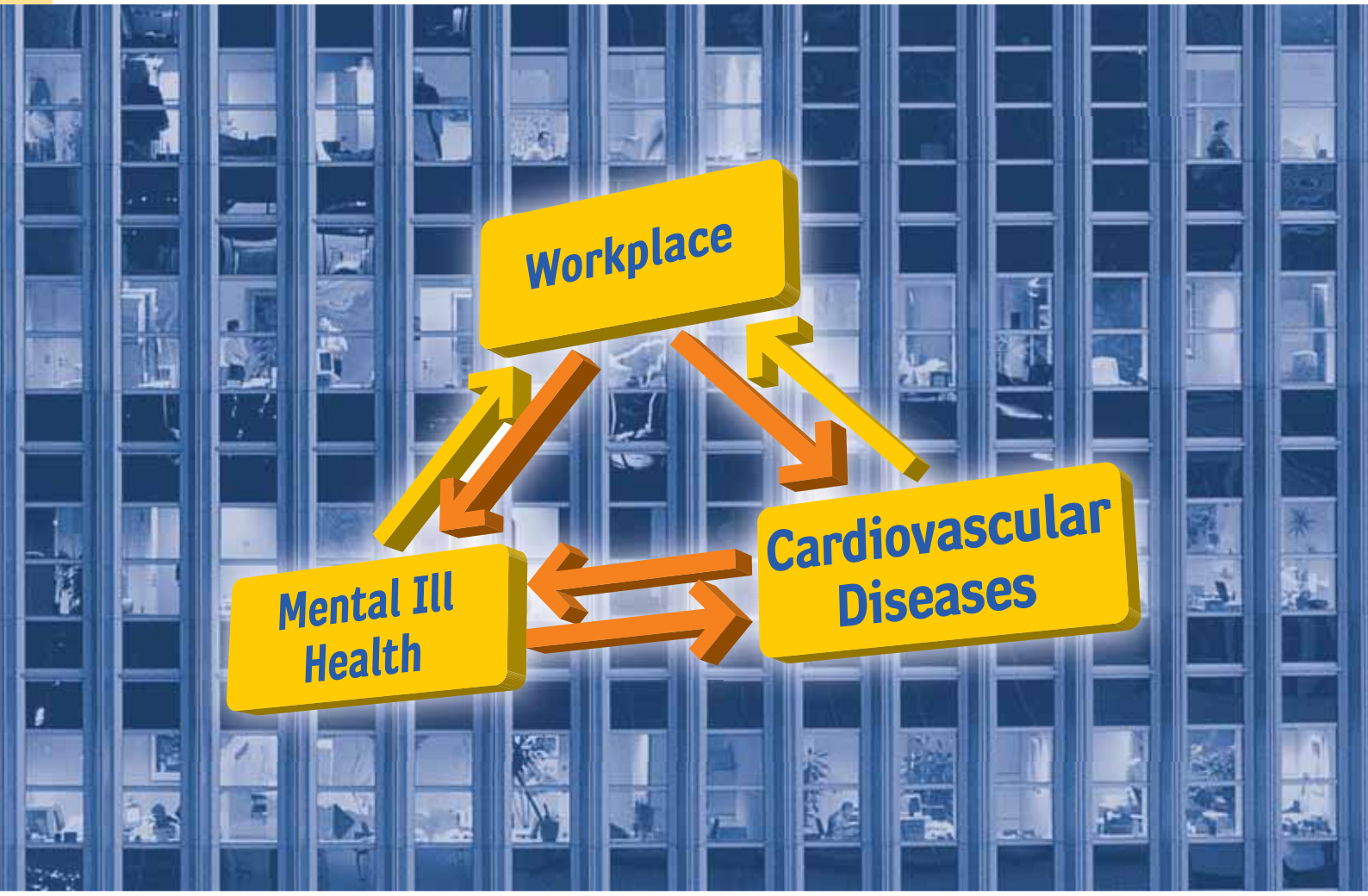
Hearts and Minds at Work in Europe

A European work-related public health report on Cardiovascular Diseases and Mental Ill Health



WORK HEALTH

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Hearts and Minds at Work in Europe

A European work-related public health report on
Cardiovascular Diseases and Mental Ill Health

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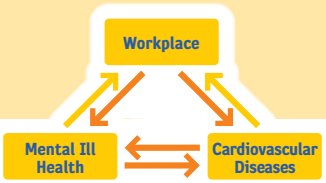

Working life can act as a risk factor for the health of employees and their families. However, there is also an inverse effect as an individual's state of health can have a tremendous impact on work. Private companies as well as public services are affected by diseases through employee absenteeism or reduced productivity, irrespective of the cause of the disease. Workplace health is therefore a public health issue as well.

Cardiovascular diseases (CVD) and mental ill health are diseases which put a major sickness burden on European workers, economies and social security systems. Cardiovascular disease is the main cause of death in the European Union accounting for over 1.9 million deaths each year. Mental ill health is experienced by more than 27% of the adult EU population during any given year. This means that nearly 83 million people suffer from mental disorders every year. Almost every second person in the EU has been affected by mental disorders at some point in his or her lifetime. Finally, it is well known that mental disorders can be risk factors for CVDs and that CVDs increase the risk of mental disorders.

Both diseases share common risk factors in the working environment. There is scientific consent that stressful psychosocial work environments are associated with a reduction in mental and physical health. Stress occurs in many different circumstances, but is particularly strong when a person's ability to control the demands is threatened. Insecurity about successful performance and a fear of negative consequences resulting from failure to perform may evoke powerful emotions of anxiety, anger and irritation. Stress can be caused by psychosocial hazards such as work design, organization and management; high job demands and low job control, and issues like harassment and violence at work as well as physical hazards, such as noise and temperature.

In general, cardiovascular diseases and mental ill health have multiple causes. They are associated with working and living conditions, individual characteristics and socio-economic status. Health promotion and prevention activities must therefore take a multi-disciplinary approach. However, there is still a tendency in some areas to tackle CVD and mental ill health in isolation. This report points out that sustainable health promotion and prevention calls for collaboration across different professions and policy fields. It emphasises that interventions to improve workplace health, although embedded in different concepts, have common goals, characteristics and benefits. These interventions can effectively reduce risk factors and diseases and show a positive return-on-investment.

The improved health of workers should be sufficient reward in itself for any organisation to introduce workplace prevention measures; if any further incentive were needed, for every 1 € spent on health promotion and intervention programmes, potentially 5 € can be saved due to reduced absenteeism, quite apart from substantial savings in medical treatment costs. In other words, workplace health promotion is a hard-headed business decision with an attractive payback – for companies as well as for societies.

1 Introduction

1.1 Why a European work-related public health report?

In modern societies, work is the source of most individual, corporate and community wealth. The world of work therefore is particularly vulnerable to disruption caused by illness among employees. Illness can involve a temporary absence, lead to reduced productivity, to long-term disability or even to premature death. It can also end careers with a consequent loss of knowledge, skills and experience from companies and public organisations.

What is becoming more widely recognised is how work itself can make people ill, with a high price to be paid by individuals, organisations and society in general:[1,2,3]

- In the European Union in 2005, there were about 4.4 million accidents at work resulting in more than 3 days absence by the employees involved
- Each year in the EU 350 million working days are lost due to work-related health problems and almost 210 million due to accidents at work
- 35% of workers consider that their health is negatively affected by their work
- The costs of workplace-related illnesses in Europe are estimated to be between 2.6% to 3.8% of Gross Domestic Product (GDP).

It is this interrelation that makes workplace health such an important element of modern public health policies. This is beginning to be reflected in EU policy; e.g. the EU Commission now considers workplace health as one of the most important aspects of EU policy-making on employment and social affairs and is striving for consistency with public health policies.[4]

Health reporting is an effective instrument in pinpointing priority fields in public health policy. However, working life issues so far play only a minor role in EU health monitoring which is focused mainly on work accidents and occupational diseases. The main strength of work-related health monitoring is that it can point to the most important actions for health promotion and disease prevention and can serve as a tool for policy implementation. Against this backdrop, a policy-cycle-model of work-related health monitoring has been developed by the WORKHEALTH project which puts workplace health in the context of the wider policy environment.[5] The basic idea is that health monitoring is only relevant if it is actually going to be used by policy makers. Many health policies are very relevant to the workplace and the health of the workforce (Fig. 1.1). These include public health, quality of work & life, employment and economic development, all of which lead to a range of workplace policies and activities. These activities frequently involve changing structures and processes at the worksite or providing new services and resources, such as training people etc. Output indicators evaluate these activities and assess their direct effect on (public) health. There are feedback loops in this model which change it from a top-down model of policy implementation to one where policy making can benefit from feedback. Knowledge about the effects of policy implementation on health and other outcomes provides feedback on workplace policies as well as on the super-ordinate policies. However, health monitoring is only effective when the results are accepted and shared with relevant stakeholders.

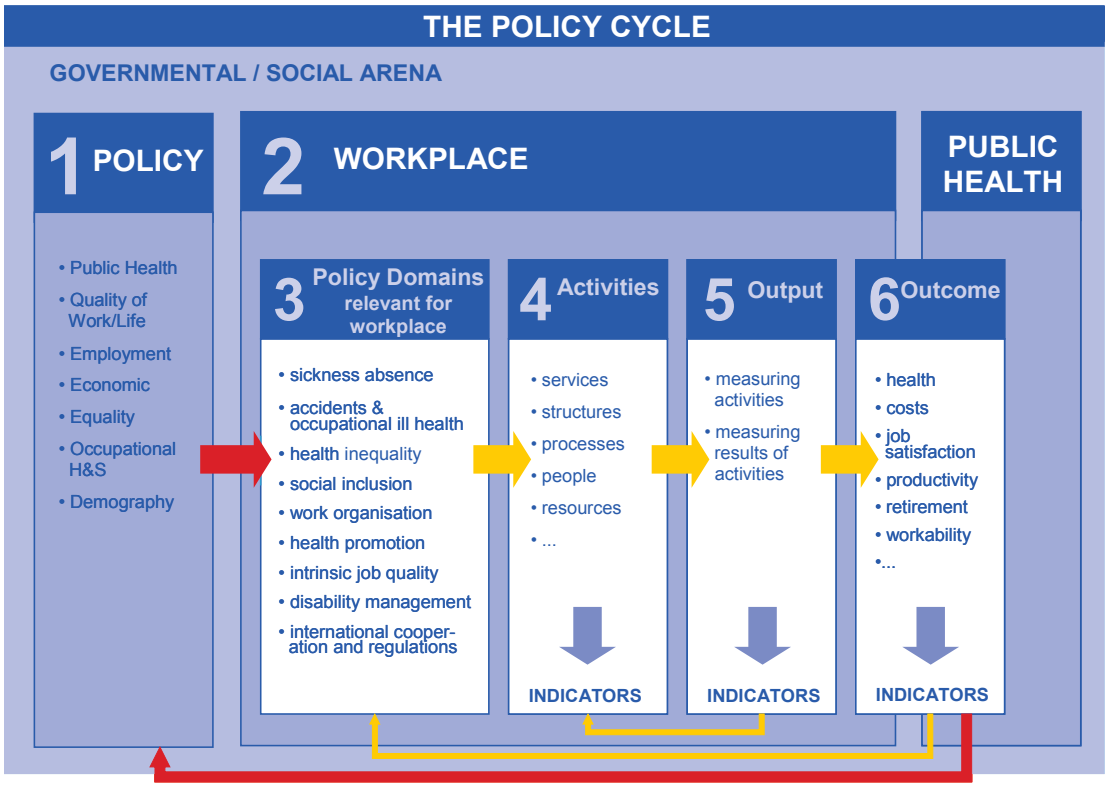

Figure 1.1: The policy cycle model of health reporting

1.2 Why cardiovascular diseases and mental ill health?

In general, the public health impact of diseases cannot be assessed by a single indicator. Diseases are especially important in society because they are widely prevalent, the cost of treatment is high, they cause frequent short-term as well as long-term absence from work and can lead to preterm mortality or to a significant reduction in quality of life. Added to this is the fact that certain populations can be more affected than others and that some disease is easily preventable.
This report concentrates on cardiovascular diseases (CVD) and mental ill health – and their links with the workplace (Fig. 1.2) because these conditions

- are of high public health relevance
- have a strong impact on work e.g. sickness absence and early retirements
- have work-related risk factors
- share common work-related risk factors
- are interrelated, as mental disorders can be a risk factor for CVD and vice versa
- can be prevented by common health promotion and prevention interventions
- can be effectively prevented by taking workplaces as a setting for health promotion and prevention.

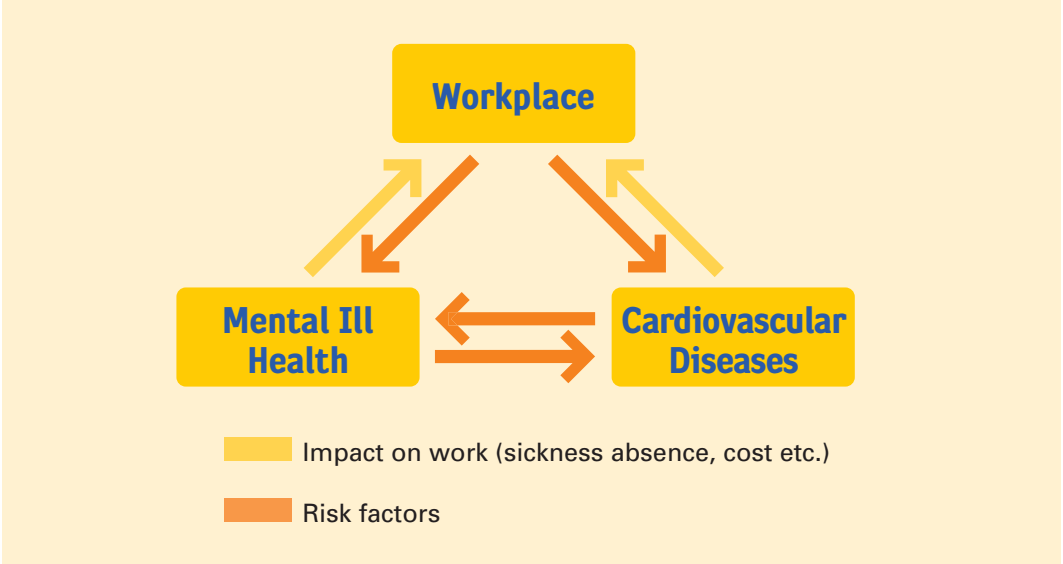

Figure 1.2: The triangle relationship of CVD, mental ill health, and work

1.3 What is the aim of the report?

The concept of this European work-related public health report stems from the above policy-cycle-model (Fig. 1.1). The report starts by identifying diseases with high public health importance, looking at risk factors, the populations affected and preventive measures, leading to the identification of important domains for policy recommendations and activities.

The interrelations between CVD, mental ill health and work are complex. Work may be a risk factor, but it can also play an important health supportive role. Since disease can be seen as one pole of a health-disease continuum, this report is not restricted to mental disorders and CVD but implicitly addresses wider mental and circulatory health.

Many papers have been written on CVD and mental disorders and excellent reviews and position papers are available from scientific and political institutions. However, although work is recognised as a risk factor for both disease groups, information on the occurrence of the diseases across occupations and economic sectors is rare. The impact of these diseases on work has obviously been ignored. This report draws upon information available in existing publications rather than carrying out another review of scientific papers. Data are used specifically to highlight the above mentioned interrelation between diseases and workplaces. It is preferred to use European data, but national data are also included in order to illuminate issues not covered by international data.

Chapter 2 addresses the impact of diseases on work. This relationship is usually overlooked in work-related heath reporting, which focuses almost exclusively on the impact of work on diseases. However, private companies as well as public services are affected by diseases through absenteeism of employees or reduced productivity.

CVDs and mental ill health are both causes and consequences of each other. Chapter 3 highlights this relationship. For example, there is strong evidence that depression and anxiety are risk factors for heart diseases. The strength of this association is of similar magnitude to that of standard risk factors such as smoking or high cholesterol. Furthermore, people suffering from long term and chronic disease like CVD are consistently more likely to develop mental health disorders such as depression.

Chapter 4 addresses the impact of working conditions on the development of CVDs and mental health problems and focuses on the most important work-related risk factors for both diseases. With CVD in particular, research into the risk factors mostly focuses on individual and lifestyle factors such as blood pressure, tobacco and alcohol consumption, high cholesterol and obesity. However, research has also shown that working conditions and especially work-related stress may cause CVD and mental health problems.

Because stress is known to be the most important work-related risk factor for CVD and mental ill health, sustainable stress prevention is the most effective way to tackle this problem in workplaces. In chapter 5, it is shown that interventions to improve workplace health, although embedded in different concepts, have common goals, characteristics and benefits. These interventions can effectively reduce risk factors and diseases and show a positive return-on-investment. Also, these interventions are most effective when work health and public health aspects are addressed together in the course of health promotion, disease prevention and return-to-work-measures.

Finally, Chapter 6 provides recommendations to policy makers and others with the power to develop or influence policies and practices at an international, national, regional, local or company level. It points out that effective and sustainable health promotion and prevention calls for collaboration across different professions and policy fields.

BOX 1.1: What is meant by cardiovascular disease and mental ill health?

Diseases of the circulatory system

Diseases of the circulatory system, classified as chapter 9 in the ICD-10 classification scheme, is a general category of diseases that affect the heart and the circulatory system. An often used term for these diseases is CVD. This includes:

1. diseases of the heart (including coronary heart disease),
2. cerebrovascular disease (including stroke),
3. hypertensive diseases and
4. atherosclerosis and other diseases of arteries, arterioles and capillaries.

Mental ill health

According to the EU Green Paper „Improving the mental health of the population", the term mental ill health includes mental health problems and strain as well as diagnosable mental disorders.[6] The main categories of mental and behavioural disorders covered in ICD-10 include:

- Organic, including symptomatic, mental disorders e.g. dementia, Alzheimer's disease, delirium
- Mental and behavioural disorders due to psychoactive substance use e.g. harmful use of alcohol, opioid dependence syndrome
- Schizophrenia, schizotypal and delusional disorders e.g., paranoid schizophrenia, acute and transient psychotic disorders
- Mood (affective) disorders e.g., bipolar affective disorder, depressive episodes
- Neurotic, stress-related and somatoform disorders e.g., generalised anxiety disorders, obsessive-compulsive disorders
- Disorders of adult personality e.g. paranoid personality disorder
- Mental retardation e.g. mild mental retardation

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2 The burden of cardiovascular diseases and mental ill health on work

Work demands and working conditions can present a risk to the health of employees. This important issue is a matter of concern for employers and governments everywhere. But it must not be forgotten that the relationship is two-way: poor health among employees can have a major impact on all organisations and enterprises. Private companies as well as public services are affected when disease leads to absenteeism or reduced productivity. This chapter looks at the burden imposed by CVD and mental ill health.

2.1 How many people die or suffer from cardiovascular diseases?

Cardiovascular disease is the main cause of death in the European Union; nearly half of all deaths in the 25 countries of the EU (42%) are the result of CVD. This means that CVD accounts for over 1.9 million deaths each year. The age-standardised death rate equates to 257 deaths per 100.000.

CVD is the second main cause of premature death before the age of 65 in the EU, the first being malignant neoplasms (cancer) (Table 2.1). According to the European Cardiovascular Disease Statistics 2005 CVD is the main cause of death of men in ten countries of the EU and for women in just one country – Latvia.[1]

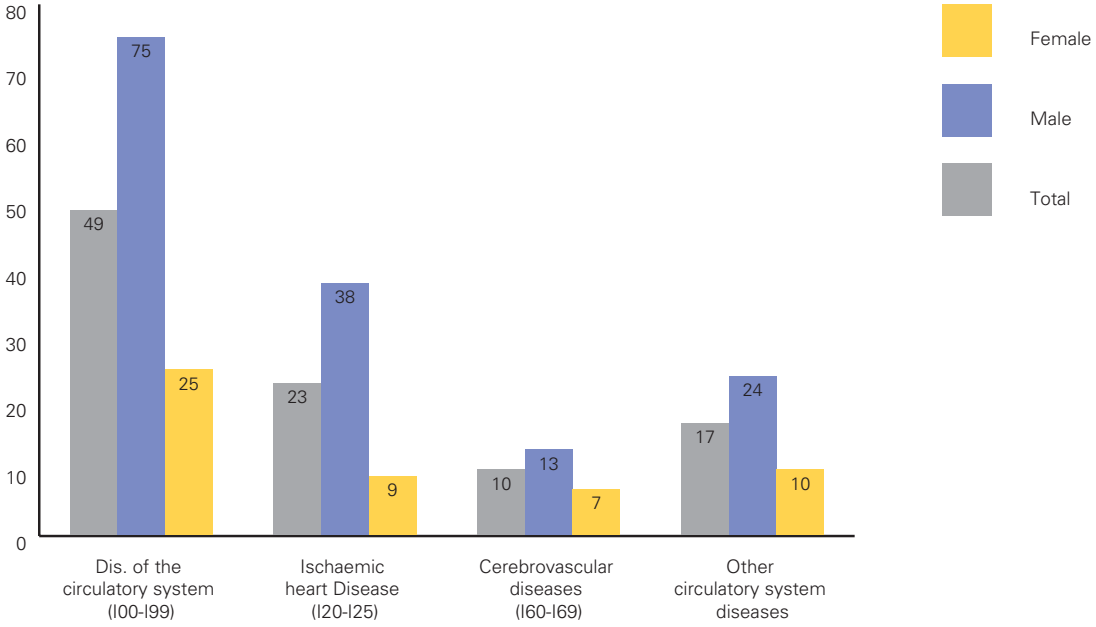
Approximately 24% of all deaths a year (225.000) in the working-age population are attributed to CVD. The age-standardised death rate amounts to 49 deaths per 100.000.

Table 2.1: Causes of mortality in the EU25 for people aged 0-64 years

ICD-Code	ICD-10 main groups	Total	Male	Female
	All cases	**222.1**	**304.1**	**143.6**
A00-B99	Infectious/parasitic diseases	3.6	5.1	2.2
C00-C97	Malignant neoplasms	78.3	94.6	63.1
D50-D89	Dis. of the blood/blood forming organs/certain immunity disorders	0.8	1.0	0.6
E00-E90	Endocrine/nutritional/metabolic diseases	4.3	5.5	3.1
F00-F99	Mental/behavioural disorders	3.8	5.9	1.6
G00-H95	Dis. of nervous system/sense organs	5.4	6.4	4.3
I00-I99	Dis. of the circulatory system	49.3	74.8	25.2
J00-J99	Dis. of the respiratory system	7.8	10.7	5.1
K00-K93	Dis. of the digestive system	15.5	22.4	8.9
L00-L99	Dis. of skin/subcutaneous tissue	0.1	0.1	0.1
M00-K99	Dis. of musculoskeletal system/connective tissue	0.6	0.5	0.7
N00-N99	Dis. of genitourinary system	1.5	1.8	1.2
P00-P96	Perinatal conditions			
Q00-Q99	Congenital malformations	3.6	3.8	3.3
R00-R99	Symptoms/signs/abnormal findings/ill-defined causes	8.7	13.1	4.5
V01-Y89	External causes of injury and poising	33.1	51.9	14.4

Source: WHO, Health for All database, June 2006, age-standardised death rates (SDR) per 100.000

With regard to the mortality rates, the most common CVD before the age of 65 is ischaemic heart disease (including myocardial infarction), which is responsible for nearly 50% of all CVD deaths (Fig. 2.1). Second are cerebrovascular accidents or strokes (nearly 20%) while one third of all CVD deaths are caused by all other CVD diagnoses, particularly pulmonary heart diseases.



Source: WHO/Europe, Health for all database, June 2006, EU25, age-standardised death rates (0-64) per 100.000

Figure 2.1: Deaths of CVD by sex and diagnosis, 2004

CVD is not only a major cause of death but also a major contributor to ill health and disability. But compared to mortality rates, morbidity rate statistics for CVD are much more difficult to obtain at European and national level. Reliable and comparable estimates of the number of prevalent cases of CVD in Europe are not available.

However, it is possible to estimate the disabling effect of CVD through the use of the indicator 'years lived with disability' (YLD)[a], developed by the WHO Global Burden of Disease Study.[2] The corresponding data have shown that CVD is rather less important as a cause of 'years of life lost in disability' compared, for example, with mental disorders or injuries. But CVD is still a major factor: The WHO study estimated for the European region A[b] that in 2002 6,4% of years life lost in disability were due to CVD.

[a] This indicator focuses on the non-fatal consequences of diseases and injuries and measures lost years of healthy life through living in health states of less then full health. To estimate YLD for a particular cause for a particular time period, the number of incident cases is multiplied by the average duration of the disease and a weight factor that reflects the severity of the disease.

