hand or wrist. For example, routine assembly workers.

# Musculoskeletal Disease claims in Great Britain



Data from -Table IIDB02

<http://www.hse.gov.uk/statistics/causdis/musculoskeletal/msd.pdf>



# Education & Training



Recognition

Risk factors  
Symptoms  
Diagnosis  
Treatment  
Controls

Prevention