[b] The European subregion A comprises 27 countries with very low child and very low adult mortality. These are the 'Established Market Economies' (mostly Northern, Southern and Western countries in Europe and all the member states of the EU15)

Gender and age

There are large differences between the CVD death rates of men and women of working age in the EU (Figure 2.1). The death rate is three times more frequent in men (75 deaths per 100.000) than in women (25 deaths per 100.000). In men, 26% of all deaths before the age of 65 are from CVD, in women 20%. Emphasising these gender differences, the mortality for ischaemic heart disease is more than four times higher in males than in females and nearly twice as high for cerebrovascular disease. Thus, for men, ischaemic heart disease by itself is the single most common cause of death before the age of 65 in the EU, accounting for almost 110.000 deaths (=14% of all deaths under the age of 65). For women, ischaemic heart disease causes 7% of deaths in the working-age population.

Because the underlying pathology of CVD – atherosclerosis develops over many years and is usually advanced by the time the first symptoms occur – it is not surprising that the mortality rates increase with age, particularly after age 44 (see Table 2.2). Thus in view of the aging workforce and the health conditions of elderly workers, CVD could play an important role.

Table 2.2: Deaths from CVD by age and sex in the EU, 2004

		EU25	EU15	EU10
Males	Age-group			
	15-29	4.4	4.1	5.5
	30-44	29.6	24.9	57.2
	45-59	181.7	141.6	377.9
	60-74	765.4	650.5	1530.2
Females	Age-group			
	15-29	2.4	2.4	2.5
	30-44	10.8	9.8	16.8
	45-59	57.4	45.9	110.8
	60-74	347.7	286.1	687.8

Source: WHO/Europe, European mortality database (MDB), June 2006, age-standardised death rates (0-64) per 100.000

Another indicator of the burden of ill health caused by CVD is the sickness absence rate. Table 2.3 gives a comparison of sick leave days and cases between age groups on the basis of health insurance data from Austria, Germany and Sweden. The data indicate also that CVD is becoming more relevant in later life. The days of illness and number of cases increase with age, particularly in the 50+ group. For example, in Austria the rate of sick leave days in the age group 51-60 is ten times higher than between 21 and 30.

Employees over 60 seem to be a special group in sickness absence terms because some national pension schemes allow people with serious chronic illness to leave work from the age of 60.

The comparatively low sickness absence rates in Sweden could be explained by the fact that only sick leave lasting longer than 14 days is included.

Table 2.3: Sick leave due to disorders of the circulatory system

Age	Sick leave days per 1.000 employees			Sick leave cases per 1.000 employees			Sick leave duration per case (days)		
	Austria	Germany	Sweden	Austria	Germany	Sweden	Austria	Germany	Sweden
≤ 20	75.73	85.39	13.36	14.04	19.12	0.05	5.4	4.5	83.2
21-30	123.70	132.63	56.74	13.92	15.67	0.13	8.9	8.4	88.3
31-40	241.09	222.92	176.30	15.46	16.36	0.43	15.6	13.6	116.6
41-50	487.77	574.25	597.73	22.67	28.90	1.57	21.5	19.9	154.2
51-60	1214.80	1547.33	1763.83	40.39	53.25	4.42	30.1	29.1	216.7

Absolute comparability is limited due to the different national social insurance systems. For Sweden only sick leave days lasting longer than 14 days are included.

Source: Health insurance data from Upper Austria 2004, Germany 2004 (BKK-Federation), and Sweden 2005, own calculations.

Socio-economic position and occupation

Numerous studies have shown the strong inverse relationship between socio-economic position and the incidence and prevalence of CVD, regardless of the measure of socio-economic position used (e.g. income or education). In all countries with available data, incidence and mortality from cardiovascular disease is higher among men and women in a lower socio-economic position. Additionally, the distribution of some CVD-related individual risk factors, like obesity, high blood pressure or smoking, shows a similar pattern.[3,4] So individual risk factors are one explanation for socio-economic inequalities in CVD health. But, in this context, several studies emphasised that the conventional risk factors account for less than half the differences in CVD risk between higher and lower social classes.[5] Higher CVD mortality would continue to exist for people of lower socio-economic position even if their health behaviour was improved. So other risk factors have to be included, for example work-related factors.

There is evidence from a number of studies in Europe that the risk of CVD differs widely between occupational groups, which in turn are often associated with a specific socio-economic position. For example, at the end of the 1980's in England the premature death rate from coronary heart disease for male manual workers aged 35-64 is 58% higher than for non-manual workers. For female manual workers belonging to the same age group, the death rate is more than twice as high.[6] A Swedish study of the incidence of first events of acute myocardial infarction found high risk levels in men working in the industrial and transportation sector (Table 2.4).[7] The European Heart Network commented that these differences in CVD risk could reflect the fact that certain occupations tended to be carried out by people with a high CVD risk profile or who exhibited unhealthy lifestyle factors, such as smoking or poor diet. However, they could also be attributed to particular working conditions associated with the job (see Chapter 4).[5]

Table 2.4: Occupations with a high and low incidence of first myocardial infarction among Swedish men and women

Men			Women		
Occupation	**Relative Risk**	**Confidence interval**	**Occupation**	**Relative Risk**	**Confidence interval**
Low risk			Low risk		
Judges	0.3	0.2-0.6	Teachers	0.4	0.3-0.7
Lawyers	0.5	0.3-0.8	Govt administration employees	0.6	0.4-0.8
Chemists, Physicist	0.5	0.3-0.8	Teachers of painting, music etc	0.6	0.4-0.9
Physicians	0.6	0.5-0.9	Physiotherapists	0.6	0.3-1.0
Dentists	0.6	0.4-1.0	Nurses	0.7	0.6-1.0
Designers	0.6	0.4-1.0	Secretaries, typists	0.8	0.7-0.9
Composers, musicians	0.6	0.4-0.9			
University Teachers	0.7	0.4-1.0			
High risk			High risk		
Metal process workers	2.8	1.4-5.8	Bench carpenters	2.0	1.0-3.9
Frame and circular sawyers	1.8	1.0-3.0	Protective service workers	2.0	1.0-3.8
Paper and paperboard workers	1.8	1.1-2.9	Tele assemblers	1.8	1.0-3.3
Chemical process workers	1.6	1.1-2.3	Toolmakers, machine assemblers	1.8	1.1-3.1
Plastic produce workers	1.5	1.1-2.0	Kitchen assistants	1.5	1.0-2.1
Ships deck officer	1.8	1.0-3.2	Building caretakers	1.5	1.1-2.1
Road traffic supervisors	1.7	1.1-2.6	Practical nurses	1.4	1.1-1.8
Air traffic controllers	1.7	1.1-2.9			
Bus and tram conductors	1.6	1.1-2.5			

Source: Hammar et al. 1992[7]

European comparisons

It has long been recognised that within the European Union large differences exist in mortality caused by cardiovascular disease. The patterns show a clear west-east gradient. In 2004, the standardised death rate for CVD before age 65 was more than twice as high in the 10 New Member States than in the 15 EU Member States before May 2004 (Table 2.5). This general difference between old and new Member States can be observed for men and women as well as for all age groups (Table 2.2). Countries with relative low rates (under 35 deaths per 100.000) were Austria, France, Malta and Spain. Particularly high were the rates in the three Baltic states, Hungary and Slovakia, with rates between 104 and 170 deaths per 100.000 persons in the working-age population.

This general pattern applies for coronary heart disease as well as for strokes. Thus deaths from ischaemic heart diseases among 0-64 year-olds are twice as high in the New Member States (43 deaths per 100.000), and three or more times higher in the Baltic countries (Estonia: 57, Latvia: 83, Lithuania: 74 deaths per 100.000) than in the EU 15 (19 deaths per 100.000).

Several studies assumed that traditional risk factors such as smoking, diets rich in saturated fats and low in antioxidants, in addition to alcohol largely account for the elevated levels in CVD in the East compared to the West[8] (see also Box 4.2 in Chapter 4).

Table 2.5: Deaths from CVD by sex and country, EU25

	Total	Males	Females
Austria	34.3	51.5	17.8
Belgium	47.3	69.5	25.8
Cyprus	46.5	70.5	23.7
Czech Republic	75.2	114.8	38.2
Denmark	43.3	62.5	24.2
Estonia	125.5	214.8	54.7
Finland	54.8	86.7	23.5
France	30.5	46.7	14.9
Germany	43.7	64.8	22.7
Greece	53.4	83.2	25.0
Hungary	121.5	188.6	64.0
Iceland	36.5	57.3	15.5
Ireland	51.9	78.3	25.2
Italy	37.5	55.9	20.0
Latvia	170.3	274.1	86.5
Lithuania	136.8	228.8	62.1
Luxembourg	43.0	58.9	26.8
Malta	33.5	51.7	16.2
Netherlands	36.6	55.6	22.5
Poland	91.8	144.8	44.3
Portugal	43.3	83.3	25.0
Slovakia	104.1	167.0	48.9
Slovenia	51.6	79.9	23.6
Spain	31.6	49.4	14.6
Sweden	37.3	53.2	21.2
United Kingdom	45.4	66.6	24.9
EU25	49.3	74.8	25.2
EU15	39.5	59.9	20.6
EU10	98.3	155.0	48.2

Source: WHO Europe, European mortality database, June 2006, age-standardised death rate (0-64) per 100.000

With respect to differences in CHD morbidity across Europe, the WHO MONICA Study published some data on coronary event rates and case-fatality rates.[c] Table 2.6 shows that both rates varied markedly between the investigated populations in the EU Member States. The age-standardised annual coronary event rates for men aged 35-64 were highest in the North Karelia region of Finland and the city of Glasgow, United Kingdom (835 and 777 events per 100.000 respectively) and lowest in Catalonia, Spain and Toulouse, France (210 and 233 events per 100.000). The highest rates for women were reported for two populations in the United Kingdom (Glasgow and Belfast with 265 and 188 events per 100.000) and the lowest also for Catalonia/Spain and Toulouse/France (35 and 36 events per 100.000). Overall, coronary case fatality rates were highest in the studied population in Poland in both men and women (83% and 88%) and lowest in Northern Sweden (36% and 34%).[d]

Table 2.6: Coronary event rates, coronary case fatalities, adults aged 35-64, by sex, latest available year, MONICA European Project populations

	Men		Women	
	Coronary event rate	**Coronary case fatality**	**Coronary event rate**	**Coronary case fatality**
MONICA populations (EU Member States)	Events per 100,000	% of fatalities within 28 days	Events per 100,000	% of fatalities within 28 days
Belgium-Charleroi	487	50.1	118	59.3
Belgium-Ghent	346	47.4	77	58.0
Czech Republic	515	52.8	101	53.9
Denmark-Glostrup	517	52.5	140	58.0
Finland-Kuopio Province	718	45.7	124	38.7
Finland-North Karelia	835	48.1	145	41.3
Finland-Turku/Loimaa	549	48.5	94	48.9
France-Lille	298	58.7	64	69.5
France-Strasbourg	292	49.0	64	57.1
France-Toulouse	233	40.0	36	59.8
Germany-Augsburg	286	55.1	63	64.6
Germany-Bremen	361	49.6	81	52.0
Germany-East Germany	370	50.0	78	62.8
Iceland	486	36.9	99	34.1
Italy-Area Brianza	279	40.7	42	52.5
Italy-Friuli	253	45.1	47	49.9
Lithuania-Kaunas	498	54.8	80	53.7

c In the MONICA Study, coronary event rates were defined as a definite or likely myocardial infarction or heart attack and coronary case fatalities as a percentage of persons dying within 28 days of a coronary event. The investigators of the MONICA Study noted that the case fatality is affected by many factors including the accuracy of diagnosis, the severity of the disease and the impact of treatment.

d It is important to note that the examined populations are not necessarily representative of the countries in which they are located. Furthermore the MONICA project data are now 10 years out of date and the patterns of CHD incidence and case fatality across the European populations may have changed since the mid 1990's.

Table 2.6: continued

	Men		Women	
	Coronary event rate	**Coronary case fatality**	**Coronary event rate**	**Coronary case fatality**
MONICA populations (EU Member States)	Events per 100,000	% of fatalities within 28 days	Events per 100,000	% of fatalities within 28 days
Poland-Tarnobrzeg Vovoidship	461	82.7	110	88.4
Poland-Warsaw	586	59.9	153	59.2
Spain-Catalonia	210	36.7	35	45.5
Sweden-Gothenburg	363	43.6	84	45.4
Sweden-Northern Sweden	509	36.1	119	34.4
United Kingdom-Belfast	695	41.0	188	41.5
United Kingdom-Glasgow	777	48.2	265	46.4
Yugoslavia-Novi-Sad	422	51.9	101	49.9

Source: Tunstall-Pedoe H et al (1999)[9]

A further indicator of the differences in CVD morbidity across Europe is the rate of hospital discharges. The distribution by country exhibits the same east-west gradient across Europe as seen in CVD mortality rates. In the New Member States, CVDs were responsible for 3009 hospital discharges per 100,000 in 2004. The corresponding rate for the EU15 countries was 2281.

Time trends

Over the past 15 years, death rates from CVD have been falling in the EU. Despite large differences in the general level and in the timing of the decline, this decreasing trend applies to the 'Old' Member States as well as the New Members. Nevertheless, CVD rates generally remain higher in Central and Eastern Europe compared to western countries, particularly in Latvia and Lithuania.

In the EU25 as a whole, the age-standardised mortality from CVD for those aged under 65 declines continuously after 1990 from 80 deaths per 100.000 to 49 deaths per 100.000 in 2004 – a decrease of almost 39% (Table 2.7). Despite the different levels, the rate of change in the New Member States is nearly the same as in the EU15 countries. Men and women show a similar rate of change in the 'Old' Member States while the decreasing trend in CVD in women is slightly more pronounced in the New Member States.

Table 2.7: Change of age-standardised death rates (SDR) from CVD in the working-age population between 1990 and 2004 in the EU, 2004

	SDR 1990	SDR 2004	Change 1990 - 2004	% of decrease
Total				
EU25	80.1	49.3	-30.8	38.5
EU15	63.8	39.5	-24.3	38.3
EU10	156.5	98.3	-58.2	37.2
Males				
EU25	120.7	74.8	-45.9	38.0
EU15	95.5	59.0	-36.5	38.2
EU10	240.8	155	-85.8	35.6
Females				
EU25	42.4	25.2	-17.2	40.5
EU15	33.8	20.6	-13.2	39.1
EU10	82.7	48.2	-34.5	41.7

Source: WHO/Europe mortality database, June 2006, own calculations

The results of a recent British study, which examined the decline in CHD mortality over a 20-year period (1981-2000), showed that 58% of the decline was attributable to reductions in major risk factors, principally smoking, whereas treatment of individuals, including secondary prevention, explained the remaining 42% of mortality decline.[10]

In summary, despite a substantial reduction in mortality, CVDs remain an important public health problem because they still cause a significant number of premature deaths. Furthermore, some authors predict an increase in the number of people living with cardiovascular diseases because of the ageing of the population and fewer deaths because of successful treatment of cardiovascular patients.

2.2 How many people die or suffer from mental ill health?

In general, the mortality rate for behavioural and mental disorders for people aged under 64 is relatively low in the EU25 compared with other diagnosis groups (3,8 per 100.000, see Table 2.1). Within this ICD-10 diagnosis group, deaths due to psychoactive substance use like alcohol abuse, drug dependence and toxicomania show the highest mortality rates (3.3 per 100,000 persons aged 0-64).

However, mental disorders are connected with increased mortality rates. Firstly, according to the results of a study in Finland, men and women with any mental disorder show an elevated risk of death from natural causes, particularly from CVD, respiratory disease and injuries.[11] Furthermore there is an increased risk of suicide. Although suicide or attempted suicide is not a direct measure of mental ill health, it could be seen as a possible consequence of mental health problems. It was estimated that up to 90% of suicide cases are preceded by a history of mental ill health, particularly by depression.

Currently, in the EU, there are around 58,000 suicides every year – more than the annual deaths from road traffic accidents (50,700). In the 20-44 age group, suicide is responsible for 12% of all deaths and therefore almost as common as transport accidents (13%).[12] With respect to this elevated risk of death from natural causes and suicide, the Finnish study found that, compared to people with no mental disorders, men are 1.6 times and women 1.4 times more at risk.[11]

Notwithstanding the above, it could be stated that mental disorders are usually non-fatal and characterised rather more by their disabling impact. The WHO Global Burden of Disease Study estimated that depressive disorders alone account for almost 15% of 'years lived with disability' as a result of chronic disease in the European subregion A.[b] The functional disability associated with mental disorders is high and often outnumbers that of common chronic physical disorders, such as heart disease or diabetes.

According to a recent review of the 'size and burden of mental disorders in Europe' more than 27% of the adult EU population (aged 18-65) are estimated to experience at least one form of mental disorder during any given year.[13] This 12-month-prevalence means that nearly 83 million people suffer from mental disorders a year.[e] Lifetime incidence data, available from some of the reviewed studies, suggest also that almost every second person in the EU is or has been affected by mental disorders at some point in their lifetime. The European Study of the Epidemiology of Mental Disorders (ESEMeD), which was carried out in six Western European countries[f] show a lower 12-month prevalence (10%) and a lower lifetime prevalence (25%).[14] These variations may be a result of differences in diagnoses in the included countries and age groups and the instruments used to measure the mental health status.[g]

The two most common mental disorders among people aged 18 to 65 in the EU are depression and anxiety. The 12-month prevalence for major depression ranges between 3-10%. The lifetime risk of major depression has been estimated to be even higher at 12-16%. Anxiety disorders together show a 1-year prevalence of 12% of the adult population. The least prevalent mental disorders were eating disorders, illicit drug dependence, obsessive-compulsive disorder and psychotic disorders (Table 2.8).

Considered together, addiction affects 10% of the European population, with nicotine dependence being the most prevalent and illicit drug dependence the least prevalent of substance use disorders.

[e] The authors noted that the prevalence could be regarded as a quite conservative estimate because only some of the many mental disorders were considered

[f] Belgium, France, Germany, Italy, the Netherlands and Spain

[g] With respect to the last factor the ESEMeD investigators argued that lower figures in their study are more accurate estimates for the fact that the estimates were no longer based on experts consensus but on comprehensive empirical evidence. All in all these aspects reflect the limited comparability of morbidity rates from different European epidemiological studies due to the lack of standardisation concerning methods, design, constructs and instruments.

Table 2.8: Estimated number of subjects in the general EU population (age 18-65) affected by mental disorders within the past 12 months

	12-month estimate	
Diagnosis (DSM-IV)	**%***	**million**
Major depression	6.9	18.4
Specific phobias	6.4	18.5
Somatoform disorders	6.3	18.9
Alcohol dependence	2.4	7.2
Social phobia	2.3	6.7
Panic disorder	1.8	5.3
Generalised anxiety disorders (GAD)	1.7	5.9
Agoraphobia	1.3	4.0
Bipolar disorder	0.9	2.4
Psychotic disorder	0.8	3.7
Obsessive-compulsive Disorder (OCD)	0.7	2.7
Illicit substance dependence	0.5	2.0
Eating disorders	0.4	1.2
Any mental disorder	27.4	82.7

Source: Wittchen, H.U., Jacobi, F. (2005)[13], estimations based on 17 studies covered the time period 1990 to 2004

* Median of all available European data; the value for the category 'any mental disorder' was estimated from the German National Health Interview and Examination Survey - Mental Health Supplement, because this was the only study covering all included diagnosis

Chronicity and co-morbidity

Mental and addictive disorders are often long-standing, chronic and recurring illnesses. The Netherlands Mental Health Survey and Incidence Study (NEMESIS) found a median duration of major depressive episodes of three months. Furthermore, around 20% of those with depression had a chronic episode (duration of 24 months or more).[15] A further important characteristic is the co-morbidity with other mental and physical disorders. Co-morbidity is the presence or effect of one or more disorders or diseases in addition to a primary disease or disorder. It has been estimated that over 50% of mental disorders are co-morbid. Therefore diagnoses such as pure depression or pure anxiety disorder are relatively rare.[13]

The ESEMeD study found that 53% of people with a current (12-month) major depression had at least one other mental disorder under study during the previous 12 months, particularly generalised anxiety, panic, agoraphobia and post-traumatic stress disorders. With respect to generalised anxiety disorders and panic disorder, the rates were 69% and 64%, respectively. Compared to this, the co-morbidity rates of alcohol dependence and alcohol abuse are relatively low (28% and 21%).[16]

The figures show that co-morbidity patterns and the chronicity of mental ill health are important issues with respect to the development of adequate prevention strategies.

Gender and age

Despite considerable variation in the methods and designs of the studies concerned, there is clear and consistent evidence of higher 12-month prevalence rates of mental disorders in women compared to men. According to the ESEMeD study, the prevalence of mood and anxiety disorders are at least twice as high in females as in males (Table 2.9).[14] Furthermore, males have consistently higher scores for positive mental health and lower levels of psychological distress than females.[h],[17] Conversely, men were more likely to suffer alcohol and substance abuse disorders. This gender difference is rather constant across countries.

Table 2.9: 12-month prevalence of mental disorders in six European countries (%)

	Total	Men	Women
Any mental disorder	**9.6**	**7.1**	**12**
Any mood disorder	4.2	2.8	5.6
Any anxiety disorder	6.4	3.8	8.7
Any alcohol disorder	1.0	1.7	0.3

Source: ESEMeD 2004[14]

Significant gender differences were found for anxiety co-morbid mood disorder. The 12-month prevalence of co-morbid mood and anxiety disorders is three times higher in females than in males. By contrast, alcohol co-morbid mood disorder was clearly more common among men.[16]

The suicide rates also reveal remarkable differences between males and females: the rates are universally much higher among men compared to women[i]. In the EU25 as a whole, the rate for males was 16 per 100.000 and for females almost 5 per 100.000 in 2004. This ratio varies between countries (see also Table 2.17 below).

Table 2.10 gives a breakdown of prevalence estimates for single diagnosis by age and gender. With the exception of substance use dependence, which was more prevalent among younger people, the prevalence of mental disorders differs only marginally between the age groups. This points to a further important characteristic of mental disorders: while the disabling conditions of CVD are more relevant in later life, mental and behavioural disorders often start at a relatively young age, in particular anxiety and somatoform disorders. This may mean that the people concerned can live for a long time with the effects of mental ill-health. However it also means that, besides the negative effects on private life, mental disorders are often disruptive to professional careers and productivity, because the are often prevalent during years of schooling and training and during peak earning years.

[h] In the 2002 EUROBAROMETER Survey mental distress and positive mental health were assessed by the 5-item mental health index (MHI-5) and the energy and vitality scale (EVI) of the SF-36 Health Survey Questionnaire.

[i] However, it has been observed that rates of suicide attempts are higher among women (Source: Women's health in Europe – Facts and figures across the EU, 2006).

Table 2.10: 12-month prevalence of mental disorders by age and sex (%)

	Women				Men			
	Total	18-34	35-49	50-65	Total	18-34	35-49	50-65
Any mood / affective disorder	12.2	10.7	14.2	11.8	6.1	7.0	6.2	4.8
Any anxiety disorder	16.3	17.0	15.9	16.2	7.8	7.0	8.0	8.4
Somatoform disorders	15.0	14.9	15.2	14.7	7.1	5.7	7.3	8.6
Psychotic disorders	2.5	3.2	1.9	2.4	2.6	2.6	3.2	1.9
Any substance use dependence	1.3	1.7	1.6	0.4	5.6	9.6	3.9	2.9
Any mental disorder	33.2	35.1	33.5	31.0	21.7	23.3	22.0	19.4

Source: German National Health Interview and Examination Survey – Mental Health Supplement, Wittchen, Jacobi (2005)[13]

2

Similar to the age-related pattern of sickness absence due to CVD (Table 2.3), the health insurance data from Austria, Germany and Sweden indicate that the days of illness and number of cases involving mental health disorders increase with age (2.11). For example, in Austria the number of sick leave days per 1000 employees in the age group 51-60 is two and a half times higher and the sick leave duration per case almost two fold higher than in the 21 to 30 age group, although the differences between the age groups in some countries are less pointed.

Employees over 60 are again an exception because they reveal a relatively low rate of sick leave cases. In Austria, they show the lowest probability of becoming ill of all the age sectors. This could be explained by the lower incidence of mental health problems or a selection process, because persons with serious chronic illness have generally left work by the age of 60 at the latest.

Again, with respect to the comparatively low number of cases but long duration of sick leave in Sweden, it should be remembered that only sick leave cases with a duration of at least 14 days are included.

Table 2.11: Sick leave due to mental and behavioural disorders

Age	Sick leave days per 1000 employees			Sick leave cases per 1000 employees			Sick leave duration per case (days)		
	Austria	Germany	Sweden	Austria	Germany	Sweden	Austria	Germany	Sweden
≤ 20	155.09	227.81	243.99	8.59	18.02	0.83	18.3	12.6	90.6
21-30	283.57	710.55	2092.54	12.05	28.97	5.42	23.5	24.5	151.2
31-40	441.07	915.56	4436.41	14.91	29.65	11.03	28.6	30.9	222.5
41-50	572.13	1305.71	5695.59	17.10	37.59	13.84	33.5	34.7	271.3
51-60	716.31	1798.66	5503.46	16.69	41.92	13.10	42.9	42.9	315.5

Source: Health insurance data from Upper Austria 2004, Germany 2004 (BKK-Federation), and Sweden 2005, own calculations
Absolute comparability is limited due to the different national social insurance systems. For Sweden only sick leave days lasting longer than 14 days are included.

The following Table 2.12 shows the association between suicide and intentional self-harm rates and age for both males and females. All in all, the rates tend to increase with age. In the EU25 as a whole, the rates among people aged 60-75 are twice as high as those aged 15-29.

Table 2.12: Suicide and intentional self-harm in the working-age population in the EU25 by age and sex, 2004

		15-29	30-44	45-59	60-75
EU25	Total	8.4	14.1	18.0	16.6
	Male	13.7	22.4	27.7	25.6
	Female	3.0	5.7	8.5	8.8
EU15	Total	7.4	12.7	15.1	15.1
	Male	11.7	19.6	22.2	22.7
	Female	3.0	5.7	8.1	8.5
EU10	Total	12.7	22.2	31.5	25.2
	Male	22.0	38.3	54.4	45.0
	Female	3.1	5.9	10.1	10.8

Source: WHO/Europe, European Mortality database, June 2006, age-standardised death rates (SDR) per 100.000

Socio-economic position and occupation

Recent reviews reported consistent evidence for the negative relationship between socio-economic position and mental ill health. So-called common mental disorders (mostly non-psychotic depression and anxiety) are significantly more frequent in socially disadvantaged populations (measured by education level, employment status, income or material status).[18,19,20] The most consistent associations were with unemployment, poor education and low income or material standard of living. According to the results of the ESEMeD study, unemployed persons have a two fold higher risk of any mental disorder compared to those in paid employment. This risk is particularly high with respect to mood disorders and alcohol disorders. Respondents who were disabled or on illness leave also had a higher risk of mood and anxiety disorders.[14]

Furthermore, first results of the Fourth European Survey on working conditions 2005 indicate that the prevalence of health problems related to mental disorders differs widely between sectors and occupational groups.[21] The highest rates of stress were reported within the 'agriculture and fishing' and 'education and health' sectors. The first one also reveals high levels of overall fatigue and sleeping problems, the last one comparatively high rates of anxiety and irritability (Table 2.13). Workers within the construction sector also show a relatively high rate of overall fatigue, while irritability was more frequent among workers in hotels and restaurants and within the transport and communication sector. By contrast, workers in the financial intermediation, real estate and wholesale and retail trade sectors showed relatively low levels of mental health related problems.

Table 2.13: Workers suffering from work-related stress, overall fatigue, anxiety and irritability by economic sector (%)

Sector	Stress	Overall fatigue	Anxiety	Irritability	Sleeping problems
Agriculture and fishing	28.5	43.3	9.4	9.8	10.7
Manufacturing and mining	23.3	24.5	7.5	10.6	9.2
Electricity, gas and water supply	21.8	21.6	7.0	11.6	6.0
Construction	22.5	28.0	6.2	9.9	4.5
Wholesale and retail trade	16.2	15.3	5.0	7.2	5.3.
Hotels and restaurants	23.3	22.6	7.1	12.6	8.4
Transport and communication	24.2	22.9	6.8	13.6	13.2
Financial intermediation	14.8	13.7	6.1	6.3	6.9
Real estate	18.4	13.8	8.1	8.5	7.4
Public administration and defence	22.7	18.0	11.1	12.6	10.1
Education and health	28.5	23.7	12.7	15.5	12.0

Source: Fourth European Survey on working conditions 2005, EU25

The highest level of stress can be found among agriculture and fishery workers, plant and machine operators, craft-related trades workers and professionals. With the exception of professionals, these workers also report the highest rates of overall fatigue (Table 2.14).
Professionals, agriculture and fishery workers and armed forces reveal comparatively high levels of anxiety, while irritability is most prevalent among plant and machine operators, armed forces and craft and related trades workers.

Table 2.14 Workers suffering from work-related stress, overall fatigue, anxiety and irritability by occupation (%)

Occupation	Stress	Overall fatigue	Anxiety	Irritability	Sleeping problems
Legislators and managers	22.1	20.1	7.8	10.8	9.6
Professionals	25.4	20.0	10.7	12.2	10.1
Technicians	18.7	15.0	7.2	9.1	6.8
Clerks	16.4	13.8	7.0	8.9	6.5
Service and sales worker	19.5	16.7	7.4	10.0	7.1
Agriculture and fishery workers	31.1	51.2	11.1	10.8	12.3
Craft related trades workers	25.3	29.6	6.6	11.1	6.9
Plant and machine operators	28.4	31.5	7.3	14.1	14.1
Elementary occupations	17.3	20.3	6.6	7.9	6.5
Armed forces	22.4	19.9	10.1	13.0	8.3

Source: Fourth European Survey on working conditions 2005, EU25

The different prevalence of depression among occupations is further highlighted by the use of antidepressants. Table 2.15 shows the rate of antidepressant prescriptions by occupation for insured persons in Germany.[22] Unemployed men show the highest rate, followed by social workers, personal and homecare aides and hospital nurses. In women, the use of antidepressants is most frequent among electrical appliance engineers, engineers, other assemblers and the unemployed.

Table 2.15: Insured persons with high prescriptions of antidepressants by occupation, Germany (%)

Men	%	Women	%
All employees	1.8	All employees	3.6
Other assemblers	2.4	Goods packers, dispatch assistants	4.9
Watchpersons	2.4	Technicians	5.0
Doorkeepers, building caretakers	2.4	Telephone switchboard operators	5.1
Garbage collectors	2.5	Assistant hospital nurses	5.2
Mail carriers, sorting clerks	2.5	Mail carriers, sorting clerks	5.3
Safety, health and quality inspectors	2.5	Domestic helpers	5.3
Electrical appliance engineers, engineers for electrical components	2.6	Safety health and quality inspectors	5.7
Hospital nurse	2.7	Cleaners	5.7
House keepers, social pedagogues	2.9	Other assemblers	6.9
Social workers, personal and homecare aides	3.0	Electrical appliance engineers, engineers	7.0
Unemployed	3.3	Unemployed	6.4

Source: Federal Association of Company Health Insurance Funds (BKK) 2005[22]

Socio-economic inequalities are also reflected in suicide rates. Among men, suicide is more frequent in lower educational groups in many EU populations. Among women however, these inequalities are much less pronounced. Correspondingly the possible underlying risk factor for suicide – mental ill health – also tends to be more prevalent in lower socio-economic groups.

International comparisons

In general, it has to be noted that comparisons between different countries are difficult because studies vary in design and methods. However, the findings of the ESEMeD study pointed to clear differences between the six examined countries (Table 2.16). The risk of having any mental disorder is more than twice as high in France as in Italy, with the latter showing relatively low rates for all mental disorders. Furthermore France, Belgium and the Netherlands reveal a significantly increased risk of any mood disorder, while the highest risk for any anxiety disorder was found in France, Germany and the Netherlands.

Table 2.16: 12-month prevalence and relative risk of mood and anxiety disorders in six European countries (percentage, odds ratio*)

	Any mood disorder		Any anxiety disorder		Any mental disorder	
Country	**%**	**Odds ratio**	**%**	**Odds ratio**	**%**	**Odds ratio**
Belgium	6.2	1.48	6.9	1.28	12.0	1.6
France	8.5	2.11	12.0	1.94	18.4	2.23
Germany	3.6	0.94	6.2	1.37	9.1	1.32
Italy	3.8	1.0	5.8	1.0	8.2	1.0
Netherlands	6.9	1.41	8.8	1.55	14.9	1.72
Spain	4.9	1.25	5.9	1.04	9.2	1.2

Source: ESEMeD 2004[14]

* The odds ratio measured the relative risk compared to Italy used as reference. Here the ratio is adjusted for sex, age, living arrangements and urban/rural

Table 2.17 shows also that there are big discrepancies between suicide rates in different EU Member States. In general, the rate for people aged under 64 years in the 10 New Member States is nearly twice as high as in the old fifteen. All in all, the rates range from 2,4 deaths per 100,000 in Greece to 38 deaths per 100,000 in Lithuania. Lithuania is reported to have by far the highest annual male suicide rates in the EU25 with 67 deaths per 100.000 men aged under 64, followed by Hungary, Estonia and Slovenia. Amongst women, the rates are highest in Lithuania, Slovenia and Finland.

Table 2.17: Standardised death rates (0-64) for suicide and self-inflicted injury by sex and country (latest available year)

Country	Total	Males	Females
Austria	12.6	19.3	5.9
Belgium	-	-	-
Cyprus	0.8	1.3	0.3
Czech Republic	12.9	22	3.9
Denmark	10.6	15.4	5.6
Estonia	17.7	32.2	4.7
Finland	18.9	28.5	9.1
France	14.8	21.9	7.8
Germany	9.5	14.7	4.2
Greece	2.4	4	0.9
Hungary	21.7	36.7	7.7
Iceland	11.9	16.2	7.4
Ireland	11.5	18.7	4.3
Italy	5.1	7.8	2.4
Latvia	21.2	38	6.1
Lithuania	38.2	67.4	11.8
Luxembourg	11.8	18.7	4.7
Malta	4.8	5.3	4.3
Netherlands	8.5	11.5	5.3
Poland	15	26.3	4
Portugal	7.5	11.8	3.4
Slovakia	12.3	21.8	3.1
Slovenia	20.2	29.7	10.5
Spain	5.9	9.0	2.8
Sweden	11.4	16.4	6.1
United Kingdom	6.7	10.4	3
EU25	10.4	16.3	4.5
EU15	9.1	13.7	4.4
EU10	16.9	29.2	5.1

Source: WHO Europe, European mortality database, June 2006

Time trends

The WHO commented that the incidence of mental ill health and mental health problems – and their role in causing sickness absenteeism and work disability – is increasing. By the year 2020, depression is expected to be the second most common cause of disability in the developed world.

The available data on sickness absence due to mental disorders and the use of antidepressants – indicators which also give information about the general burden of mental disorders – seem to confirm this general trend:

- In Norway sickness absence with psychiatric diagnoses more then doubled between 1994 and 2000. This increase occurred in both men (from 0.8% to 2.2%) and women (from 1.7% to 4.6%) and in all age groups.[23]
- While psychiatric diagnoses caused 14% of all sickness absence exceeding 60 days in the early 1990s in Sweden, this figure has increased to 23% in 2000.[24]
- Health insurance data from Germany showed an increase of 28% for sick leave days due to mental health problems between 1991 and 2004 while the corresponding data for other important diseases like CVD, musculoskeletal disorders and diseases of the digestive system reveal a continuous decline for the same period.[22]
- The average amount of antidepressants per 1000 inhabitants (as defined by daily doses) in Sweden and Finland increased from nearly 9 and 7 respectively in 1990 to almost 68 and 52 respectively in 2005.[25]

Opposed to these morbidity trends, the rates of suicide for those under 65 years have been falling for both men and women in most countries of the EU 25 over the last twenty years. This general trend is stronger in females than in males (Table 2.18).

Table 2.18: Change of age-standardised death rates (SDR) from suicide and intentional self-harm in the working-age population between 1981 and 2004 in the EU

Total	SDR 1981	SDR 2004	Change 1981 - 2004	% of decrease
EU25	12.2	10.4	-1.8	14.8
EU15	10.6	9.1	-1.5	14.2
EU10	19.6	16.9	-2.7	13.8
Males				
EU25	18.1	16.3	-1.8	9.9
EU15	15.3	13.7	-1.6	10.5
EU10	31.7	29.2	-2.5	7.9
Females				
EU25	6.3	4.5	-1.8	28.6
EU15	5.9	4.4	-1.5	25.4
EU25	8.1	5.1	-3.0	37.0

Source: WHO/Europe mortality database, June 2006, own calculations

In summary, the combination of high prevalence, early onset and chronicity of mental disorders is a major contribution to the total disease burden. Most mental disorders relate to disability, but premature mortality, especially from suicide, add significantly to the overall burden.

2.3 What are the production losses due to CVD and mental ill health?

Production losses due to CVD

Besides the pure healthcare cost, CVDs in those of working age are associated with substantial production losses due to premature death and absence from work. The first study which quantifies the economic burden of CVD in the EU25 estimated the total cost of CVD to be €169 billion a year, of which 62% was due to healthcare (€105 billion), 21% to productivity losses (€ 35 billion), and 17% due to informal care[j] (€ 29 billion) in 2003 (see Table 2.19).[26]

The authors of the study mentioned above reported that, in 2003, 2.18 million working years were lost because of CVD mortality. This was estimated to cost about €24.4 billion. Additionally, 268.5 million working days were lost because of CVD morbidity (i.e. 591 days per 1000 population) at a cost of € 10.8 billion. Thus premature CVD deaths were responsible for nearly two-thirds of the indirect costs and CVD illness, in those of working age, for one-third of these costs.

Table 2.19 reveals also that the production loss due to CVD is mainly caused by coronary heart diseases (CHD) mortality and morbidity. The costs are two and a half times higher than the production loss due to stroke.

Table 2.19: Total costs of CVD, CHD and stroke, 2003, EU25

	CVD € mio.	% of total	CHD € mio.	% of total	Stroke € mio.	% of total
Direct health care costs	104.739	62	22.956	51	21.28	62
Productivity loss due to mortality	24.384	14	11.654	26	4.365	13
Productivity loss due to morbidity	10.768	6	3.544	8	1.694	5
Informal care costs	29.05	17	6.869	15	6.76	20
Total	**168.941**	**100**	**45.023**	**100**	**34.099**	**100**

Source: European cardiovascular disease statistics 2005[1]

The production losses due to CVD mortality and morbidity varied remarkably between EU Member States in 2003 (Table 2.20). As expected, the differences in working years lost due to CVD mortality show a similar pattern to CVD mortality rates across Europe. For men, relatively low rates of working years lost were found in Malta (2.0), France (2.4) and Slovenia (2.4), whereas the three Baltic States, Poland and Hungary reveal relatively high rates.

[j] The cost of informal care refers to the opportunity cost of unpaid care for relatives or friends suffering from the focused illness.

Working days lost due to CVD morbidity were most frequent in Slovakia, the Czech Republic, Poland, Sweden and United Kingdom (each over 1000 days per 1000 population). Comparatively low rates were found in Malta, France and Austria (93, 180 and 200 lost work days respectively per 1000 population).

Table 2.20: Loss of working time due to CVD per 1000 population in the EU, by country, 2003

	Working years lost due to CVD mortality per 1000		Work days lost due to CVD morbidity per 1000
Country	**Men**	**Women**	**total**
Austria	3.6	0.9	200
Belgium	3.1	1.2	266
Cyprus	3.9	1.4	227
Czech. Rep.	4.1	1.1	1113
Denmark	3.6	1.5	338
Estonia	8.9	1.7	467
Finland	4.8	1.4	557
France	2.4	0.8	180
Germany	3.7	1.4	676
Greece	4.0	0.8	222
Hungary	6.9	2.6	766
Ireland	3.4	1.3	424
Italy	2.8	0.7	228
Latvia	11.6	2.3	406
Lithuania	6.1	1.1	601
Luxembourg	2.6	1.2	469
Malta	2.0	0.5	93
Netherlands	3.0	1.5	330
Poland	7.1	1.4	1020
Portugal	3.0	1.3	310
Slovakia	5.0	0.7	1292
Slovenia	2.4	0.5	326
Spain	2.9	0.9	454
Sweden	2.7	1.0	1217
UK	3.3	0.8	1135
Total EU	**3.7**	**1.1**	**591**

Source: Leal et al (2006)[26]

Production losses due to mental ill health

In view of their high prevalence it is not surprising that mental disorders and mental health problems are major contributors to production (and productivity) losses in the workplace. An increasing number of studies show that mental illness is a leading cause of short-term absentee-

ism, long-term sick leave, early retirement or disability pension. With respect to the work-related economic burden, the following findings should be emphasised:

- Mental disorders were associated with a loss of three times more work days than for people with no mental disorder. The highest levels of disability were found in people who suffered from three or more different mental disorders in the same year.[27]
- Mood disorders and anxiety disorders ranked more highly than a number of common physical disorders for work days lost.[27]
- Mental disorders constituted 30% of the total number of early retirements in Sweden and Germany in 2002 and 2003 respectively.

Absences due to mental health problems are different in their nature compared with other health problems, because they have a high risk of recurrence and are characterised by longer average periods of absence, particularly for depression. The average duration of absence due to depression was 95 days, compared with 66 days for other mental problems.[28]

Several authors emphasised that mental disorders not only affect production due to lost employment, absenteeism and early retirement. They could be also responsible for poor performance within the workplace or lost productivity (presenteeism).[29,30] One of the most striking findings of the studies on poor work performance due to mental disorders was that mental disorders had a greater impact on work cutback than on work loss. For example, depression and anxiety were more consistently associated with presenteeism than with absenteeism.[30] Furthermore it was estimated that the cost of reduced performance at work by people with untreated mental health problems such as depression may be five times as great as those for absenteeism.[31]

All in all, this specific disability pattern distinguishes mental disorders from chronic physical conditions. Chronic physical conditions are associated with total disability days, while the predominant effect of psychiatric disorders is partial disability.[32]

With respect to people with more severe mental health problems, a further critical aspect refers to the labour market participation. The MEEHN group found evidence that employment rates for those in this category are very low. For example, in 2002, 22% of a sample population of people with severe mental health problems in Ireland were in employment, 3% were unemployed and the other 75% classed as economically inactive.[28] Furthermore, people with mental health problems can become excluded from the labour market at an early age because several mental disorders often start in adolescence or young adulthood.

Because of the combination of high prevalence, early onset and possibly unfavourable long-term course of the illness, the economic burden associated with mental disorders is immense. The total annual cost for the year 2004 was estimated at €240 billion in Europe (Table 2.21).[k] The majority of these costs (55%) are related to the indirect costs which amounted to €132 billion.[33]

[k] The investigators of the study noted that this is a conservative estimate because not all mental disorders and not all costs were included due to scarce data. Furthermore some based prevalence estimates do not cover the whole population.

These are primarily due to reduced productivity during years of employment and to pre-mature retirement. Amongst mental disorders, the indirect costs of mood disorders (depression and bipolar disorders) was the highest (€ 77 billion), followed by the indirect costs for addictions (alcohol, drugs).

Table 2.21: Cost of mental disorders in Europe* by disease area (€ million)

	Total	Healthcare costs	Direct non-medical costs	Indirect costs
Mental disorders	239542	97221	9336	132985
Mood disorders	105666	28639	–	77027
Addiction	57274	16655	3962	36657
Anxiety disorders	41373	22072	–	19301
Psychotic disorders	35229	29855	5374	–

Source: Andlin-Sobocki et al., 2005[33]

* EU25, Iceland, Norway, Switzerland

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3 Relationship between CVD and mental ill health

The idea that people's minds and hearts are inextricably related has a long cultural tradition and is even embedded in language, as terms like "heartache", "broken heart" or "heart-pounding situation" demonstrate. In past decades, considerable efforts were made to systematically uncover the psychobiological background of these perceptions. An obvious link is the shared work-related risk factors, which are described in detail in chapter 4. The following part of the report is focused on the direct relationship between hearts and minds. It reports on the growing scientific knowledge about the bi-directional relationship between cardiovascular diseases (CVD) and mental ill health, which can be summarised in two main statements:

- Mental ill health is an independent risk factor for cardiovascular disease and mortality. The strength of the association is of similar magnitude to that of standard risk factors such as lack of physical activity or high cholesterol.
- Coronary heart disease can have adverse effects on the mental health of patients. For instance, while in the general population the prevalence of depression ranges from 3% to 10%, it is consistently higher among patients with myocardial infarction, with one-year incidence rates up to 25%.

3

Both areas are of significant interest, not only for basic research on the origins of heart and mental diseases, but also for public health, because an understanding of the underlying processes is crucial for successful evidence-based prevention. Starting with the first pathway, the nature of the relationship between the disease groups is explained in the following paragraphs.

3.1 What is the role of mental ill health in the causation of CVD?

According to scientific studies, psychological phenomena not only impair a person's mental well-being, they can also be considered as important risk factors for cardiovascular diseases. For example, depression, anxiety and certain types of personality are seen to increase CVD.[1] Furthermore, associations have been reported for mental problems like anger, hostility, cynicism, mistrust or chronic life stress. The association can be illustrated with three examples for relevant and frequent mental problems regarding CVD: depression, anxiety and specific personality traits.

Depression: A comprehensive body of research found associations between depression and cardiovascular disease. Particularly, people with depression are at greater risk of developing a heart disease. This can be illustrated by a finding of the INTERHEART study, a large, worldwide project which examined 11.119 patients with a first myocardial infarction and 13.648 healthy control persons from 52 countries in Asia, Europe, the Middle East, Africa, Australia, and North and South America.[2] Compared to the unexposed participants, men and women who reported depression had a 55% higher risk of myocardial infarction, irrespective of the country and ethical group. It also found that depression could negatively influence major cardiovascular risk factors like hypertension and it worsens the prognosis of the disease in already ill persons.

Anxiety: Several studies have suggested that anxiety is associated with an increased risk of coronary heart disease including sudden cardiac death. Panic disorder was shown to commonly co-exist with essential hypertension and the postural tachycardia syndrome.[3] Anxiety disorder was also related to an unfavourable risk factor profile i.e. smoking and hypertension.[4]

Personality traits: Personality traits may predispose an individual to CVD. This hypothesis was first tested for the concept of the "Type A" personality. Type A persons are characterised as highly ambitious and aggressive individuals, while their counterparts, the Type B persons, are calm, laid back and non-aggressive. A number of studies found a higher CVD risk in Type A persons, but several researchers have criticised the concept in the sense that Type A behavioural pattern is not a unitary phenomenon. Therefore, recent research attempted to identify the single components of Type A behaviour which were most strongly and consistently associated with heart diseases. Based on several studies it can be stated that hostility and anger seem to be the most 'toxic' components of the Type A personality in regard to cardiovascular health.

Pathways between mental ill health and CVD

How is it possible that mental processes have a negative impact on the cardiovascular system? To answer this question, it is necessary to look at the underlying biological und psychological mechanisms which might explain their relationship. There are direct and indirect pathways:

1. direct – biological reactions like the release of stress hormones
2. indirect – unhealthy lifestyles like smoking or physical inactivity

Pathway 1 – direct, biological reactions: Conditions of mental ill health may 'radiate' to other systems of the human body. In brief, three biological reactions are important. The first one is the activation of the *autonomic nervous system*, an important 'data highway' which transmits signals from the brain to other subsystems of the body. Mental disorders can confuse this transmission and the heart is especially sensitive to such disturbances. High blood pressure or an accelerated heart rate are expressions of this phenomena, both first steps on the way to a manifest cardiovascular disease. The second domain is the *hormonal system,* which is also crucial for the functioning of the whole organism because it regulates important areas like metabolism or emotions. Mental illness can be the reason for a chronic activation of stress-related parts of the hormone system. A long-term overdose of those hormones is dangerous because it promotes CVD risk factors like high cholesterol, diabetes or atherosclerosis (arterial occlusion). The third domain is *inflammation* which also contributes to the creeping occlusion of arteries. Here, the underlying process is a down-regulation of the immune system (and therefore a weakening of the organisms' defence against inflammation) under certain conditions of mental ill health.

Pathway 2 – indirect, unhealthy lifestyles: Mental problems have an important influence on the health-related lifestyle of a person, such as smoking habits, physical activity, alcohol consumption or adherence to medical treatment. For instance, individuals could try to reduce negative feelings by the sedative and anxiolytic effect of nicotine: a successful smoking cessation is unlikely in depressed and anxious persons. Another example is alcohol consumption as a psychological response to impaired mood. Apart from alcohol or nicotine abuse, it is considered that physical inactivity can be a result of mental ill health and a related loss of motivation. A recent study found that anxiety and depression were significantly associated with physical inactivity of men and women. Some studies have also shown that mental problems can influence health through adverse changes in diet, leading to eating habits which could contribute to CVD. Furthermore, mental problems predict poor adherence to prescribed medical regimens. For instance, the probability of non-compliance with medical treatment recommendations is three times higher in depressed than in non-depressed patients. Non-adherence to medical regimes and an unhealthy lifestyle are obvious health risks and it is therefore likely that these pathways contribute substantially to adverse cardiovascular outcomes in individuals with mental disorders.

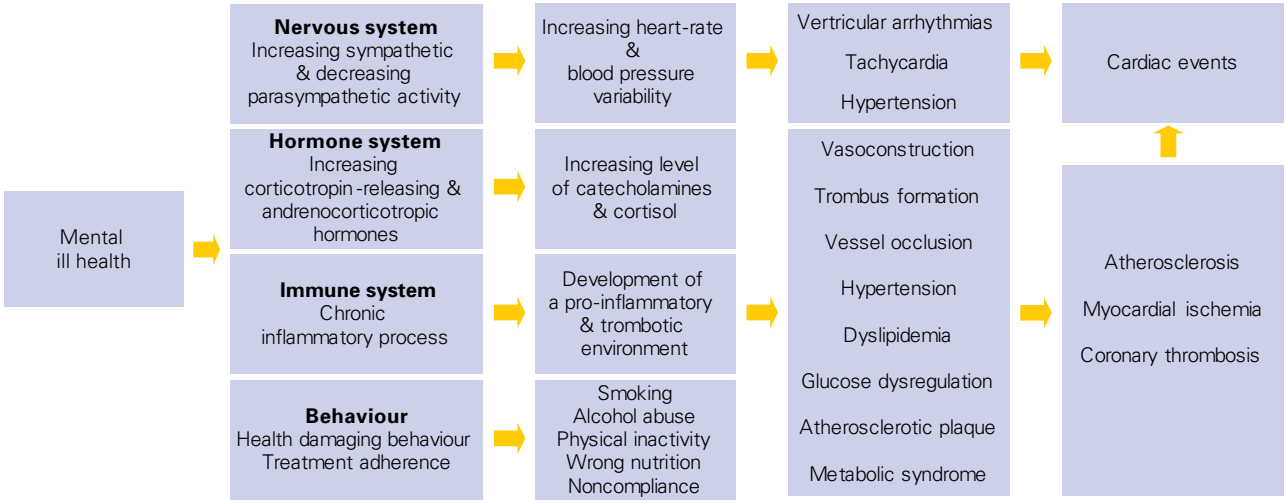

Figure 3.1: Pathways from mental health to cardiac pathophysiology and manifest disease

3.1 What is the role of CVD in the causation of mental ill health?

Thanks to research efforts over the past 20 years, the role of mental ill health as a risk factor for CVD is increasingly better understood. Although less is known about the other way around, the existing evidence gives a more and more consistent picture and it can be stated that cardiovascular diseases may well have an adverse effect on the mental health of patients. From existing evidence, it is estimated that up to 20% of individuals experience a major depressive episode within a few weeks of an acute cardiovascular event, with a further 25% having minor depression or dysthymia. This imposes a heavy burden, not only for the mental well being of patients, but also for the prognosis of their cardiovascular disease. According to meta analyses of empirical studies, cardiac patients with a manifest depression had double the mortality of patients without depression. Apart from depression, cognitive functions are also negatively influenced by cardiovascular disease. Such an effect has been demonstrated for serious cognitive impairments like vascular dementia or Alzheimer's disease. For example, the Washington Heights study found a fivefold increased risk of dementia in the 4 years after an ischaemic stroke.[5]

There are two possible ways to explain the reported associations. The first one is a psychological reaction to the manifestation of cardiovascular disease. Patients may feel depressed or develop neurotic syndromes, because the disease forces them to restrict leisure or work activities and they may live in fear of the next painful attack or even death. But is has to be mentioned that the psychological response to the disease is variable and depends on personal characteristics, the social environment and the nature of the underlying cardiovascular disease. The second way comprises biological changes caused by CVD. Some of them may affect neural structures

involved in the regulation of emotion and cognition. One example is a chronic oxygen deficit in the brain, which can emerge as a consequence of atherosclerosis. This deficit could then precipitate degenerative processes in the brain (for example Alzheimer's disease).

3.2 What does this mean for prevention?

The relationship between mental ill health and CVD is complex and even though there is substantial evidence for a direct and bi-directional association, studies so far are not conclusive enough to explain all possible pathways. Nonetheless, the existing knowledge about the multiple interrelations between mental ill health and cardiovascular disease shed light on the mechanisms involved in the onset, development and prognosis of such disorders. In the context of working life, the main message of the scientific findings presented here is that an improvement of working conditions could have multiple benefits because the prevention of mental diseases might have an additional positive effect on cardiovascular risk and vice versa.

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4 The impact of work on CVD and mental ill health

The link between working conditions and adverse affects on physical and mental health has been well examined in a large number of empirical studies. The research has shown that working conditions could be responsible for the development and worsening of CVD and mental ill health. For example, a Danish study found that 16% of CVD cases among men and 22% among women are caused by work-related risk factors.[1] A follow-up of the Danish population on hospital admissions found that 31% of ischemic heart disease among women, and 24% among men, was attributable to work-related factors. After standardising for social class these proportions remained high: 22% for women, 17% for men.[2]

The following chapter focuses on the most important work-related risk factors for both diseases, in particular on the relationship with psychosocial work-related stress.

This chapter also addresses the impact of individual conditions (e.g. negative personality, demanding social or material situations) and individual lifestyle factors (e.g. smoking, poor diet, physical inactivity) on CVD and mental ill health.

Why focus on psychosocial stress at work ?

There has been a recent shift in occupational health concerns from physical hazards in the workplace to the impact of the psychosocial work environment.[3] A growing body of evidence shows that modern working life is physically safer but more and more mentally stressful. As a consequence, research on work-related risk factors – including mental health issues – now commonly focuses on these psychosocial stressors.[a]

4

Work stress is often used as an 'umbrella concept', covering so many different hazards that it is often difficult to find a single cause. Specific stressors include work demands (particularly workload or time pressure), emotional demands, lack of control, a perceived imbalance between effort and reward and lack of support from colleagues and management. In addition, current research also highlights interpersonal (e.g. bullying, harassment) and organisational (managerial style or issues of leadership) issues as well as factors which may affect workers' job security.

The most widely used measures of work stress are the demand/control model[4] and the effort-reward imbalance model.[5] The first model combines perceptions of job demands and job control. Job demand refers to work pace, work overload and conflicts of tasks, while job control deals with the influence employees have over the work they do. The model suggests that high demand and low control ('job strain') predicts the risk of adverse health effects. Insufficient social support at work from colleagues and supervisors increases these risks. The effort-reward imbalance model shows that a combination of high effort and low gain (monetary rewards, career opportunities, job security) is particularly stressful.

a Besides stress, there are other work-related risk factors for CVD and mental ill health such as noise, chemicals or temperature extremes. According to the fourth European Working Condition Survey, exposure to these physical risk factors is more common among men and among blue-collar workers (e.g. agriculture, construction and manufacturing). Workers in the New Member States report higher rates than workers in the EU15.[44]

BOX 4.1: What is work-related psychosocial stress?

Job stress is the result of a mismatch between what is required of workers and their capabilities, resources or needs.

Sources/demands

Stress occurs in many different circumstances, but is particularly strong when a person's ability to control the demands is threatened. Insecurity about successful performance and fear of negative consequences resulting from performance failure can evoke powerful negative emotions of anxiety, anger and irritation. Psychosocial hazards such as work design, organization and management, high job demands and low job control, together with issues such as harassment and violence at work, can cause work-related stress. Physical hazards, such as noise and temperature, can also cause – or add to – work-related stress.

Mediators

The stressful experience is intensified if no help is available from colleagues or supervisors. Social isolation and lack of cooperation increases the risk of prolonged stress at work. Conversely, work tasks with a high degree of personal control and skill variety and a work environment with supportive social relationships, make a positive contribution to worker's wellbeing and health.

When work demands exceed the employee's abilities and knowledge, but he or she is able to perceive this as an opportunity, then it becomes a learning and development situation.

Effects

Work-related stress is not a disease, but if it is intense and goes on for some time, it can lead to mental and physical ill health. Although the process of evaluating demands and resources (appraisal) is psychological, the effects of stress can also be detrimental to physical and social health, innovation and productivity.

With respect to mental ill health and CVD, it is important to note that short-term responses to stress include physiological (e.g., elevated blood pressure), psychological (e.g., irritability, tenseness) and behavioural (e.g., smoking or alcohol consumption as a form of coping) effects.

4.1 Work-related stress – a major risk factor for CVD and mental ill health

Work stress plays an important role with regard to the causation of CVD and mental ill health. The following sub-chapters address the strength of the association between different aspects of a stressful work environment and both disease groups and summarise the main results of recent research.

4.1.1 Work stress and CVD

The exposure to continuous work stress is associated with different CVD outcomes (Fig. 4.1), particularly for men. Firstly, work stress can cause acute myocardial infarction. For example, the recently published INTERHEART study found a doubling of risk for myocardial infarction from permanent job stress for men. This means that the effect of work stress is as significant as high blood pressure and obesity in causing myocardial infarction.[6] In addition, stress is related to the development of hypertension, an important risk factor for atherosclerosis, coronary heart disease and stroke. There is also a link to the development of angina pectoris which is a common manifestation of coronary artery disease and often occurs in advance of a heart attack.

Recent research also found links between work stress and the co-occurrence of a) other disorders (e.g. diabetes mellitus) and b) potentially preventable unhealthy lifestyle behaviour (e.g. smoking, alcohol consumption, unhealthy diet rich in saturated fat and calories, physical inactivity) which both increase the risk for CVD. These associations are important in understanding the indirect mechanisms leading from work stress to the development of CVD.

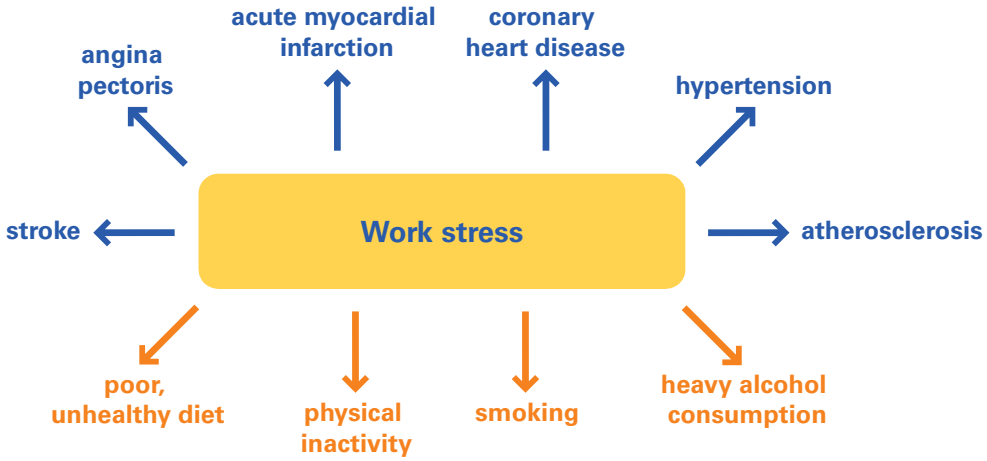


Figure 4.1: Associations between work stress and different cardiovascular diseases and CVD-related lifestyle behaviours

Numerous studies examine the strength of the associations between single aspects of work stress and the development of CVD outcomes or the occurrence of lifestyle risk factors. The probability of dying from or suffering from CVD is 20% to four-fold higher when male workers are exposed to high demands and low control over working tasks compared to non-exposed workers. In women, job strain increases the risk of CVD from 20% to 60%.[7] Low levels of social support at work increases these risks. These associations feed into increased sickness absence and early retirement rates. For example, female workers who experience a high effort-reward imbalance have a 90% increased risk of early retirement due to psychiatric disorder. Male workers show an increased risk of 50%.[8] All in all it was estimated that 6% of all CVD cases among men and 14% in women are due to job strain.[9]

The effort-reward imbalance or the exposure to organisational injustice[b] also contributes to coronary heart disease or CVD mortality. Workers exposed to high effort-reward imbalance also run a two-and-a-half fold higher risk of CVD mortality and morbidity than workers who scored low in this category. A sense of organisational injustice increases the risk for CVD by 60%.[10]

Several studies have found at least partial support for the association between work stress and heavy alcohol consumption or alcohol dependence, particularly among men. Work stress also increases the risk of weight gain among workers, particularly among those already overweight or obese.[11] Overall, it was found that women and men with high effort-reward imbalance were 40% more likely to have, simultaneously, three or more lifestyle risk factors compared with their counterparts with low effort-reward-imbalance.[12]

Further associations between work stress and different CVD outcomes or CVD-related risk behaviour were found in the following working conditions:

- Working very long hours is linked to diabetes, hypertension and CVD. For example, working more than 11 hours a day was found to triple the risk for myocardial infarction.[13] Moving to longer working hours can have negative impacts on risk-taking behaviours, such as smoking, alcohol consumption and poor diet.[14]
- Shift and night work increase the risk of CVD by at least 40% compared to day-work.[15] It was estimated that shift work is responsible for 7% of all CVD cases.[9]
- High job demands are associated with high blood pressure and high levels of cholesterol in men, as well as with hypertension in women.[16]
- The exposure to bullying is also relevant: The risk of CVD is twice as high among bullied workers compared to those without this experience.[17]
- Organisational downsizing is associated with a doubled risk of CVD deaths.[18] In women, the loss of job security is associated with higher levels of blood pressure.[19]

[b] Organisational justice includes two components. Procedural justice refers to the perceived fairness and participation possibilities with respect to decision-making procedures. Relational justice addresses the treatment of workers with fairness, politeness, and consideration by supervisors or bosses.

Box 4.2: Individual risk factors for CVD

Diet, BMI & Obesity: Obesity (BMI>30) is a risk factor for many serious chronic diseases. Overall, in the 25-34 age group in all European countries, a larger proportion of men than women are overweight, which reverses as people get older. [20,21,22] At least nine European countries have male obesity rates above 20% with Greece and Cyprus reaching 27%.[23] If prevalence continues to increase at the same rate as in the 1990s, about 150 million adults in the region may be obese by 2010.[24]

Physical activity: A sedentary lifestyle resulting from low activity levels both at work and during leisure time is associated with a significant increase in CVD. In general, three points are of great concern: 1) Southern countries of the EU15 have lower levels of physical activity than those in the North and West,[25] 2) Only about one third of schoolchildren appear to be following recognised physical activity guidelines[22,25] and 3) Lower socio-economic groups report that the physical activity they do undertake is related to their work.[26]

Diabetes Mellitus: Diabetes mellitus is defined as a group of metabolic diseases whose common feature is an elevated blood-glucose level (hyperglycaemia). Chronic hyperglycaemia is associated with the long-term consequences of diabetes that include damage and dysfunction of the cardiovascular system, eyes, kidneys and nerves. Since 1991, the prevalence of diagnosed diabetes has more than doubled in men and increased by 80% in women.[27,28]

Blood pressure: The prevalence of high systolic blood pressure levels varies markedly across Europe: The Eastern European countries demonstrate inconsistent patterns for raised blood pressure,[29,30,31] while in most high income countries it is currently decreasing.

Blood cholesterol: High levels of cholesterol are associated with an increased risk of stroke, ischaemic heart disease and other vascular diseases.[20] Globally, 4.4 million deaths and 40.4 million Disability Adjusted Life Years (DALYs) were estimated to be due to non-optimal cholesterol levels.[32]

Smoking is one of the most well documented risk factors for CVD.[33] The prevalence of smoking in EU countries varies widely, ranging from 16% in Sweden to 38% in Greece.[34] Socio-economic inequalities in smoking statistics are substantial in most of the EU countries (especially in the north) with higher smoking rates among lower socio-economic groups and the unemployed.[35,36]

Alcohol consumption: The EU is the heaviest drinking region in the world in spite of great national variations. It is estimated that only 15% of the adult European population do not drink alcohol at all. Alcohol consumption has often been reported to be greater in higher socio-economic groups, while alcoholism itself seems to be more common in lower socio-economic groups.[37,38]

4.1.2 Work stress and mental ill health

Job stress and its single components have been linked to increased risk for a wide range of mental health outcomes. These include symptomatic or controversial health problems (e.g. mental exhaustion, irritability, depressive feelings, burn-out syndrome) as well as well defined mental disorders like major depression, anxiety or alcohol dependence (Fig. 4.2).

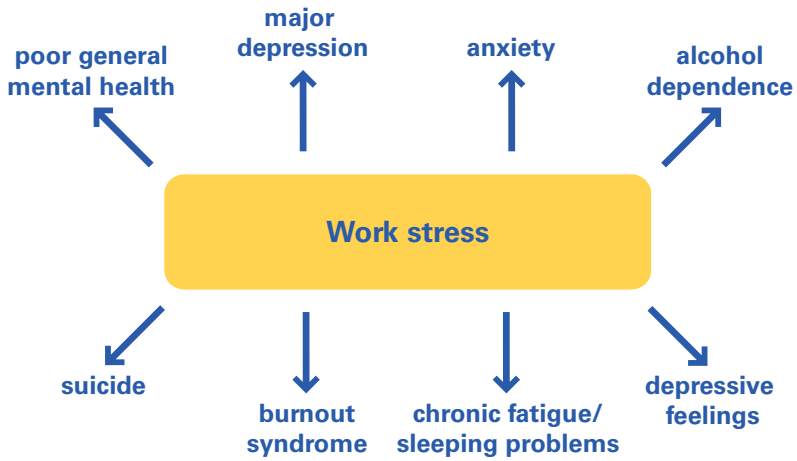


Figure 4.2: Associations between work stress and mental ill health

The risk of a common mental disorder is increased (by 80%) among workers who experience high job strain or high effort-reward imbalance compared to workers with low stress levels. In addition, poor social support or poor interpersonal relationships at work are also associated with a modest increased risk (30%).[39] The risk of psychiatric morbidity is twice as high among white-collar workers with interpersonal conflicts at work compared to those without conflicts.[40]

The associations between work stress and mental ill health are stronger in men than in women and are related to increased sickness absence and early retirement rates. For example, in men high effort-reward imbalance increases the risk of early retirement due to psychiatric disorders by 50%. Female workers show an increased risk of 30%.[8] Altogether it has been estimated that an average of 19% of all depression cases among women and of 12% among men are due to job strain.[41]

Against a background of increasing job insecurity and unemployment, the following is also significant: Workers who experience a loss of job security or who suffer from chronic job insecurity show a clearly increased risk of minor psychiatric morbidity compared to those in secure employment.[19,39] An Australian study estimated that workers who reported high job strain in combination with high job insecurity (so-called job pressure) are fourteen times more likely to experience depression than those who have active, secure jobs.[41]

According to the results of the ESEMeD study, unemployed persons have a doubled risk of any mental disorder compared to those in paid employment.[42] With respect to single diagnoses it was found that unemployment increases the risk of depressive disorder by 80%. The probability of suffering from anxiety disorders or alcohol use disorders is 2½ -fold higher when workers are affected by unemployment.[43]

Further associations between work stress and mental health problems or mental illness were found in the following working conditions:

- There is a strong association between workplace bullying and subsequent depression. Bullied workers run a fourfold risk of depression compared to non-bullied employees.[17] Furthermore, the European Working Condition Survey 2005 found that those affected by violence, bullying and harassment at work tend to report higher levels of anxiety and irritability.[44]
- Work stress can be responsible for sleeping problems. These problems are especially associated with depression and burn-out syndrome. It was found that workers exposed to work stress – measured by the exposure to high job strain or high effort-reward imbalance – are four times as likely to suffer sleep disturbance. Work shifts and a long working week were also identified as risk factors for serious sleeping problems.[45]
- As previously mentioned, there is also an association between work stress and heavy alcohol consumption or alcohol dependence, particularly among men.[11] A Finnish study found that male workers experiencing interpersonal conflicts reported heavy alcohol consumption and an increased consumption of tobacco and cigarettes.

BOX 4.3: Individual risk factors for mental ill health

There are many non work-related risk factors for mental ill health. Here the focus will be on risk factors most amenable to intervention or prevention measures.

Low socio-economic status is one of the main risk factors for mental illness.[46-54] Children are now the largest single group living in poverty in many countries. There has also been an increase in poverty among females, with very high rates of poverty among single mothers in all OECD countries, as well as in the USA. Poverty and low socio-economic status are closely linked with mental health problems of children. The prevalence of depressive symptoms in low-income, single mothers has been found to be high, ranging from 49% to 75%.[48]

There has been an increase in income inequality in many industrial countries during the past two decades. Several studies suggest that the relative distribution of income within a society is an important determinant of health. Epidemiological studies have shown that poverty and other social inequalities are strongly associated with mental illness through a variety of mechanisms, including poor nutrition, unhygienic living conditions, inadequate access to health care, lack of education and employment opportunities and debt. Mental illness in turn contributes to and results in poverty, – a vicious circle. Therefore a reduction in state health and social expenditure may inadvertently increase the burden of untreated mental illness and eventually cost much more money than it saves.[51]

Lack of social support and social contacts are clearly risk factors for mental illness.[52,55-57] Social support has emerged as a critical buffer for stressful life events and a major predictor of emotional and physical well-being. Research has shown that women of lower socio-economic status have fewer resources to cope with stressful life events, with low socio-economic status often going hand-in-hand with less social support.

One of the roots of low socio-economic status is lack of education, which means a low level of education becomes a risk factor for mental health.[58,59,60] Homelessness and poor housing conditions are also risk factors.[53,54,61] Better living conditions and medical advances on the other hand mean that people are living longer and this will result in the number of people with dementia rising rapidly over coming decades.[51,62] Marital status is well-recognised as a key demographic variable associated with mental health.[63,64,65] It has been shown that first partnerships which last are associated with good mental health.

A number of studies show that exposure to violence as a result of war, acts of terrorism or community violence, is a risk factor for mental illness.[66-69] Childhood maltreatment (physical neglect, physical abuse, sexual abuse), mental, physical and sexual abuse of women and bullying are also well recognised risk factors. [70-75]

4.2 Work-related stress is unequally distributed

This chapter focuses on areas with a high prevalence of stress-related risk factors for CVD and mental illness based on the unequal distribution of work stress across gender and age groups, occupations and economic sectors, employment status and across EU Member States.[c]

How many male and female workers are affected by work stress?

High pressure, intensive work is relatively widespread among the European workforce. In 2005, almost two-thirds of all workers in the EU25 reported working with tight deadlines for at least one quarter of their time and a similar proportion reported having to work 'at very high speed' – more so with men than women (Table 4.3). About 40% of all workers are additionally exposed to monotonous or repetitive tasks.

A lack of job control and low social support is also common: more than one-third of workers have no control over the order of tasks, slightly lower proportions report no control over work methods or pace. One-third of all workers report low social support from colleagues.

16% of all workers report long working days[d], particularly male workers (22% compared to 9% for women). This result reflects the fact that women are more involved in part-time work (32% vs. 7% in men). Shift work affects 17% of the work force.[e] The Fourth Working Condition Survey found that shift workers were most likely to have no control over tasks, methods and rate of their work. Furthermore, there is a clear relationship between shift work and the perceived difficulty of balancing work and other commitments.[44]

Comparatively small numbers of workers are exposed to bullying and/or harassment (5%), age discrimination (3%) and unwanted sexual attention (2%). The last one affects three times as many female workers as male workers, particularly young women under 30 years of age.
More than every second male worker believes that he is not well paid for the work he does and almost two-thirds consider that their job does not offer good prospects for career advancement. Both opinions are a little more frequent among women. 13% of all workers feared that they might lose their jobs in the next six months.

[c] Main source of this chapter is the fourth European Working Conditions Survey 2005 which was conducted by the European Foundation for the Improvement of Living and Working Conditions.

[d] This means the proportion of employees working more than 10 hours a day more than five times per month

[e] According to the Fourth European Survey of Working conditions variable work shifts include 1) daily split shifts (with a break of at least 4 hours in between) 2) permanent shifts (morning, afternoon or night) and 3) alternating/rotating shifts

Table 4.3: Working conditions in the EU25, by gender

	Percent		
	Total	**Men**	**Women**
Work organisation and content of work			
Working at very high speed[1]	60	63	56
Working to tight deadlines[1]	62	68	54
Short repetitive tasks < 10 min	39	37	41
Monotonous tasks	43	42	44
No job control			
No control over task order	36	37	36
No control over work methods	33	33	33
No control over speed of work	31	31	31
Low social support			
Low assistance from colleagues[2]	33	33	33
Low assistance from supervisors[2]	44	46	42
Working time			
Long working days[3]	16	22	9
Work shifts	17	17	17
Harassment and discrimination			
Bullying, harassment	5	4	6
Job insecurity, satisfaction with earnings and possibilities for career advancement			
Might lose my job in the next six months[4]	13	13	13
Not well paid for the work[5]	56	53	59
Job don't offer good prospects of career advancement[5]	68	66	71

Source: Fourth European Survey on Working Conditions 2005, EU25

[1] 1/4 of time or more, [2] "almost never", "rarely" or "sometimes", [3] 10 hrs a day or more at least 5 times per month, [4] "agree", "strongly agree", [5] "strongly disagree", "disagree" or "neither agree nor disagree" with the positive answer

Main variations by age

Young workers under the age of 25 are more exposed to several stress-related working conditions compared with the older generation, e.g. the performance of high speed work (67%) monotonous tasks (52%) and work shifts (20%). In addition, young workers claim most often that they have no control over task order, work methods or the speed of work. On the other hand, they say they experience more support from colleagues or supervisors.

Sectoral and occupational distribution

The sectors most affected by working at very high speed and to tight deadlines are construction, hotels and restaurants and transport and communications (all with more than 70% in at least one of the two categories). In terms of occupations, it is craft-related trades workers and plant and machine operators who most often report a high work intensity. Working in these sectors is also more likely to be associated with the performance of short repetitive tasks and monotonous work, especially in manufacturing and agriculture (Table 4.4 and 4.5).

A lack of job control is more common among workers in manufacturing and mining, hotels and restaurants and transport and communication. By occupations, the lowest control over task order, work methods and speed of work can be found among plant and machine operators, in elementary occupations and in armed forces, while legislators and managers and agricultural and fishery workers report the highest levels of control. Support from colleagues and supervisors is less common for elementary occupations as well as for agricultural workers. The low social support declared by agriculture workers is certainly linked to the high rate of self-employment solo workers with no employees in this sector.

Workers in agriculture and fishing as well as in hotels and restaurants reveal a relatively high rate of long working days. By occupation, it is agriculture workers and legislators and managers who most often work ten hours a day. Shift work is most common among employees in hotels and restaurants, transport and communication and manufacturing (in each case, around every fourth employee is a shift worker). In the health sector, about one third of employees works shifts.

Workers in hotels and restaurants and construction are most worried that they might lose their jobs in the next six months. By occupation, plant and machine operators and elementary occupation workers fear for their employment.

Workers in education, health, hotels and restaurants report higher-than-average levels of bullying and harassment.

Table 4.4: Distribution of working conditions, by economic sector (%)

Working condition / Sector	Working at very high speed[1]	Working at tight deadlines[1]	Repetitive tasks	Monotonous task	No control over task order	No control over work methods	No control over speed	Low support from colleagues[2]	Low support from supervisors[2]	Mean weekly working hours	Long working days[3]	Work shifts	Bullying, harassment	Might lose my job[4]	Not well paid for the work[5]	No good prospects for career advancement[5]
Agriculture and fishing	62	66	36	58	24	23	18	42	52	48	38	5	4	11	76	90
Manufacturing and mining	65	69	42	49	48	42	39	33	45	40	12	25	4	16	57	72
Electricity, gas and water supply	54	63	42	43	27	23	15	31	39	40	13	16	6	14	48	53
Construction	73	77	49	50	42	37	35	28	45	42	16	5	3	18	47	67
Wholesale and retail trade	60	53	42	42	38	34	34	34	44	38	14	16	6	15	58	73
Hotels and restaurants	76	67	50	49	44	42	43	31	47	39	28	30	9	20	61	75
Transport and communication	64	73	34	46	45	44	37	38	47	40	25	24	7	14	56	70
Financial intermediation	55	67	32	36	21	28	23	25	32	37	13	6	2	8	35	44
Real estate	55	70	30	37	26	24	20	35	43	37	19	9	3	15	47	54
Public administration and defence	51	57	31	43	37	32	29	23	36	38	15	18	5	7	51	58
Education and health	51	51	35	34	32	23	27	27	41	32	12	21	8	8	61	69

Source: Fourth European Survey on Working Conditions 2005, EU25, own calculations

[1] 1/4 of time or more, [2] "almost never", "rarely" or "sometimes", [3] 10 hrs a day or more at least 5 times per month, [4] "agree", "strongly agree", [5] "strongly disagree", "disagree" or "neither agree nor disagree" with the positive answer

Table 4.5: Distribution of working conditions, by occupation (%)

Occupation / Working condition	Working at very high speed[1]	Working at tight deadlines[1]	Repetitive tasks	Monotonous task	No control over task order	No control over work methods	No control over speed	Low support from colleagues[2]	Low support from supervisors[2]	Mean weekly working hours	Long working days[3]	Work shifts	Bullying, harassment	Might lose my job[4]	Not well paid for the work[5]	No good prospects for career advancement[5]
Legislators and managers	60	66	29	35	15	13	18	36	52	46	37	9	4	6	44	58
Professionals	51	60	27	28	24	17	19	30	40	36	16	12	6	9	49	53
Technicians	58	64	35	32	29	26	26	26	36	37	12	14	5	11	51	60
Clerks	58	62	39	45	36	36	32	29	37	35	5	13	6	15	54	66
Service and sales worker	61	50	43	42	38	38	37	35	44	35	16	26	6	14	59	69
Agriculture and fishery workers	62	70	38	61	17	12	15	46	61	50	46	3	3	7	81	92
Craft related trades workers	72	77	48	50	50	39	36	31	46	41	13	17	4	16	56	74
Plant and machine operators	67	68	46	59	65	61	51	37	47	42	20	35	4	19	64	86
Elementary occupations	54	49	45	56	45	42	38	42	53	34	11	19	6	19	64	85
Armed forces	59	52	27	37	45	41	39	22	46	42	27	18	1	8	49	43

Source: Fourth European Survey on Working Conditions 2005, EU25, own calculations

[1] 1/4 of time or more, [2] "almost never", "rarely" or "sometimes", [3] 10 hrs a day or more at least 5 times per month, [4] "agree", "strongly agree", [5] "strongly disagree", "disagree" or "neither agree nor disagree" with the positive answer

Country differences

High work intensity, indicated by responses to questions about 'working at very high speed' and 'working to tight deadlines', is more common across the EU15 countries than in the New Member States, while monotonous tasks and work shifts are more widespread in reverse. The highest rates for shift work were found in Slovenia (30%) and Slovakia (28%), the lowest in Denmark (9%) and Portugal (10%). Support from colleagues and assistance from superiors is more common among workers in the New Member States than in the 'Old' Member States (Table 4.6).

The Fourth European Working Condition Survey (EWCS) found that respondents from Cyprus, the Czech republic, Germany and Greece fit most closely the category of a high strain work organisation while the Nordic countries most closely approach the 'active' work organisation with high demands and high control over work process.[44]

Every fourth worker in the New Member States reports that he might lose his job in the next six months compared to every tenth in the EU15. With regard to exposure to bullying and/or harassment, the EWCS found wide variations between countries, ranging from 17% in Finland and 12% in the Netherlands to 3% in Cyprus, Estonia and Hungary and 2% in Italy.[f]

Table 4.6: Working conditions – main differences between 'Old' and New EU Member States (%)

	EU25	EU15	EU10
Working at very high speed[1]	60	61	52
Working to tight deadlines[1]	62	62	59
Repetitive tasks	39	40	30
Monotonous work	43	42	49
Low support from colleagues[2]	33	35	23
Low support from superiors / boss[2]	44	46	34
Long working days[3]	16	15	20
Work shifts	17	16	23
Might lose my job in the next six months[4]	13	11	25
Not well paid for the work[5]	56	53	71
Job don't offer good prospects of career advancement[5]	68.4	67.0	76.1

Source: Fourth European Survey on working conditions 2005

[1] 1/4 of time or more, [2] "almost never", "rarely" or "sometimes", [3] 10 hrs a day or more at least 5 times per month, [4] "agree", "strongly agree", [5] "strongly disagree", "disagree" or "neither agree nor disagree" with the positive answer

[f] The European Foundation points out that the observed country differences may reflect cultural awareness of the issue and willingness to report as much as variations in prevalence

4.3 Work-related stress is increasing in a changing world of work

The nature of work is changing rapidly. Today's world of work is unrecognisable from the workplace of only a few years ago. Employers and employees have embraced revolutionary communications advances, the introduction of flexible working arrangements, greater diversity in the workplace and significant restructuring of working arrangements through outsourcing and off-shoring. General trends include changing work patterns (new technology, increase of the service sector) as well as changes in employment patterns (downsizing, outsourcing, flexibility and mobility). In response to globalisation and economic pressures companies have looked for greater flexibility to respond rapidly to peak production demands and seasonal variations whilst controlling labour costs. Their approach has included introducing new working practices such as 'just-in-time' production and casual labour such as temporary work and fixed-term contracts.[76]

For many people, change provides welcome opportunities for more rewarding and satisfying work and a better life. For others it is worrisome, closing off rather than opening up chances for improved living and working conditions.[77]

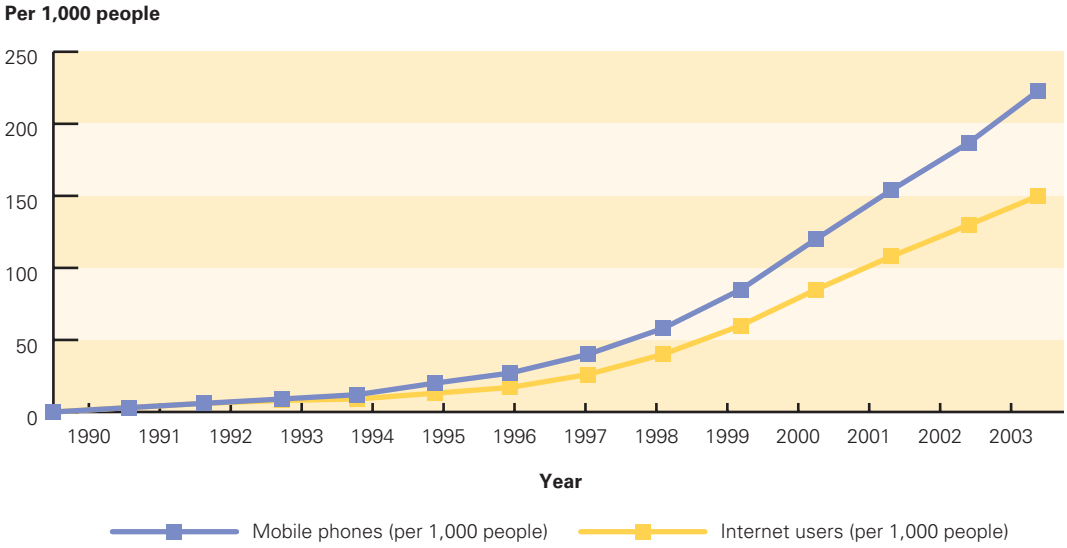
All these issues can have implications for workplaces themselves and also for workplace health promotion (WHP) and the occupational safety and health (OSH) system. They can affect the type and nature of risks present in the workplace and they influence how risks need to be managed. For example, in many work areas, job demands have increased, including an intensification of work and requirements on workers to be more flexible and rapidly learn to carry out new tasks. These conditions can contribute to mental and cardiovascular health problems, although traditional risks also remain on the agenda. Changes in management structures and responsibilities will affect the management of occupational safety and health. The use of subcontractors, for example, also complicates the process, especially where several different organisations are working on one site. These changes can also affect the approaches OSH authorities need to take to effectively support health and safety improvements in organisations.[76]

Detecting a pattern of change in key elements of the terms and conditions for work is, however, particularly difficult as the main feature revealed by labour market researchers is increasing diversity. Underlying the observed changes are the twin pressures for flexibility and security and the search for new ways of balancing them. This situation is more complex for workers from the new member Eastern European countries. In many of these countries the traditional occupational health and safety hazards still constitute the main challenge to OSH. But, simultaneously, new ways of working are bringing their own problems for employees. One of the most pressing problems is that the majority of employment relationships are informal and insecure, hampering the transition to more complex and productive systems for organising productive work.

4.3.1 Structural changes

Information and communication technologies (ICT)

The process of innovation and profusion of new information and communication technologies (ICTs) constitutes a radical transformation of the means of production, distribution and exchange (see Fig. 4.3). It has already profoundly affected international trade and investment, the movement of capital and labour and work processes and products and has accelerated the shift towards services and their outsourcing internationally.[77]



Source: World Bank, World Development Indicators 2005

Figure 4.3: Rapid growth of ICTs since the 1990s: Internet and mobile phone penetration

The direct employment effects of ICTs are, on the one hand, new jobs created in producing and delivering new products and services and on the other, the loss of jobs in redundant technologies or in companies that fail to keep up with competitors' rate of innovation.[78] Indirect effects include the impact of technological change on productivity, skill requirements and associated organisational adaptation.[79] The process of structural change driven by competition and new technologies is often described as "creative destruction".[80]

The introduction of new forms of technology can be a stressful experience for some workers at an individual level. The pressure of information-intensive work and the learning process may be particularly stressful for some older workers. Nevertheless, 'information overload' and psychological stress are not restricted to older employees or those with low training levels; ICT experts have also shown an elevated risk of psychological exhaustion.[81]

Growth of the service sector

A growing proportion of workers is employed in the service sector. In contrast to industrial employment, services went up as a share of global employment from 66 per cent in 1995 to 71 per cent in 2005 in developed countries. Services include wholesale and retail trade; hotels and restaurants; transport; storage and communications; finance; property and business activities including research and development; public administration; education; health and social work; community and personal services and domestic service.

Many of these jobs involve contact with members of the public – clients, customers, patients and so forth – which can lead to risks of stress and violence at work. The necessity to carry out additional administrative tasks has increased in professions such as health-care work and teaching and there has been as increase in delivering health and social services care in the community, so more staff work away from a fixed workplace.[76]

Integration and globalisation

The progressive reduction of barriers that first took place between local and national, then regional and now intercontinental markets, is a dominant topic in recent economic history. Liberalisation of trade controls on manufacturers, an easing of restrictions on foreign direct investment and other capital movements, as well as sharply reduced costs of transportation and telecommunications, have fostered the emergence of a global market economy. More businesses face fiercer competition in their domestic and export markets. As a result of these changes, intensified global competition for products and services feeds through into pressures to adapt workplaces and match the efficiency and quality of market leaders – or close down.

Changing management structures

According to the Agency Changing World of Work report[76] several significant new developments in work organisation have emerged, for example: teamwork; decentralisation of supportive tasks such as quality and maintenance; job enlargement, job rotation, including interdepartmental job rotation; knowledge management; teleworking; virtual networks and new working time patterns.

Some of these changes have been introduced from a management efficiency perspective and others with the aim of improving work organisation and quality of working life for the employees. The study *High performance workplace practices and job satisfaction*[82] reveals that high performance work practices do indeed have a positive effect on work satisfaction. Key factors for workers' well-being are autonomy in the workplace, participation in decision-making and increased communication with colleagues. However, the research concludes that teamwork, job rotation and supporting human resource practices have only a limited impact.

Changes in the workforce

The European workforce has changed in composition and will continue to change over coming decades. Three major trends can be seen.[76]

The first trend is the ageing of the workforce. In all European countries, the average age of the workforce is rising and the percentage of workers over 50 will continue to grow. By 2006, it had reached the stage where employees in their fifties outnumbered those in their thirties. A forecast compiled by EUROSTAT shows that the number of older workers (aged 55 to 65) will increase by almost 9% from 2005 to 2010, but the number of young adults (25-39) will decrease by 4% in the same period. This trend will continue from 2010 to 2030 (older workers + 15.5%, young adults -10%).

A second trend is the increasing percentage of women in the workforce. However, it is uncertain to what extent jobs have been changed on the basis of this. Traditional differences remain in the types of jobs carried out by men and women, the types of employment contracts and in career development opportunities. Many women work in the caring services where there are high risks of stress, violence and psychosocial risk factors. More women than men work in jobs where the demands are high but there is little individual control over the work.

A third trend is immigration of new groups into European Member States. Migrant workers include two major categories: the highly skilled, much sought-after employee who can usually obtain the necessary papers to live and work in the host country and the unskilled, who are often equally in demand but for low-status/low-paid jobs that few nationals want to do. The unskilled often have difficulty in obtaining visas and work permits and are concentrated in unskilled jobs characterised by poor working conditions. An additional problem in these jobs is that written health and safety notices are important but ineffective if they are not in a language workers can read or if literacy levels are weak. Recent studies show that the position that recent migrant workers occupy within the labour market puts their health and safety at increased risk, in comparison with other workers in similar positions.

4.3.2 Changes in work content

New forms of work

Modern organisations are often more decentralised and may use 'lean production methods'. The result of these changes has been a reduction in directly employed staff. Many companies now only carry out core functions in-house and auxiliary functions have been outsourced. This results in chains of suppliers and subcontractors. The way organisations operate and work together with others has become more complicated and less stable. There is now more instability in work contracts and job descriptions. Companies make greater use of short-term contracts, temporary employees, freelancers or self-employed people. Increasingly, employees are flexibly deployed over multiple tasks. Some contractual relationships have become more informal. More use is

made of part-time workers, with women making up the majority. New technology may also influence the way people are employed, for example by creating more possibilities for people to work self-employed from home.[83]

Both case studies and quantitative data show that employees with a temporary or fixed-term contracts have less job security, less control over their working time, fewer career prospects, reduced access to training and perform less skilled tasks. These issues can result in work-related stress. Studies have showed that an increase in work-related stress also increases cardiovascular mortality.[84] These issues have a gender dimension, since women are relatively over-represented in non-permanent and part-time jobs.[81]

New qualifications

The current process of economic and technological transformation requires a constant renewal of skills on the part of workers, employers and managers and it favours those countries best able to meet this demand for enhanced skills. In other words, current growth is skill-biased in developed countries.[85] Perceived lack of control over work is a well-documented factor that contributes to work-related stress, which also increases cardiovascular mortality.[83]

In industrialised countries, high-skilled occupations, including professional, technical, and administration categories, recorded the highest growth of all occupations in the 1980s and 1990s. Given the skill-biased nature of the current economic and technological transformation, worker training (formal education, vocational training and training in firm-specific activities) assumes an increasingly crucial role to assist individuals to develop skills to find and retain formal employment.

Small and medium-sized enterprises (SMEs)

The percentage of small and medium-sized enterprises has increased. European figures from EUROSTAT show that work-health problems are far higher in small businesses. SMEs may lack resources and know-how to manage workplace health. In SMEs, particularly in micro-enterprises, there can also be a lack of a formal management structure that will also affect the health and safety management process. As the number of SMEs grows, this places additional demands on labour inspectorates and so forth, seeking to reach and support a larger number of workplaces and those that generally have fewer resources and knowledge to deal with workplace safety issues.[76]

Increasing work pace and workload

Work intensity is increasing in all countries in Europe with more weekend work, irregular and less predictable working hours and the increasing use of both very limited hours (involuntary part-time work) and excessively long hours (involuntary overtime). Greater work intensity and time

unpredictability do not seem to have been matched by an increase in employees' autonomy over their work.[76,81] These "new" risk factors are associated with psychological load – non-standard working times increase the risk of cardiovascular diseases.[83]

Consequences of these changes in the future

The world of work has radically altered in organisation and composition and will continue to change over coming decades. European Member States will need to deal with these changes which can have a positive or negative impact on occupational safety and health. An overview of workplace trends and possible implications is given in Table 4.7. It is clear that public health and workplace health interventions on cardiovascular and mental health problems among workers will be a major challenge for the future for the maintenance of a healthy workforce.

Table 4.7: Changes at work in the EU and the possible implications*

Workplace changes	Possible OSH changes/implications
Information communications technology (ICT)	• Highly cognitive (mentally demanding) work, can be very intensive • Possible increased stress if user-interfaces and equipment not user-friendly • Training for new tasks etc. very important but not always available • Possibility of machine-paced work and monitoring • Possible lack of awareness of risks of 'office' work
Growth of the service sector	• May have less well-developed OSH systems and traditions • High number of SMEs and temporary workers • Some areas involve dealing with the public, with possible increased risks of violence and stress • More care services provided in the community with staff working away from a fixed base
New forms of work ▸ flatter management structure ▸ fragmentation and increase in complexity ▸ leaner organisations ▸ increased part-time work ▸ temporary workers ▸ self-employed workers ▸ precarious workers in general	• Workers may experience social isolation • Many jobs less skilled and potentially monotonous • Some are technically self-employed for tax reasons but in practice work under the control of the parent firm • Evidence that they are more exposed to work hazards and have less access to training • Increase in work-related stress • An increase in work-related stress also increases cardiovascular mortality • More difficult to reach to provide OSH services such as information or occupational health services • Reduced central management control, including for OSH • Possible lack of clarity in responsibilities and decision-making • Reduced direct employment of safety managers etc. • Leaner organisations may have reduced capacity to deal with prevention • In complex organisations, increased need to integrate WHP into all management and financial functions

Table 4.7: continued

Workplace changes	Possible OSH changes/implications
Integration and globalisation	• Possible negative effect on ability to manage contractual relations • Possible stress factor • Pressures to adapt workplaces and match the efficiency and quality of market leaders • Possible lack of clarity in OSH responsibilities and decision-making
New qualifications ▸ high-skilled occupations, including professional, technical, and administration categories ▸ increase in complexity of tasks	• Possible lack of control over work • Need of worker training • Possible experience of work-related stress • Possible increase of mental and cardiovascular health problems • Possible confusion on OSH responsibilities
Changing management structures ▸ tele-working ▸ increased 24-hour working ▸ increased work intensity and pace of work ▸ rapidly changing tasks	• Homes not designed as workplaces • Possible social isolation • Risk-assessment difficulties • Increase in numbers working shifts and unsocial hours • Possible increase in stress, mental and cardiovascular health problems and fatigue • Confusion over OSH responsibilities
Increase in SMEs and micro-businesses	• Higher accident rates in SMEs • May lack formal management structures • May lack resources, awareness about workplace health promotion (WHP) • Increase in the number of organisations for labour inspectorates to visit
Changes in the workforce: ▸ ageing ▸ more women in paid employment ▸ immigration	• Danger of generalisation about reduced ability based on assumption of reduced cognitive and physical ability. Compensating experience not always recognised • May face particular problems learning new skills and coping with changes at work • Specific support and training needed • Concentrated in jobs with higher risk of stress, mental and cardiovascular health problems and fatigue, and in caring jobs with higher risk of violence • Tasks and equipment may be designed for men • 'Gender sensitive' approach needed • Possible stress if work organisations not adapted to accommodate different cultures • Many immigrant workers still concentrated in jobs with poorer working conditions • Some may experience language problems

* Adapted from: European Agency for Safety and Health at Work. Research on the changing world of work – Implications on occupational safety and health in some Member States of the European Union.

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5 Strategies for healthy hearts and minds at work

Because stress is known to be a very important work-related risk factor for CVD and mental ill health, sustainable stress prevention is the most effective way to deal with these diseases in workplaces. In this chapter it is shown that interventions to improve workplace health, although embedded in different concepts, have common goals, characteristics and benefits. These interventions can effectively reduce risk factors and diseases and show a positive return-on-investment. Furthermore, these interventions are most effective when work health and public health aspects are addressed together in the course of health promotion, disease prevention and return-to-work-measures.

5.1 Promoting health, preventing diseases and returning to work

Concerns about workplace safety have long been a major preoccupation of employees, prompting considerable research, legislation and workplace initiatives. However, only comparatively recently has the full impact of work accidents and occupational diseases beyond the workplace been realised. As well as the consequences for employees' families, the damaging effects also pose a challenge to the wealth of modern societies.

In 1981, the International Labour Organisation (ILO) adopted the Occupational Safety and Health Convention, which includes the following:[1]

"1. Each Member shall, in the light of national conditions and practice and in consultation with the most representative organisations of employers and workers, formulate, implement and periodically review a coherent national policy on occupational safety, occupational health and the working environment.

2. The aim of the policy shall be to prevent accidents and injury to health arising out of, linked with or occurring in the course of work, by minimising, so far as is reasonably practicable, the causes of hazards inherent in the working environment."

This ILO convention gave support to the development of occupational safety and health as a field of scientific study in its own right, as well as best practice in companies. In 1985 came the Occupational Health Convention, which requested member states to develop occupational health services for all workers. However, to date, the first convention has been ratified by only 47 countries out of more than 200 ILO member states and the latter convention by only 25 countries.[1] Among countries who have not signed the conventions are many EU Member States.

Yet the need for effective workplace health and safety practices in both industrialised and developing societies is high. According to the WHO, workplace fatalities, injuries and illnesses remain at unacceptably high levels and involve an enormous and unnecessary health burden, suffering and economic loss amounting to 4–5% of GDP. Estimates expect 2.0 million work-related deaths per year yet only 10-15% of workers have access to basic occupational health services.[2]

The concept of Occupational Health and Safety (OSH) has been widened in recent years. It has traditionally been focused on reducing work accidents and occupational diseases by identifying and preventing risk factors in the working environment, such as noise or dangerous chemicals. However it has become clear that this scope is far to narrow:

"There is increasing evidence that workers' health is determined not only by the traditional and newly-emerging occupational risks, but also by social inequalities, such as employment status, income, gender and race, as well as by health-related behaviour and access to health services. Therefore, further improvement of the health of workers requires a holistic approach, combining occupational health and safety with disease prevention, health promotion and tackling social determinants of health and reaching out to workers' families and communities." [3]

This widened scope brings OSH closer to the concept of workplace health promotion which has been introduced following the Ottawa Charter. This charter, adopted in 1986 by the WHO, recognised that creating healthy environments and enabling people to take responsibility for their health in specific settings, is just as important as preventing single risk factors – and more sustainable. In this broader view, work is an important setting for health promoting activities. Furthermore, it is now realised that returning to work after sickness absence can be of utmost importance for the recovery and social inclusion of the people concerned. Recognising that the likelihood of an individual returning to work is influenced by factors other than the severity of the disease, returning-to-work measures have to balance the capabilities of workers and the requirements of their jobs.

However, in practice, it is still common to find many approaches operating with different methods, with staff not knowing one from the other. For merely historical reasons, occupational health and safety and workplace health promotion responsibilities are usually allocated to different ministries on national and European policy level, thereby often disabling common activities. One aim of this report is to point to the common targets and the need to closely act together in creating healthy work and work environments. This is necessary especially with respect to CVD and mental ill health. Although it is unanimously accepted that there are work-related risk factors for both diseases, they are not considered as occupational diseases and are not, therefore, reported in national OSH systems or in the EU statistics.[4]

5.2 Common goals, common intervention strategies, common benefits

In contrast to their different origins, there are common intervention strategies for both OSH and Workplace Health Promotion in regard to the most important work-related risk factor for CVD and mental ill health – stress. See health causation and intervention diagram (Fig. 5.1).

The diagram describes a succession of events: a series of work-related and non work-related factors lead to stress symptoms in the short and long term. The extent to which these symptoms occur is influenced by individual, social and organisational factors (mediators). Interventions are possible for each of these events, from the workplace perspective as well as from the public health perspective. The diagram offers a framework to structure and to clarify at which level there are possibilities for intervention:

- The work-related stress factors often originate in work content, work environment, labour relations and working conditions. These four groups each comprise several categories of factors. The non work-related stress factors originate in people's private lives and include health, income deprivation, education, family, social participation, housing, environment, transport, safety and leisure.
- Mediators determine the scope of stress symptoms in the short and long term. At individual level, general personal data such as age, sex and education play a role depending on the extent to which the person deals with stress factors, as well as the labour capacity, the motivation and one's own perception of the balance between individual stress and stress-bearing capacity.
- Organisational and social factors influence the stress symptoms. Factors at job and company level include job autonomy, contact opportunities and leadership style. Social factors include a low level of participation in social networks.
- Negative short-term individual stress effects can be physiological (raised heartbeat, fast and shallow breathing, fear, tension and sleep complaints), behavioural (lower productivity, sickness, etc.), emotional (depressed mood) and cognitive (making errors). The individual effects are closely related to organisational and social consequences in the short term. At organisational level, short-term absenteeism, presenteeism and reduced productivity can result, while at social level we are faced with a rejection of social contacts. Negative long-term individual stress effects include illness and disability. The effects on the organisation include long-term absenteeism, accidents and loss of quality. The consequences at social level are a break with social networks, rising healthcare costs and life dissatisfaction.

Intervention is possible for every one of the factors at the origin of the stress, the mediators and the effects of stress.

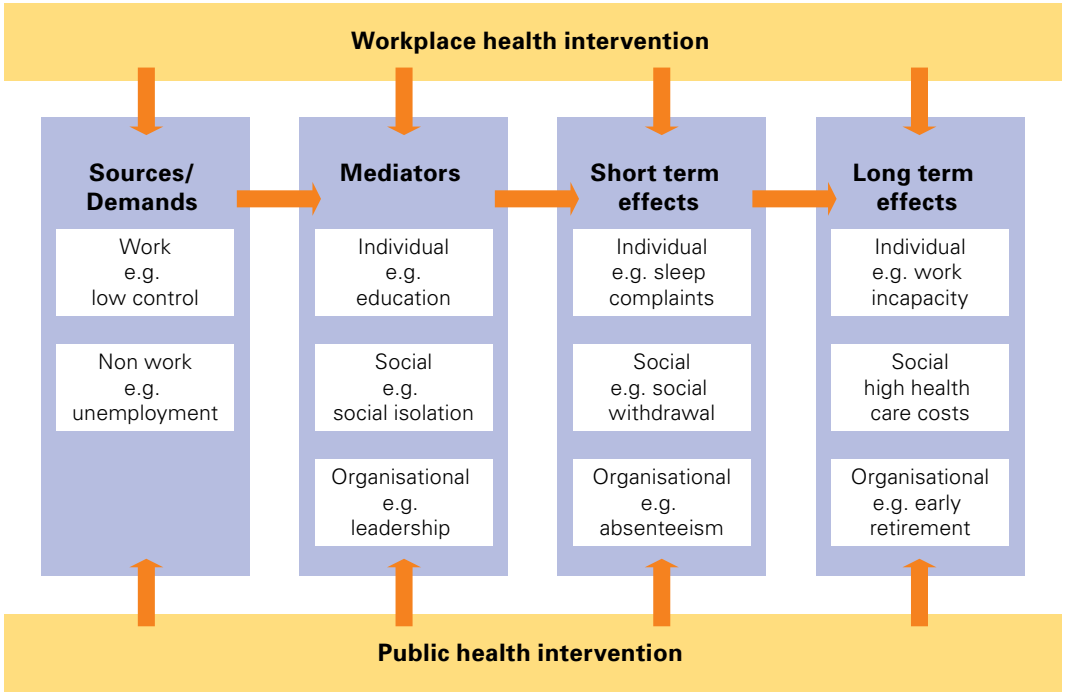

Figure 5.1: The health causation and intervention diagram

Workplace stress interventions have been shown to have pointed effects on the improvement of the health of employees as well as on the economic position of enterprises. The scientific consensus is that preventive measures lead to a reduction of risk factors and diseases and have a positive return-on-investment.

With respect to the economic effects, a summary evaluation of many studies on various health promotion programmes [5, 6, 7] emphasised that all of them reported a reduction in absenteeism in the range of 12% to 36% with a return-on-investment of up to 1:5. This means that for every 1 € spent on the programme, potentially 5 € could be saved due to reduced absenteeism costs. The effect of workplace health promotion on the direct medical costs was also studied and turns out in lower health expenditure. Observed effects are, among other things, fewer visits to the doctor, less hospitalisation as well as fewer days spent in hospital etc. The results show an average reduction in medical costs of 26%, the return-on-investment is reported to be between 1:2 and 1:6.[8]

The overall benefits – including financial savings – of health promotion programmes may not become fully apparent until many years after the health risks have been reduced – which makes the observed short-term effects even more remarkable. Summed up, it is this positive economic effect which makes a most powerful health promotion argument for companies and social insurance institutions.

The effects of specific workplace stress interventions have also been studied. For this purpose, interventions are often differentiated between actions aiming to increase individual psychological resources and those aiming to change the work context. Table 5.1 presents examples for both types as well as for a combined approach. As a general finding, a combination of different stress interventions appears to have the best effect. One recommendation is that, to be most effective, stress management should be comprehensive, taking into account prevailing working environment stress factors. Helping people to cope better with stress only deals with part of the problem; ideally, comprehensive interventions should be applied both to individual and organisational factors both work-related and worker-related interventions are necessary.[9] The sustainability of health promotion and prevention is assumed to be greatest when endpoints of stress interventions, such as health complaints or work satisfaction, are addressed as elements of larger targets, e.g. the employability of employees (see Box 5.2), and as part of national or international action plans (see Box 5.1). This again points to the strong link between workplace health and public health.

Table 5.1: Measures for work-related stress intervention

Individual	Organisational	Both
Relaxation training	Selection and placement	Support groups
Meditation	Reducing workload	Improving person-environment fit
Biofeedback	Improving work environment	Clarifying role issues
Cognitive-behavioural therapy	Communication	Participation and autonomy
Time management	Job redesign	
Employee assistance programmes		

Adopted from Jordan et al.2003[9]

BOX 5.1: National action plans for promoting heart health

Example 1: The Spanish Comprehensive Ischaemic Heart Disease Plan 2004-2007

Cardiovascular diseases are the primary cause of death for the Spanish population. Currently in Spain, ischaemic heart disease causes the largest number of cardiovascular deaths (31% in total, 40% in men and 24% in women). Within ischaemic heart disease, acute myocardial infarction is the most frequent single disease, with a share of 64%.

Ischaemic heart disease is preventable: it can be prevented before it occurs and its negative impacts can be prevented once it has occurred. The prevention of ischaemic heart disease has a great added value, as it also brings with it the prevention of other diseases.

The aim of this Plan is to define a general framework for action and care standards to guarantee patients appropriate prevention, care and monitoring of the phases of ischaemic heart disease.

To this end consensus has been reached to determine care standards, with clear, defined objectives which will give rise to certain actions throughout the process, from before the beginning of the illness until rehabilitation. Likewise the assessment and monitoring indicators are defined.

The Spanish Comprehensive Ischaemic Heart Disease Plan refers to the following areas of intervention:

- Prevention of coronary risk factors and promotion of healthy habits.
- Detection, diagnosis and treatment of patients with coronary risk factors.
- Care for patients with Ischaemic Heart Disease
- Secondary prevention and cardiac rehabilitation
- Information systems
- Research

Under the Prevention and promotion of healthy lifestyles area, the Plan defines the objective "Reduce exposure to psychosocial factors at work", with the following actions:

- Applying the principles of preventive action established in Law 31/1995, on the Prevention of Occupational Risks.
- Introduce psychosocial risk prevention programmes in companies.
- Develop the Specific Health Vigilance protocol of workers exposed to psychosocial risks.

Example 2: Action Plan for Promoting Finnish Heart Health for the Years 2005-2011

The goal of the Finnish Heart Association is that, in 20 years' time, cardiovascular diseases will no longer be a significant health problem among working-age adults and that people experience more healthy and active years in their lives. The actions that play the most important role in the development and treatment of cardiovascular diseases have to be more effective to reach this goal. The Action Plan for Promoting Finnish Heart Health provides guidelines, central strategies and recommendations for actions to prevent these diseases, and by doing so, it also promotes health on the population level. The action plan is part of the Finnish Heart Plan. [10]

Action proposals: Working-age (15-64)

1. *To support the implementation of the Workplace Health Promotion strategy and to ensure that activities promoting heart health are implemented as a part of this strategy.*
   Development of a healthy and safe working environment with a high level of work hygiene also promotes heart health via several mechanisms.
   Developing an optimal working environment is also important from the viewpoint of psychophysiology, which consists of a healthy working environment, working hours, rush, leadership and know-how. Therefore, issues relating to a healthy and safe working environment should also be included in leadership training.

BOX 5.1: continued

2. *To guarantee well-functioning occupational healthcare that also includes health promotion, surveys of cardiovascular disease risks, prevention and prompt treatment of cardiovascular diseases, and also to expand this work to psychosocial risk factors.*
   A training programme for occupational health doctors and nurses will be launched as a part of this proposal. The goal is also to enhance the role of occupational healthcare in the provision of expert assistance to company management. In addition, the healthcare of people going into retirement should be seen to.
3. *To guarantee the opportunity for healthy meals during the workday for as many people in working life as possible, and to increase the demand for such meals.*
   The possibilities of labour market organisations to influence the development of healthy working place meals by means of e.g. contract policies should be investigated, the number of employees with access to working place meals should be increased, and the possibilities to lower the VAT of healthy food provided at staff cafeterias should be investigated.
4. *To encourage and improve the opportunities for physical activity in commuting.*
   Employers should ensure the sufficiency of storage facilities for sports equipment and the availability of showers, and to increase the financial and work time incentives. The possibilities to promote physical activity in commuting as part of management work should be investigated.
5. *To increase the amount of physical activity during working hours and to get employers to encourage their employees to exercise.*
   Improving the diversity of work by means of physical activity should be part of the development of working life.
6. *To adopt the Current Care guideline regarding smoking cessation as a routine practice in healthcare and occupational healthcare, and to intervene in passive smoking.*
   The goal is to make all workplaces in Finland smoke-free with the support of legislation.
7. *To support early interventions with regard to excessive alcohol use.*
   At workplaces, the most important methods of action include mini-interventions, early intervention, identifying and treatment of those who have a problem with alcohol use, and recognition of high-risk groups and professions.
8. *To see to the maintenance and promotion of health and working ability among the unemployed by including these themes in the courses and training provided to the unemployed and by encouraging them to participate in activities organised by various associations and organisations.*
   According to the Occupational Health 2015 report, the functions of health centres should be developed in such a way that the health and functional capacity of the unemployed, and thereby their possibilities to find employment, are supported. Although the unemployed cannot use occupational health services, these activities would be best suited for the occupational health units of health centres, and issues relevant to heart health should also be taken into account in such activities. The need for health services among the unemployed should be taken into account, and similar action relating to health and functional capacity should be directed at them as at people in working life within the framework of public healthcare.
9. *To guarantee the right treatment at the right time.*
   The recommendations of the European Society of Cardiology should be introduced such as to activate early screening for cardiac disease risk factors in occupational healthcare also, and knowledge about the connections between work and cardiac diseases should be increased. The goal of providing the right treatment at the right time should be included in the national Heart Plan, and high-risk individuals should be treated and rehabilitated effectively.
10. *To increase women's knowledge about risk factors for vascular diseases, and to support the know-how of healthcare professionals regarding the special characteristics of women's heart health.*
    The Finnish Heart Association's Woman's Heart programme strives to improve the prevention, diagnosis and treatment of cardiovascular diseases in women and provides training and educational material for healthcare professional.

5.3 Good practice in WHP – The European Network for Workplace Health Promotion

5.3.1 The origins of workplace health promotion

Health promotion began in the 1970s as a result of the publication of the Lalonde report in Canada (concerning what came to be known as the 'New public health') which set out the difficulties associated with continuing health policies that focused exclusively on treatment and care. Healthcare inflation, the limitation of treatment and the rising demand for positive interpretations of health and support services to match them, gave rise to new thinking on public health. This thinking was characterised by a focus on wellbeing as opposed to illness, prevention as opposed to cure and generally on the concept of promoting good health rather than waiting for the breakdown of health.

These concepts gave rise to the development of the 1986 Ottawa Charter by the WHO. This pointed to the importance of creating healthy environments and of enabling individuals to make healthy choices within such environments. Fundamentally, it recognised that the creation of good health was a function, inter alia, of the multiple environments which we inhabit, one of which was the workplace setting.

This realisation led to the creation of a workplace health promotion movement, one which focuses on bringing the concerns of public health to the workplace setting. As public health has developed, these concerns have mainly concentrated on the prevention of the largest causes of premature death in society – heart disease and cancer. However, these concerns have been broadened to include mental health issues and also to take on board factors that influence health which are to be found in the workplace such as work organisation, job design and workplace stress.

This decision to introduce public health concerns into the workplace setting brings workplace health promotion face-to-face with an existing workplace health infrastructure – occupational safety and health (OSH). OSH has a long tradition, going back to the 19th century and is supported by a legal, policy and resource infrastructure which is many times larger than that of WHP.

5.3.2 The vision of the ENWHP: "Healthy Employees in Healthy Organisations"

The European Network for Workplace Health Promotion (ENWHP) was established in 1996 and is being supported by the European Commission through the Programme for Action on Health Promotion, Information, Education and Training (part of the Framework for Action in the Field of Public Health). In the past 12 years, the ENWHP has been at the leading edge of developments in European workplace health promotion. Through various joint initiatives, it has developed good

practice criteria for a variety of organisational types and supported the establishment of infra-structures for WHP in EU Member States. Using these national forums and networks, ENWHP facilitates the cross-border exchange of information and the dissemination of good workplace practice.

The first task undertaken by the ENWHP was to develop the Luxembourg Declaration. This is a statement which outlines and defines what workplace health promotion is and it provides the basis for the subsequent development of criteria of good practice. The Luxembourg Declaration states that:

"Workplace Health Promotion (WHP) is the combined efforts of employers, employees and society to improve the health and well-being of people at work. This can be achieved through a combination of improving the work organisation and the working environment, promoting active participation and encouraging personal development." (www.enwhp.org)

The European Network for Workplace Health Promotion is an informal network of national occupational health and safety, public health, health promotion and statutory social insurance institutions. Through the joint efforts of all its members and partners, it aims to contribute to improving workplace health and well-being and reduce the impact of work related ill health on the European workforce. The ENWHP is a platform for all stakeholders interested in the improvement of workplace health and committed to working towards the vision and mission of the ENWHP: "healthy employees in healthy organisations". Currently, the Network has National Contact Offices in 31 countries (the 25 Member States, Romania, Bulgaria, Switzerland and the three EEA countries).

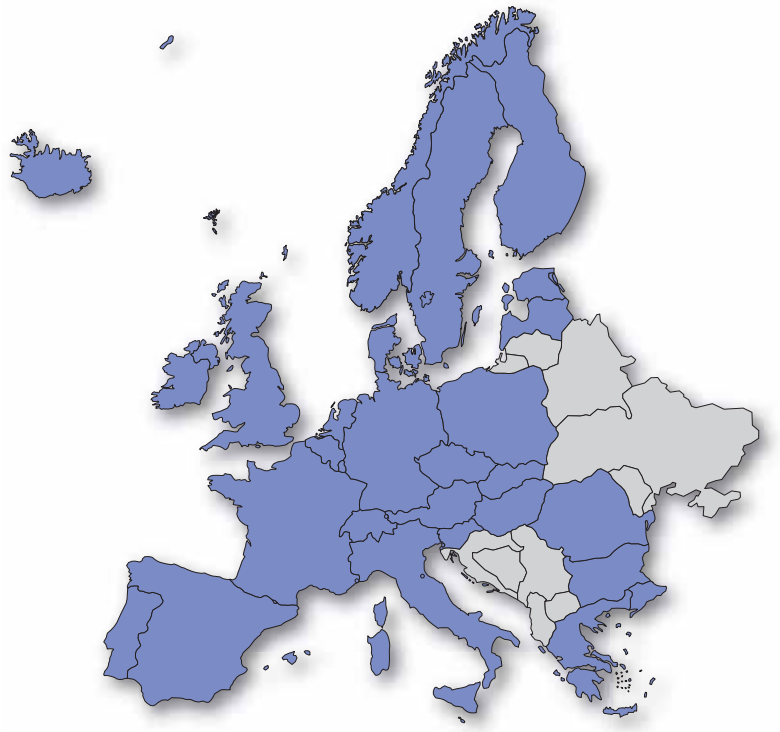

Figure 5.2: Countries covered by National Contact Offices of the ENWHP

ENWHP members have agreed a vision and mission statement which states:

"*We are a network of national occupational health and safety institutes and public health institutions committed to developing and promoting good workplace health practice, which in turn contributes to sustainable economic and social development in Europe.*"

This vision is based on a broad and comprehensive perspective on health and includes a number of convictions, values and judgements which ENWHP members share with each other. Healthy work is a social process and is therefore the result of the actions of various stakeholders inside and outside workplaces. Healthy work is being developed and influenced at various inter-related levels:

- Personal level;
- Enterprise / organisation level;
- Local – regional community level;
- National level (social security provisions / national health policy, labour and social affairs policy);
- European policy level.

Healthy work impacts on the quality of working and non-working life and contributes to the level of health protection of communities and populations. It also impacts on microeconomic performance (productivity and innovation) and macroeconomic performance (efficiency of the health care, welfare and education sectors, the competitiveness of businesses at company, national and European level). Healthy work also contributes to social cohesion.

Healthy work is organised through processes both inside and outside enterprises which are based on the general management cycle and specifically include infrastructure building and marketing. Healthy organisations combine individual and organisation health as well as physical, mental, environmental, social and economic health at all levels. Against this backdrop ENWHP seeks to achieve the following two targets by 2010:

Target 1: All 31 member countries of ENWHP (25 Member States, 3 EEA countries, 2 candidate countries and Switzerland) should have access to a supportive infrastructure at national level which:

- involves all relevant institutional and non-institutional stakeholders;
- identifies and disseminates good workplace health promotion practice according to national priorities in workplace health promotion;
- actively participates in knowledge-sharing at European and international level.

Target 2: To significantly increase the number of European employees who work in enterprises committed to practices and policies for promoting health.

5.3.3 Criteria for good practice

The ENWHP has produced a set of quality criteria for good practice in WHP, which is based on the Luxembourg Declaration and on the quality model of the European Foundation for Quality Management. These criteria represent an ideal model of WHP, implementation that is unlikely to exist, in its entirety, in any given instance of WHP. However, the criteria also represent a set of targets, which if reached, will ensure that WHP is effective and is likely to become embedded in the organisation concerned.

There are six main dimensions to the criteria, which are organised into enablers – policy and operational factors – and results, which represent the outcomes. The model of good practice is outlined in Figure 5.3 below.

Corporate policy

Corporate policy refers to the extent to which WHP is integrated into management systems and practices within the organisation. Specifically, it refers to having a written WHP policy, the integration of WHP into organisational structures and processes, the provision of adequate resources for WHP, the extent to which WHP practice is monitored, the integration of WHP into training and the access which all staff have to health-related facilities.

Human resources and work organisation

This dimension refers to the extent to which all staff are enabled by the organisation to engage in effective WP. Specifically, it refers to the level of work-related skills of staff, to how work

is organised to ensure that it is not too demanding, career development opportunities, the opportunity to participate in workplace health activities, levels of workplace support by all staff, reintegration policies following sickness and the existence of policies and practices in relation to work-life balance.

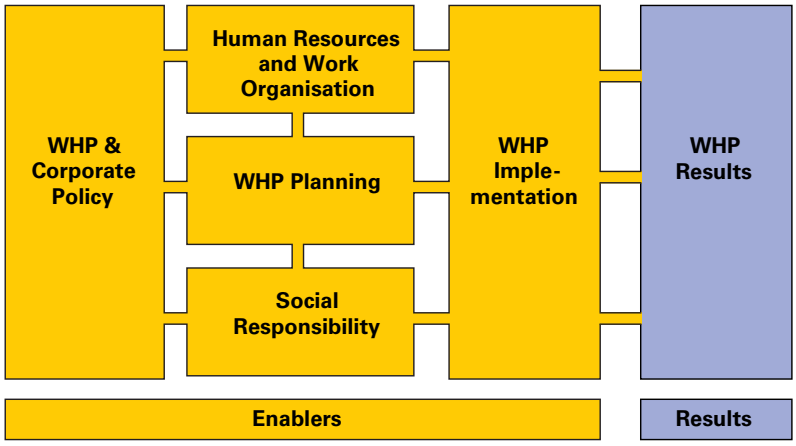

Figure 5.3: Dimensions of Good Practice in WHP

WHP planning

WHP planning refers to the need to ensure that WHP programmes are properly planned, implemented and monitored. Specifically, it refers to the need to ensure that all staff are covered by WHP measures, the systematic process of identifying health needs of the workforce upon which the WHP programme is based and the communication of information to staff about WHP programmes.

Social responsibility

This dimension refers to the activities of the organisation and its relationship with the external environment. Specifically, it refers to managing its environmental impact and to the support it gives for heath-related, social, cultural and welfare initiatives.

Implementation of WHP

WHP should include measures that are directed at both the work environment (in its broadest sense) and at the individual worker. Specific elements include the presence of a representative project team which oversees the process, the systematic collection of information, the setting of measurable objectives, the existence of balanced WHP programming and the systematic evaluation of the WHP initiative.

Results of WHP

The results and benefits of undertaking WHP can be seen in relation to individual health, organisational performance and customer satisfaction. This dimension specifically refers to the measurement of impact on customer satisfaction, on staff satisfaction, health and wellbeing and the impacts that WHP has on the financial/economic performance of the organisation.

5.3.4 Challenges

As indicated earlier, these criteria represent an ideal which is unlikely to be fully reached in practice. This is particularly the case for micro-enterprises and for small and medium enterprises (SMEs), where the existence of formal structures in relation to many of these issues is unlikely to be present. In recognition of this, the ENWHP has also developed a reduced set of quality criteria which can be applied.

In conclusion, the quality criteria which have been developed by the ENWHP contain a number of key principles and features which refer to the unique flavour of WHP. These include:

- The need for a balance between individually-oriented and workplace-oriented WHP measures
- The need for a health-needs-driven approach to WHP
- The integration of OSH, public health and environmental health measures
- The integration of WHP into organisational management systems
- The need for a structured and systematic approach to WHP
- The need to take a broad view of the results of WHP implementation.
- The need for inclusive WHP practice

Adherence to these principles can help ensure that WHP is properly integrated into organisational life, both in terms of management practice and in its relationship with health.

BOX 5.2: The goal of employability

Employability is about work and the ability to be employed; i.e.

- the ability to gain initial employment; hence the interest in ensuring that 'key skills', careers advice and an understanding about the world of work are embedded in the education system
- the ability to maintain employment and make 'transitions' between jobs and roles within the same organisation to meet new job requirements, and
- the ability to obtain new employment if required, i.e. to be independent in the labour market by being willing and able to manage one's own employment transitions between and within organisations.

It is also, ideally, about:

- the quality of such work or employment. People may be able to obtain work but it may be below their level of skill, or in low paid, undesirable or unsustainable jobs.

Employability depends, for the individual, on:

- their assets in terms of the knowledge, skills and attitudes they possess
- the way they use and deploy those assets
- the way they present them to employers
- crucially, the context (e.g. personal circumstances (health status) and labour market environment) within which they seek work.

The balance of importance between and within each element will vary for groups of individuals, depending on their relationship to the labour market. The employability of a lot of individuals in Europe is reduced by health problems. A new report of the OECD ascertains: "Too many workers leave the labour market permanently due to health problems and yet too many people with a disabling condition are denied the opportunity to work. This is a social and economic tragedy common to virtually all OECD countries and an apparent paradox that needs explaining. Why is it that health is improving, yet more and more people of working age end up out of the workforce relying on long-term sickness and disability benefits?"[11]

When analysing the economically inactive population it is at once apparent that inactivity is extremely age and gender specific. The main reason for inactivity of young people is participation in education, while retirement is the main reason for inactivity of older persons. Women are much more likely than men to be inactive with family responsibility as the main reason identified. Since 1999 the share of the inactive population in the total population of 15 to 64 years old has dropped from 31.8% to 30.4% in the EU25. Almost all of the decrease is due to an increase in the labour force participation of women. The share of inactive women has gone down in this period from 40.5% to 38.1%, while the share of men outside the labour force has remained almost stable, 23.0% to 22.6%.

Training is an important dimension of employability. There are substantial differences between the countries surveyed in terms of the level of training that employers provide: it ranges from 6%–10% in the acceding and candidate countries to around 40% in northern Europe. There are differences according to age and sex: older workers receive less training and women receive more training than men: 25% of men aged between 30 and 49 years received training from their employer, compared to 20% of men aged over 50 years.

Workplace health measures can contribute more specifically to the employability of European workers by emphasising a pro-active approach through health promotion, prevention and rehabilitation.

5.4 Good practice in prevention – Occupational safety and health systems (OSHS)

5.4.1 The European perspective

Occupational safety and health (OSH) targets the prevention of accidents and health risks as well as a humane design of work. As mentioned previously, CVD and mental ill health are connected with workplace risk factors. Because OSH has an important influence on the design of workplaces, an overview of regulations, preconditions, approaches and challenges for OSH is set out here.

The scope, objectives and minimum OSH requirements for the protection of workers in the EU, are laid down in the Council Directive 89/391/EEC.[12] The term "worker" is general and not restricted to a wage or salary relationship (excluding domestic servants). The employer determines the conditions under which work is carried out and is therefore responsible for OSH, including all measures of organisation, implementation and improvement of OSH. The employer may involve external experts, e.g. OSH services, or assign OSH duties to individual employees. Consultation and involvement of the workers and the workers' representatives are major obligations.

Modern OSH uses a holistic approach that takes into account general principles of prevention – e.g. adaptation to technical progress, active role of the workers, information and training and the development of a coherent overall prevention policy which covers technology, organisation of work, working conditions, social relationships and the influence of the working environment. In designing OSH measures at company level, preventive strategies to avoid accidents at work, occupational diseases and work-related health risks have priority. It includes adapting the work to the individual, especially the design of workplaces, the choice of equipment and working and production methods, with a view, in particular, to alleviating problems associated with monotonous, target-driven work rate. The measures are based on the assessment of risks.

Studies show that the integration of OSH targets into a corporate culture and making OSH a leadership issue, determines, among other factors, the success of a business. It is important therefore that OSH is included in the decision-making process and that an organisation is judged as much by its OSH record as by the quality of its products and services. The implementation of an OSH management system, which can be combined with, for instance, quality management and suitable planning and controlling instruments for the decision makers, can significantly increase the effectiveness of OSH and improve the overall business performance. Especially in large and medium-sized enterprises, the use of OSH management systems has become an accepted approach to reduce injury and illness. Many of the features of successful OSH management systems are similar to management practices advocated for achieving quality and business excellence. In response of the need to provide internationally accepted rules for systematic OSH management, the International Labour Office (ILO) has adopted the Guidelines on Occupational Safety and Health Management Systems.[13]

Various knowledge-transfer methods are available to give OSH practitioners the necessary knowledge, tools and support, including information, advice and training. Qualifications play an important role. Integration of OSH issues into education and training courses enables future managers to make decisions – based on their own expert knowledge. For enterprises, access to data has improved considerably in recent years. Documentation services, information from the Internet, brochures, leaflets and professional journals are all easily accessible. They provide guidance for such things as risk assessment and decision-making processes, concepts for the OSH organisation and suitable materials – as well as examples of good practice – either charge-free or at low cost. However SMEs still face problems in getting access to appropriate information and support.

Research among European institutions, such as the European Foundation for the Improvement of Living and Working Conditions, is important for the development of OSH in the EU. The exchange of information about research and its valorisation is one of the central tasks of the European Agency for Safety and Health at Work. (http://osha.eu.int)

According to the EU Commission, EU legislation has had a positive influence on the national standards for OSH.[14] Health and safety improvement measures are reported to have made a significant contribution to better working conditions, boosting productivity, competitiveness and employment. However, there are still too many accidents and diseases caused by work and there is not yet a systematic access for all enterprises to protective and preventive workplace health services in Europe.

The problems are especially significant in relation to SMEs throughout the whole of Europe. Furthermore, the quality of services varies. The report points out miscellaneous flaws in the application of the Framework Directive and the individual Directives, e.g. consideration of psychosocial risk factors and work organisational factors. As underlined in the report, systematic risk assessments are not universally carried out. Where they are, there are concerns about their incomplete and superficial nature, inadequate documentation and supervision and lack of appropriate involvement of workers. While there is a good basis to build on, further intensive efforts are needed to ensure correct application throughout the economy.

5.4.2 Challenges for OSH

In the modern world of work, increasing complexity of processes and changes in working conditions give rise to different potential health risks, especially work-related stress.[15, 16] New forms of employment relationships and work environments have to be considered. On a global level, the promotion of 'decent work' has become an important issue of the ILO.[17] The underlining concept is based on an integrated approach covering productive and freely-chosen work, rights at work, social protection, social dialogue and the inclusion of the gender dimension. Decent work at all levels is also an integral part of the European Social Agenda.[18] OSH needs to target the modern causes and consequences of work-related stress and thus contribute to the prevention of CDV and mental ill health.[19]

The EU is confronted with a high rate of migration, as well as demographic challenges. In 2002, the annual crude net migration rate was 2.8 per 1000 population in EU25.[20] The First Annual Report on Migration and Integration of the Commission points out that especially in countries like Greece, Italy, Slovenia, Slovak Republic and Germany, which are experiencing negative natural growth, migration makes an important contribution to population increase. According to estimates, the number of Europeans of working age (between 15 and 64) will shrink by 20 million by the year 2030, even taking into account 1.8 million immigrating into the EU every year. The EU Commission has agreed on a strategy paper to address demographic change in the 25-member bloc. Therefore, it will be a challenge for OSH to develop new ways to integrate migrants and immigrants, whose behaviour and attitudes are influenced by their cultural backgrounds, while at the same time supporting strategies that balance the demands of both family and career and the promotion of workability of aging workers.

5.5 Good practice in rehabilitation – Early interventions and return to work measures

5.5.1 Types of interventions

Every day, about 15% of all employed people in Europe experience some chronic health problem. These problems may or may not result in absence from work, depending on the nature of the illness but also on factors such as their company's benefit scheme, absence management policy and perceived job security. Disability-related benefits are therefore claimed by a smaller proportion – only 6% – of the working-age population.[21] There are, broadly, three categories of interventions:[22]

- Early interventions for employed people who experience health problems and are still working or who take short-term sick leave
- Return to work measures for employed people on long-term sick leave
- Rehabilitation: for those suffering from health problems and requiring support to gain employment

Early interventions aim to prevent, particularly long-term, sick leave. In general, the majority of spells of sickness absence involve less severe health problems ("common health problems").[23] Work is mostly resumed after "natural recovery", without any particular work-related intervention, requiring only ordinary medical treatment or rest and managerial supervision. In some cases however, a more active approach is needed, mainly focusing on two areas.[24] The first involves preventive measures, e.g., temporary or permanent adaptations to the working conditions. The second focuses on worker-oriented preventive measures, e.g., specific medical treatment or promotion of workability by means of individual training programmes. Both types of interventions can be carried out when the employee with health problems is still working, or during the early phase of sick leave.

It is hard to draw a clear borderline between early interventions and return to work interventions, because it largely depends on the specific circumstances. The target group of return to work interventions mostly are workers who are on long term sick leave due to severe and/or chronic health problems. Interventions can also focus on adaptations to the working conditions but, specific medical treatment is frequently needed. In cases of serious illness, with the risk of enduring health restrictions, where medical treatment has nothing more to offer or remains incomplete, medical rehabilitation may be needed. In cases where the illness or disease permanently reduces the worker's capabilities to the point where he or she can no longer carry out their original job, vocational rehabilitation and training measures may be needed, eventually accompanied by job search support.

5.5.2 Effectiveness in tackling mental health and CVD problems

Mental health problems

There seems to be a large gap in research into and application of the types of interventions mentioned above in regard to mental health problems. As illustrated by a recent EU study, interest in policies aimed at reducing mental health problems in the work force is quite new.[25] Also, a recent study commissioned by the Swiss Disability Pension Fund indicated that the range of measures applied is quite limited, and that there is not much information on their impact and effectiveness. In most countries, the repertoire of measures is still in the development stage, and 'good practices' are still quite rare. Approaches and measures that are in operation can be divided into three categories:[26]

- Firstly, early identification of vulnerable groups consists of measures which aim to screen and detect people who are at risk of long term work incapacity. Examples of tools used are the screening of social security records or occupational health assessments.
- Secondly, work resumption measures – the largest category – may include various approaches such as providing a 'return to work guideline' to both the employer/supervisor and his/her employee who became sick-listed or disabled due to mental health problems. There is also the 'case management approach' in which a central worker facilitates communication between the people involved, coordinates the treatment and makes a return to work plan, agreed by employer and employee.
- Finally, social insurance interventions, such as the application of specific evaluation criteria and assessment instructions (e.g. Chronic Fatigue Syndrome), guidelines for the counseling of benefit claimants, or development of multipurpose guidelines to assess the need of rehabilitation measures and evaluation of eligibility for a disability pension.

In the United Kingdom, a literature review has been carried out regarding "models of job retention" for people with mental health problems. This review identified three different models:[26]

- The employee assistance programmes, provided by the employer, include counselling and allow employees free and confidential access to mental health professionals. These

programmes originate in the USA and are relatively new in the UK. Primarily, they can be considered as a form of easily accessible stress intervention. They provide help to employees while working and are a source of advice for the management on health problems within the workplace.

- In the social process models, four different roles are allocated to a job retention worker: a source of information to the employer (about the nature of the disability), interpreter (of workplace policies and procedures to persons with disabilities), negotiator (helping to secure adjustments in tasks and work site) and trainer (to supervisors and others, on how to accommodate people with disabilities).
- The case management approach involves a central worker who facilitates and maximises communication between health services, employment services, employers and other relevant agencies. The case manager needs training in vocational, rehabilitation and employment issues.

The relatively few evaluations available on the interventions above indicate that some form of case management appears to be the most effective means of support, as well as facilitating Return to work plans, workplace adaptations and creating supportive workplaces.

Cardiovascular health problems

More and more general health promotion initiatives are being adapted for the workplace via workplace health promotion and prevention programmes, such as prohibition of smoking, company physical exercise schemes, provision of healthy canteen food and reducing stress.[27] These programmes are mostly aimed at changing lifestyle factors in order to decrease the risk of a cardiovascular disease (CVD). In the recovery period of a worker who has experienced a CVD, the employer has to actively explore the feasibility of any special arrangements that may be needed to permit an early return to work. Experience has amply demonstrated that the success of the rehabilitation effort diminishes as the absence from work lengthens.

Professional guidelines exist for the content of a cardiac rehabilitation programme. According to Dafoe and Huston, rehabilitation should involve a multidisciplinary team focusing on education, individually-tailored exercise, risk factor modification and the optimisation of functional status and mental health.[28] Health professionals should also play their part in encouraging an early return to work by tackling mistaken health beliefs, especially about work disability. The beneficial effects of rehabilitation include a reduction in the rate of death from cardiovascular disease, improved exercise tolerance, fewer cardiac symptoms, improved lipid levels, decreased cigarette smoking, improvement in psychosocial well-being and increased likelihood of return to work. The prognosis after recovering from an uncomplicated CVD is that regular activities at home can be taken up after 4 weeks post-hospital discharge.[29]

Return to work is believed to make a major contribution to regaining quality of life among CVD patients. Cardiac rehabilitation programmes often include assessment and treatment strategies to facilitate early return to work. Failure to get back to work often relates more to the patient's health worries than to the actual condition of their heart.[30] Early intervention can generate increased motivation and a positive attitude towards workability. Whereas physical reconditioning played a major role in cardiac rehabilitation in the past, nowadays secondary prevention and psychosocial recovery are equally important. Studies on the success of returning to work after the onset of a heart disease have shown that several different issues impact on this process:[31]

- the nature of the original cardiovascular event that led to the individual stopping work;
- the residual loss of function following the cardiac event;
- the prognosis of the CVD;
- the individual's nature (psychosocial factors seems to play a more significant role in whether an individual returns to work than medical/clinical factors);
- impact of the medication or medical devices (such as a pacemaker).

Typical prognosis for a return to work on full duty is about two or three months after a myocardial infarction and up to six months after coronary artery bypass graft (CABG).[26] However, there exists a wide deviation of sick leave period after CVD. The recovery of a worker is helped by gradually building up working activities in phases.[32] The return to work path of an employee after a CVD must be closely guided by the general practitioner or occupational health physician (if one is present).

5.5.3 Future challenges

In the case of early interventions, return to work measures and rehabilitation regarding persons suffering from mental or cardiovascular health problems, there are several challenges for the future:

- Firstly, in recent years, mental health problems have become one of the main categories of health problems among workforces in Europe, frequently resulting in sick leave or even work disability. This may partly be explained by the rapid change in the nature of work in Europe, illustrated by the use of new technologies, changes in employment patterns, new forms of work, growth in the service sector, etc. Many of these changes also impact on the balance between working and private life. Altogether, for many workers, these developments have resulted in an increase of the mental demands both in their working and private lives, leading to a higher risk of mental health problems. As further developments in the nature of work are likely, interventions on mental health problems among workers can be considered as a major challenge for the future maintenance of a healthy workforce.
- Secondly, the European workforce is rapidly ageing. In general, higher prevalences of health complaints can be found among older groups of workers including mental and cardiovascular

health problems. The ageing of the workforce therefore threatens higher sick leave and disability rates in many European countries. This negative scenario can partly be tackled by an effective policy on early interventions, return to work measures and rehabilitation. Moreover, rehabilitation interventions focusing on both diseases may help address the low labour market participation among elderly persons.

- Finally, the challenges mentioned above will also have an effect at company level, requiring an integrated policy on early intervention and return to work measures. A relatively new and challenging approach is what is known as disability management. This focuses on managing employability whilst taking account of any health impairments employees may have. The most distinctive feature of this new strategy is that the company defines its tasks and how it addresses occupational capacity or incapacity. It has several common areas of interest with policies involving working conditions, absenteeism and return to work, but also with competence and performance management. Disability management goes one step further, to explicitly include management issues such as corporate culture, styles of management and the development and deployment of human potential. This integrated approach demonstrates increased awareness of employers of the beneficial effects of early interventions and return to work strategies in their personnel employability strategy.[33]

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6 Policy recommendations

6 From individual level intervention to (pan)-national action plans – Recommendations to policy makers

Cardiovascular diseases and mental ill health have multiple causes. They are associated with working and living conditions, individual characteristics and socio-economic status. Health promotion and prevention activities must therefore take a multi-disciplinary approach and recommendations on how to tackle CVD and mental ill health in a workplace scenario have been produced for various audiences.[1-13] However, there is still a tendency in some areas to treat these issues in isolation. This report emphasises that diseases often are interrelated and that effective and sustainable health promotion and prevention calls for collaboration across different professions and policy fields.

The recommendations of this report are directed at policy making. They are aimed at the people who have the power to develop or influence policies and practices at an international, national, regional, local or company level. Policy makers need to be able to identify the warning signs of workplace health problems within their daily flood of information.

As a starting point for action, policy makers should bear in mind some simple facts:

- the world of work affects health and is itself affected by ill health
- this is especially true for CVD and mental ill health
- workplaces are powerful settings for health promotion and prevention
- workplace health interventions are available and effective
- workplace health issues apply to non-working life as well
- workplace health is an essential part of public health.

There are currently great challenges to workplace health from

- ongoing demographic and structural changes in the world of work
- regional health and safety discrepancies in Europe, especially among the new Member States
- the imbalance in access to preventive services, especially with respect to small and medium enterprises (SME) and to migrants.

Decision makers and advisers in the field of public health, occupational health and safety and social insurance need to influence policies through the principles of advocating health, enabling people and mediating processes as laid out in the WHO Ottawa Charter of health promotion.[14]

1) Policy makers should advocate workplace health by

- making workplace health issues an integral part of all policy fields
- recognising the interdependence of illnesses and the need for integrated policies
- taking a public health perspective
- addressing the specific needs of high risk groups
- combating health inequalities
- promoting social inclusion
- enhancing intrinsic job quality
- ensuring policy evaluation by collecting monitoring data and information

"Good health is a major resource for social, economic and personal development and an important dimension of quality of life. Political, economic, social, cultural, environmental, behavioural and biological factors can all favour health or be harmful to it. Health promotion action aims at making these conditions favourable through advocacy for health."

(Ottawa Charter of Health Promotion 1986)

2) Policy makers should enable workplace health by

- treating workplace health issues as part of employment strategies aimed at
  - improving employability
  - early and safe return to work for absentees
  - improving quality of work
  - ensuring decent work.
- improving the information basis by
  - including the collection of occupational information in public health surveys
  - monitoring workplace health in ongoing surveys such as the Eurobarometer
  - reporting on health impacts – including costs and benefits – on work

"Health promotion focuses on achieving equity in health. Health promotion action aims at reducing differences in current health status and ensuring equal opportunities and resources to enable all people to achieve their fullest health potential. This includes a secure foundation in a supportive environment, access to information, life skills and opportunities for making healthy choices."

(Ottawa Charter of Health Promotion 1986)

- promoting research into evidence of workplace health interventions with regard to
  - the positive effects of work
  - specific problems in high risk occupations
  - the specific risk of migrants, unemployed and older workers
  - how health promotion can effectively reach those workers who are especially in need of.

3) Policy makers should mediate workplace health by

- promoting the collaboration between OSH and public health institutions e.g. develop common training, strategies, research programmes and action plans
- enforcing European and national regulation in prevention and occupational health & safety
- promoting multi-dimensional, multi-professional European and national health action plans
- ensuring that health action plans address workplace health issues
- promoting target setting
- taking a broader view of workplace health as part of the social dialogue
- promoting collective agreements on workplace health promotion and prevention
- promoting the evaluation of a framework agreement e.g. on work-related stress.

"The prerequisites and prospects for health cannot be ensured by the health sector alone. More importantly, health promotion demands coordinated action by all concerned. Health promotion strategies and programmes should be adapted to the local needs and possibilities of individual countries and regions to take into account differing social, cultural and economic systems."

(Ottawa Charter of Health Promotion 1986)

A summary of these recommendations is given in Figure 6.1. It cannot be repeated too often that in times of globalisation, improvement of health at work requires a holistic approach, combining health promotion and prevention, occupational health and safety as well as addressing social determinants and employability.

Note facts

- CVD and mental ill health are a burden to work
- Work is a risk factor
- Work is a setting for health promotion
- Workplace health intervention are effective

Consider challenges

- Demographic & structural changes to work
- increasing health & safety discrepancies in Europe
- increasing discrepancies in preventive services

Policy Makers

Advocate workplace health

- Work Health issues integral to all policies
- Public health view taken in work health issues
- Monitoring the policy effects on workplace health

Enable people

- Work Health issues considered in employment strategies
- Improving the information basis
- Research evidence of work health interventions

Mediate processes

- Health action plans to address work issues
- Enforce regulations in prevention and workplace safety
- Broader view of workplace health in social dialogue

Figure 6.1: The policy makers' chart for workplace health

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Annex

Annex A Structure of the workforce in the EU

List of tables and figures

Persons aged 15 years or more
Total: 380.3 million
% female: 51.7
% < 25 years: 14.8
% 55-64 years: 13.8

Persons in employment
Total: 197.5 million
% female: 44.1
% < 25 years: 10.5
% 55-64 years: 11.3

- **Part-time job** Total: 36.2 million — *% female: 77.6; % < 25 years: 14.4; % 55-64 years: 13.6*
- **Not available for full-time job** Total: 25.1 million — *% female: 80.0; % < 25 years: 14.6; % 55-64 years: 13.9*
- **Available for full-time job** Total: 7.1 million — *% female: 72.6; % < 25 years: 16.0; % 55-64 years: 9.4*
- **Full-time job** Total: 161.0 million — *% female: 36.6; % < 25 years: 9.6; % 55-64 years: 10.7*
- **Self-employed** Total: 25.5 million — *% female: 24.8; % < 25 years: 2.4; % 55-64 years: 16.6*
- **Family workers** Total: 1.7 million — *% female: 62.8; % < 25 years: 12.6; % 55-64 years: 14.2*
- **Employees** Total: 133.8 million — *% female: 38.5; % < 25 years: 10.9; % 55-64 years: 9.6*
  - **Permanent job** Total: 116.0 million — *% female: 38.1; % < 25 years: 7.3; % 55-64 years: 10.5*
  - **Temporary job** Total: 17.7 million — *% female: 41.2; % < 25 years: 34.1; % 55-64 years: 3.7*

Unemployed persons
Total: 19.5 million
% female: 48.9
% < 25 years: 24.3
% 55-64 years: 8.0

- **Unemployment less than 1 year** Total: 10.5 million — *% female: 48.4; % < 25 years: 31.0; % 55-64 years: 5.5*
- **Searching for a full-time job** Total: 7.3 million — *% female: 42.4; % < 25 years: 30.0; % 55-64 years: 5.3*
- **Searching for a Part-time job** Total: 1.5 million — *% female: 77.6; % < 25 years: 32.3; % 55-64 years: 7.2*
- **Unemployed 1 year or longer** Total: 8.7 million — *% female: 49.5; % < 25 years: 15.6; % 55-64 years: 11.0*
- **Searching for a full-time job** Total: 5.9 million — *% female: 44.2; % < 25 years: 15.7; % 55-64 years: 11.1*
- **Searching for a Part-time job** Total: 1.0 million — *% female: 79.3; % < 25 years: 8.9; % 55-64 years: 15.7*

Inactive persons
Total: 163.3 million
% female: 61.3
% < 25 years: 18.9
% 55-64 years: 17.5

- **Seeking employment but not available** Total: 2.3 million — *% female: 57.7; % < 25 years: 29.7; % 55-64 years: 10.4*
- **Would like to have work but not seeking** Total: 14.4 million — *% female: 63.4; % < 25 years: 25.3; % 55-64 years: 12.6*
  - **Because of**
    - Education: 2.8 million % female: 51.5
    - Personal or family responsibilities: 3.1 million % female: 94.1
    - Retirement: 0.7 million % female: 47.5
    - Illness or disability: 2.1 million % female: 47.5
    - Belief no work available: 2.0 million % female: 64.8
    - Other reasons: 3.7 million % female: 57.8
- **Does not want to have work** Total: 146.1 million — *% female: 61.1; % < 25 years: 18.1; % 55-64 years: 18.1*
  - **Because of (2)**
    - Education: 19.8 million % female: 50.8
    - Personal or family responsibilities: 11.5 million % female: 97.6
    - Retirement: 77.9 million % female: 55.5
    - Illness or disability: 9.3 million % female: 53.8
    - Belief no work available: 1.2 million % female: 66.8
    - Other reasons: 26.4 million % female: 71.9

(1) Due to non-response, certain sub-totals may not exactly sum up to the corresponding aggregate
Persons aged 75 or more are considered as retired.

Source: Eurostat, Statistics in focus. Population and social conditions, 13/2006

Figure A.1: Work status of persons aged 15 years or more, EU25, 2005 (1)

Table A.1: Total employment rates of persons aged 15 to 64 by sex and age (in %)

	Total				Males				Females			
Countries	**15-24 years**	**25-54 years**	**55-64 years**	**Total**	**15-24 years**	**25-54 years**	**55-64 years**	**Total**	**15-24 years**	**25-54 years**	**55-64 years**	**Total**
Belgium	27,5	78,3	31,8	61,1	29,7	86,1	41,7	68,3	25,2	70,4	22,1	53,8
Czech Republic	27,5	82,0	44,5	64,8	31,3	89,8	59,3	73,3	23,4	74,0	30,9	56,3
Denmark	62,3	84,5	59,5	75,9	63,9	88,3	65,6	79,8	60,6	80,6	53,5	71,9
Germany	42,0	77,4	45,4	65,4	43,7	83,7	53,5	71,2	40,2	71,0	37,5	59,6
Estonia	29,1	79,6	56,1	64,4	33,1	81,9	59,3	67,0	25,1	77,5	53,7	62,1
Greece	25,0	74,0	41,6	60,1	30,1	89,5	58,8	74,2	19,8	58,5	25,8	46,1
Spain	38,3	74,4	43,1	63,3	43,5	86,9	59,7	75,2	32,8	61,5	27,4	51,2
France	30,1	79,8	37,9	63,1	33,9	87,0	40,7	68,8	26,3	72,9	35,2	57,6
Ireland	48,7	77,9	51,6	67,6	51,5	88,4	65,7	76,9	45,9	67,3	37,3	58,3
Italy	25,7	72,3	31,4	57,6	30,4	86,6	42,7	69,9	20,8	57,9	20,8	45,3
Cyprus	36,7	81,8	50,6	68,5	40,5	91,8	70,8	79,2	33,2	72,2	31,5	58,4
Latvia	32,6	78,4	49,5	63,3	38,7	81,7	55,2	67,6	26,2	75,3	45,3	59,3
Lithuania	21,2	81,0	49,2	62,6	24,8	83,3	59,1	66,1	17,4	78,8	41,7	59,4
Luxembourg	24,9	80,7	31,7	63,6	28,4	92,8	38,3	73,3	21,3	68,4	24,9	53,7
Hungary	21,8	73,7	33,0	56,9	24,4	80,3	40,6	63,1	19,2	67,2	26,7	51,0
Malta	45,3	62,4	30,8	53,9	46,7	88,9	50,8	73,8	43,9	35,4	12,4	33,7
Netherlands	65,2	82,9	46,1	73,2	65,5	90,3	56,9	79,9	64,9	75,5	35,2	66,4
Austria	53,1	82,6	31,8	68,6	56,8	89,1	41,3	75,4	49,4	76,0	22,9	62,0
Poland	22,5	69,6	27,2	52,8	25,4	76,1	35,9	58,9	19,6	63,1	19,7	46,8
Portugal	36,1	80,8	50,5	67,5	40,5	86,7	58,1	73,4	31,4	74,9	43,7	61,7
Slovenia	34,1	83,8	30,7	66,0	38,1	86,4	43,1	70,4	29,8	81,1	18,5	61,3
Slovakia	25,6	75,3	30,3	57,7	28,1	81,4	47,8	64,6	23,1	69,2	15,6	50,9
Finland	40,5	81,7	52,7	68,4	40,4	84,4	52,8	70,3	40,6	79,0	52,7	66,5
Sweden	38,7	83,9	69,4	72,5	37,7	86,6	72,0	74,4	39,8	81,1	66,7	70,4
United Kingdom	54,0	81,2	56,9	71,7	55,3	87,8	66,0	77,6	52,5	74,8	48,1	65,9
Iceland	70,5	87,7	84,3	83,8	67,8	92,3	88,9	86,9	73,3	82,9	79,6	80,5
Norway	53,4	83,2	65,5	74,8	53,1	86,5	70,8	77,8	53,6	79,9	60,1	71,7
EU25	36,8	77,2	42,5	63,8	39,7	85,5	51,8	71,3	33,8	68,9	33,7	56,3
EU15	39,8	77,8	44,1	65,2	42,7	86,6	53,1	72,9	36,8	69,1	35,4	57,4
EU10	24,2	73,8	33,8	63,3	27,3	80,1	44,0	63,3	21,0	67,4	24,9	50,7

Source: Eurostat 2005, EU25, Iceland, Norway

Definition: The employment rate is calculated by dividing the number of persons aged 15 to 64 in employment by total population of the same age group. The indicator is based on the Labour force Survey.

Table A.2: Total unemployment rates by sex and age (in %)

	Total			Males			Females		
Countries	**younger than 25**	**older than 25**	**Total**	**younger than 25**	**older than 25**	**Total**	**younger than 25**	**older than 25**	**Total**
Belgium	21,5	7,1	8,4	21,0	6,2	7,6	22,1	8,1	9,5
Czech Republic	19,2	6,8	7,9	19,3	5,1	6,5	19,1	8,9	9,8
Denmark	8,6	4,2	4,8	8,6	3,8	4,4	8,6	4,7	5,3
Germany	15,0	8,6	9,5	15,6	7,8	8,9	14,3	9,6	10,3
Estonia	15,9	7,0	7,9	16,6	7,7	8,8	14,9	6,3	7,1
Greece	26,0	8,3	9,8	18,7	5,0	6,1	34,8	13,3	15,3
Spain	19,7	7,7	9,2	16,7	5,8	7,0	23,5	10,5	12,2
France	23,0	8,2	9,7	21,5	7,3	8,8	25,0	9,2	10,8
Ireland	8,6	3,5	4,3	9,1	3,8	4,6	7,9	3,1	4,0
Italy	24,0	6,2	7,7	21,5	4,8	6,2	27,4	8,4	10,1
Cyprus	13,2	4,3	5,3	12,2	3,4	4,3	14,3	5,5	6,5
Latvia	13,6	8,3	8,9	11,8	8,6	9,1	16,2	7,9	8,7
Lithuania	15,7	7,6	8,3	16,0	7,4	8,2	15,3	7,8	8,3
Luxembourg	13,8	3,8	4,5	11,8	2,9	3,5	16,4	5,0	5,9
Hungary	19,4	6,1	7,2	19,6	5,8	7,0	19,0	6,4	7,4
Malta	16,4	4,8	7,3	16,7	4,5	6,5	16,1	5,7	9,0
Netherlands	8,2	4,1	4,7	8,0	3,8	4,4	8,4	4,4	5,1
Austria	10,3	4,3	5,2	10,4	3,9	4,9	10,3	4,7	5,5
Poland	36,9	15,1	17,7	35,7	13,8	16,6	38,3	16,6	19,1
Portugal	16,0	6,6	7,6	13,6	5,8	6,7	19,1	7,5	8,7
Slovenia	15,9	5,4	6,5	14,5	5,0	6,1	17,8	5,8	7,0
Slovakia	30,1	14,4	16,3	31,0	13,3	15,5	28,8	15,7	17,2
Finland	20,1	6,8	8,4	20,6	6,5	8,2	19,5	7,0	8,6
Sweden[p]	22,6	5,8	7,8	23,0	5,9	7,9	22,1	5,7	7,7
United Kingdom	12,9	3,3	4,7	14,5	3,5	5,1	11,1	3,0	4,3
Norway	11,6	3,5	4,6	12,1	3,7	4,8	11,0	3,3	4,4
EU25	18,6	7,4	8,8	18,3	6,5	7,9	19,0	8,6	9,9
EU15	16,8	6,7	7,9	16,4	5,8	7,1	17,2	7,8	9,0
EU10	30,4	11,3	13,4	29,8	10,4	12,6	31,2	12,4	14,4

Source: Eurostat – Labour Force Survey 2005, EU25, Norway

Definition: Unemployment rates represent unemployed persons as a percentage of the labour force. The labour force is the total number of people employed or unemployed. Unemployed persons comprise persons aged 15-74 who were: a) without work during the reference week, b) currently available for work, c) active seeking for work.

[p] Provisional value

Table A.3: Long-term unemployment rate (in %)

	long-term unemployed persons % of the active population)			long-term unemployed persons (% of the unemployed persons)		
Countries	**Total**	**males**	**females**	**Total**	**males**	**females**
Belgium	4,4	3,8	5,0	51,7	50,7	52,8
Czech Republic	4,2	3,4	5,3	53,0	52,1	53,7
Denmark	1,1	1,1	1,2	23,4	24,1	22,8
Germany	5,0	4,7	5,4	53,0	53,0	53,0
Estonia	4,2	4,2	4,2	53,4	48,2	59,9
Greece	5,1	2,6	8,9	52,2	42,3	57,9
Spain	2,2	1,4	3,4	24,5	20,5	27,9
France	4,0	3,5	4,6	41,2	40,1	42,2
Ireland	1,5	1,9	0,8	33,4	41,3	21,0
Italy	3,9	2,9	5,2	49,9	47,7	51,9
Cyprus	1,2	0,8	1,8	23,5	19,3	27,0
Latvia	4,1	4,4	3,7	46,0	48,8	42,8
Lithuania	4,3	4,2	4,5	52,5	51,3	53,6
Luxembourg	1,2	1,2	1,2	26,4	33,8	20,5
Hungary	3,2	3,2	3,2	45,0	46,6	43,4
Malta	3,4	3,4	3,2	46,4	52,8	36,0
Netherlands	1,9	1,9	1,9	40,2	43,2	37,0
Austria	1,3	1,2	1,4	25,3	25,7	24,9
Poland	10,2	9,3	11,4	57,7	56,1	59,3
Portugal	3,7	3,2	4,2	48,2	47,4	48,8
Slovenia	3,1	2,9	3,3	47,3	48,4	46,3
Slovakia	11,7	11,2	12,3	71,9	72,3	71,5
Finland	2,2	2,4	1,9	25,8	29,0	22,6
Swedenp	1,2	1,4	1,0	15,8	18,0	13,3
United Kingdom	1,0	1,3	0,7	21,1	25,2	15,2
Iceland	0,3	0,3	0,3	11,2	9,8	12,9
Norway	0,9	0,9	0,8	18,7	19,7	17,5
EU25	3,9	3,5	4,5	45,0	44,5	45,5
EU15	3,3	2,9	3,7	41,3	41,0	41,7
EU10	7,6	7,1	8,3	57,0	56,1	58,0

Source: Eurostat 2005, EU25, Iceland, Norway (last update: Thu Oct 26 17:20:33 MEST 2006)

Definition: The long term unemployment rate is the share of unemployed persons since 12 months or more in the total number of active persons in the labour market. Active persons are those who are either employed or unemployed.

[p] Provisional value

Table A.4: Persons employed part-time (% of total employment)

% of Employees Working Part-time			
Countries	**Total**	**Males**	**Females**
Belgium	22,0	7,6	40,5
Czech Republic	4,9	2,1	8,6
Denmark	22,1	12,7	33,0
Germany	24,0	7,8	43,8
Estonia	7,5	4,9	10,6
Greece	5,0	2,3	9,3
Spain	12,4	4,5	24,2
France	17,2	5,7	30,7
Ireland	-	-	-
Italy	12,8	4,6	25,6
Cyprus	8,9	5,0	14,0
Latvia	8,3	6,3	10,4
Lithuania	7,1	5,1	9,1
Luxembourg	17,4	2,5	38,2
Hungary	4,1	2,7	5,8
Malta	9,6	4,5	21,1
Netherlands	46,1	22,6	75,1
Austria	21,1	6,1	39,3
Poland	10,8	8,0	14,3
Portugal	11,2	7,0	16,2
Slovenia	9,0	7,2	11,1
Slovakia	2,5	1,3	4,1
Finland	13,7	9,2	18,6
Sweden	24,7	11,5	39,6
United Kingdom	25,4	10,4	42,7
Iceland	22,2	8,7	37,5
Norway	28,2	13,8	44,2
EU25	18,4	7,4	32,4
EU15	20,3	7,7	36,3
EU10	7,9	5,5	10,9

Source: Eurostat 2005, EU25, Iceland, Norway (last update: Mon Aug 07 14:21:42 MEST 2006)

Definition: The distinction between full-time and part-time work is made on the basis of a spontaneous answer given by the respondent.

Table A.5: Distribution of employees according to employment contract and distribution of workers according to company size (in %)

Distribution of Employees According to Employment Contract and Distribution of Workers According to Company Size (%)		
	EU 10, Bulgaria, Romania	**EU 15**
Contract		
Indefinite contract	86	82
Fixed-term contract	11	10
Temporary agency contract	3	2
Apprenticeship contract	0	2
Other	1	4
Don't know	0	1
Company Size		
1 person	11	11
2-4 people	21	15
5-9 people	13	12
10-49 people	25	26
50-99 people	8	9
100-249 people	7	9
250-499 people	4	5
+ 500 people	7	10
Not specified	5	3

Source: European Foundation for the Improvement of Living and Working Conditions (2003): Working Conditions in the acceding and candidate countries. Luxembourg: Office for Official Publications of the European Communities. (pp.18-19)

Table A.6: Employed persons aged 15 and more by economic activity in the main job, 2005 (in %)

Employed persons aged 15 and more by economic activity in the main job, 2005 (in%)												
	Total				Men				Women			
	agricul-ture	industry	market service	non-marcet services	agricul-ture	industry	market service	non-marcet services	agricul-ture	industry	market service	non-marcet services
Belgium	2,0	24,7	36,7	36,5	2,5	35,0	38,1	24,4	1,5	11,4	35,0	52,2
Czech Republic	4,0	39,5	32,4	24,2	4,9	49,4	30,6	15,2	2,8	26,5	34,7	36,0
Denmark	3,2	23,9	36,3	36,7	4,6	33,9	39,6	21,9	1,6	12,4	32,4	53,6
Germany	2,4	29,8	36,6	31,2	2,9	41,2	35,1	20,9	1,7	16,1	38,5	43,7
Estonia	5,3	34,0	34,7	26,0	7,2	44,1	35,0	13,8	3,5	24,2	34,4	37,9
Greece	12,4	22,4	40,0	25,2	11,5	30,1	39,1	19,3	13,8	10,0	41,4	34,8
Spain	5,3	29,7	39,2	25,8	6,4	41,2	35,9	16,4	3,6	12,4	44,0	40,0
France	3,8	24,3	36,4	35,5	5,0	34,7	37,8	22,5	2,4	12,2	34,8	50,6
Ireland	5,9	27,6	39,3	27,1	9,3	39,2	36,1	15,4	1,3	11,9	43,8	43,0
Italy	4,2	30,8	38,7	26,3	4,8	39,3	38,1	17,8	3,3	17,4	39,7	39,6
Cyprus	4,7	24,0	42,7	28,5	5,7	34,3	40,5	19,5	3,5	10,6	45,6	40,3
Latvia	11,8	26,5	33,9	27,8	15,3	35,5	31,0	18,2	8,1	16,9	36,9	38,0
Lithuania	14,0	29,1	29,8	27,1	16,6	37,1	30,0	16,3	11,4	20,8	29,5	38,3
Luxembourg	1,7	17,3	41,9	39,1	2,2	25,6	42,0	30,2	(1,1)	5,8	41,7	51,4
Hungary	4,9	32,5	35,7	27,0	6,7	42,0	34,6	16,6	2,7	21,2	36,9	39,2
Malta	(2,0)	30,0	39,6	28,4	(2,7)	35,9	39,0	22,4	:	16,9	40,9	41,8
Netherlands	3,3	20,5	41,5	34,6	4,3	30,2	43,4	22,1	2,2	8,5	39,2	50,1
Austria	5,5	27,5	40,7	26,2	5,5	39,6	37,1	17,9	5,6	12,9	45,1	36,4
Poland	17,4	29,2	30,1	23,3	18,0	39,0	29,3	13,7	16,7	17,1	31,1	35,1
Portugal	11,8	30,6	32,2	25,4	10,9	40,8	33,0	15,2	12,9	18,6	31,2	37,3
Slovenia	9,1	37,1	30,9	23,0	9,1	46,9	29,9	14,1	9,1	25,4	32,0	33,5
Slovakia	4,8	38,8	30,9	25,5	6,4	49,6	28,7	15,3	2,6	25,3	33,7	38,4
Finland	4,8	25,8	36,4	33,0	6,6	38,4	37,7	17,4	2,9	12,3	35,0	49,7
Sweden	2,3	21,9	37,2	38,5	3,4	33,4	42,7	20,4	1,0	9,3	31,1	58,5
United Kingdom	1,4	22,1	42,0	34,4	1,9	33,2	43,6	21,3	0,7	9,4	40,2	49,6
Iceland	6,5	21,7	38,0	33,8	9,6	31,5	40,1	18,8	3,1	10,6	35,6	50,7
Norway	3,3	20,9	37,4	38,4	4,8	32,3	41,3	21,5	1,6	8,0	33,1	57,3
EU25	4,9	27,5	37,4	30,2	5,7	38,0	37,1	19,2	3,9	14,2	37,7	44,2
EU15	3,7	26,7	38,4	31,2	4,5	37,3	38,2	19,9	2,8	13,1	38,6	45,6

Source: Eurostat, EU-LFS, 2005

Notes: Small sample size may affect the reliability of some of the data (shown in brackets). The symbol "." is used when data is either not available or extremely unreliable.

The breakdown of employed persons by economic activity is based on the classification NACE Rev. 1.1 (sections A and B for agriculture, C to F for industry, G to K for market services, and L to Q for non market services).

Table A.7: Occupational distribution of the workforce (in %)

Occupational[a] Distribution of the Workforce											
	1	2	3	4	5	6	7	8	9	0	x
Austria	7,5	9,8	20,8	12,5	13,1	5,2	13,8	6,6	10,5	0,3	0,0
Belgium	11,5	20,7	11,9	15,9	10,8	2,1	10,1	7,6	8,4	0,8	0,2
Cyprus	2,7	13,0	12,6	13,9	16,0	3,2	15,6	5,7	16,4	1,0	0,0
Czech Republic	6,2	10,8	21,8	7,5	12,1	1,6	18,6	13,7	7,2	0,3	0,0
Denmark	7,2	15,5	21,0	0,2	9,9	15,1	2,3	10,8	6,5	10,9	0,6
Estonia	12,6	13,9	13,3	4,8	12,1	2,3	15,2	13,8	11,3	0,7	0,0
Finland	9,8	16,8	16,7	6,8	15,8	4,5	11,9	8,4	8,1	1,2	0,0
France[2]	1,3	7,6	12,5	17,8	12,5	12,3	4,4	12,5	9,8	9,4	0,1
Germany	6,8	14,4	20,5	11,9	12,1	1,9	15,2	7,1	7,9	0,7	1,4
Greece	10,3	13,9	7,8	11,4	14,0	12,0	15,4	7,4	6,5	0,0	1,4
Hungary	7,9	12,9	14,5	6,2	16,0	2,8	19,3	11,7	7,6	1,2	0,0
Ireland	15,8	16,9	6,2	12,9	16,1	0,7	14,2	7,9	9,0	0,4	0,0
Italy	8,9	9,8	19,6	11,9	10,4	2,4	16,6	9,3	9,7	1,4	0,0
Latvia	9,8	11,6	13,0	5,9	14,3	6,1	16,0	10,8	12,2	0,0	0,0
Lithuania	7,9	17,4	8,7	4,1	11,5	11,3	18,5	9,4	10,8	0,3	0,0
Luxembourg[3]											
Malta	8,6	11,0	14,5	11,8	15,0	1,5	13,8	10,4	12,3	1,3	0,0
Netherlands	9,7	18,9	17,7	12,7	13,8	1,4	9,4	5,9	9,1	0,5	1,0
Poland	6,1	15,1	11,0	6,9	11,2	15,9	15,9	9,7	7,5	0,6	0,0
Portugal	9,1	8,6	8,6	9,9	13,6	10,9	18,7	8,0	12,1	0,6	0,0
Slovakia	6,2	11,4	18,2	6,3	14,3	1,1	18,5	13,8	9,5	0,6	0,0
Slovenia	7,0	14,4	16,3	8,1	11,5	7,2	11,8	16,4	6,3	0,5	0,6
Spain	6,9	12,5	11,4	9,3	15,2	3,0	17,0	9,3	14,9	0,5	0,0
Sweden	4,8	19,4	19,5	9,1	19,0	2,0	10,6	10,1	5,0	0,3	0,1
United Kingdom[1]	14,7	12,5	13,6	12,5	15,6	11,4	11,3	7,5	0,0	0,6	0,2
EU25	7,9	12,7	15,5	11,5	13,2	6,6	13,3	9,0	8,0	1,9	0,4
EU15	8,1	12,5	15,7	12,3	13,3	6,1	12,7	8,7	8,0	2,1	0,5
EU10	6,7	13,7	13,9	6,8	12,4	9,4	17,0	11,2	8,1	0,6	0,0

Source: (BA) Labour Force Survey, http://laborsta.ilo.org/cgi-bin/brokerv8.exe; 2005

[1]6, 9 together, [2] 2004, [3] No data available

[a] ISCO-88, Major Groups:

1 Legislators, senior officials and managers, 2 Professionals, 3 Technicians and associated professionals, 4 Clerks, 5 Service workers and shop and market sales workers, 6 Skilled agricultural and fishery workers, 7 Craft and related trade workers, 8 Plant and machine operators and assemblers, 9 Elementary occupations, 0 Armed forces, x not classifiable by occupation

Table A.8: Inequality of income distribution (S20/80 ratio)

Inequality of Income Distribution S20/S80 Ratio		
countries	**2003**	**2004**
Austria	4	3,8
Belgium	4	4
Czech Republic	3,4	…
Cyprus	4,1	…
Denmark	3,6	3,4
Estonia	5,9	…
Finland	3,6	3,5
France	3,8	4,2
Germany	4,3	4,4
Greece	6,6	6
Hungary	3,3	…
Ireland	5,1	5
Italy	…	5,6
Latvia	6,1	…
Lithuania	4,5	…
Luxembourg	4	3,7
Malta	…	…
Netherlands	4	…
Poland	5	…
Portugal	7,4	7,2
Slovakia	5,4	5,8
Slovenia	3,1	…
Spain	5,1	5,1
Sweden	…	3,3
United Kingdom	5,3	…
Iceland	…	5,1
Norway	3,8	3,6
EU15	4,6	4,8
EU25	4,6	4,8
EU10	4,4	4,8

Source: Labour Force Survey 2004, EU25, Iceland, Norway (last update: Tue Feb 09 13:08:20 MET 2006)

Definition of S20/S80 ratio: The ratio of total income received by the 20% of the population with the highest income (top quintile) to that received by the 20% of the population with the lowest income (lowest quintile). Income must be understood as equivalised disposable income.

Table A.9: Population having completed at least upper secondary education (25-64 years, in %)

Population having completed at least upper secondary education (25-64 years)			
countries	**Total**	**males**	**females**
Austria	80,0	85,0	75,0
Belgium	65,5	65,8	65,1
Cyprus	65,3	67,5	63,2
Czech Republic	89,9	93,6	86,2
Denmark	81,1	82,4	79,8
Estonia	89,1	87,0	91,0
Finland	79,1	77,1	81,1
France	66,4	68,2	64,6
Germany	83,2	86,6	79,8
Greece	59,7	60,8	58,5
Hungary	76,1	80,0	72,3
Ireland	64,6	61,6	67,7
Italy	50,3	50,0	50,5
Latvia	83,6	80,8	86,2
Lithuania	87,1	86,2	87,9
Luxembourg	65,9	70,0	61,7
Malta	26,2	32,5	19,9
Netherlands	71,7	75,1	68,3
Poland	84,6	85,7	83,5
Portugal	26,2	24,1	28,3
Slovakia	87,6	90,8	84,6
Slovenia	80,5	82,9	78,0
Spain	48,4	48,3	48,5
Sweden	83,4	81,5	85,4
United Kingdom	71,2	75,5	66,8
Iceland	63,6	68,2	58,9
Norway	88,4	88,7	88,2
EU25	68,9	70,7	67,2
EU15	66,0	67,9	64,2

Source: Eurostat – Labour Force Survey 2005, EU25, Iceland, Norway

Annex B Further readings

Further readings: Chapter 2 – The burden of cardiovascular diseases and mental ill health on work

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Working life can act as a risk factor for the health of employees and their families. However, irrespective of the cause, private companies and public services are affected by diseases through employee absenteeism or reduced productivity. It is this interrelation that makes workplace health such an important element of modern public health policies. Workplace health is a public health issue as well. This report emphasises that sustainable health promotion and prevention calls for collaboration across different professions and policy fields.

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