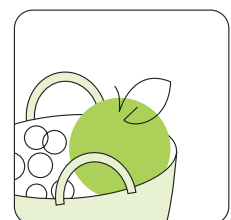
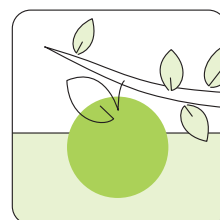
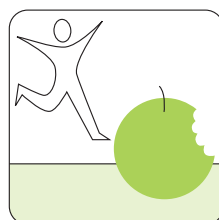
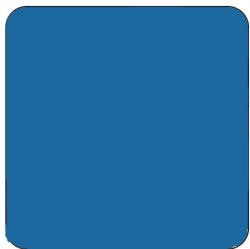
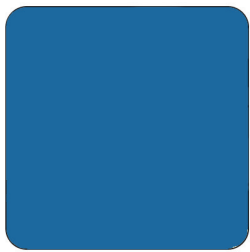


# Health of People of Working Age

## Summary Report



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# Health of People of Working Age

Summary Report\*

March 2011

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*\*Please see ISBN 978-92-79-18526-7 for a full report.*



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# 1 Introduction

This report summarises the aims, key findings, conclusions and recommendations of the state of the art review on health of people of working age commissioned by the European Commission (EC), Health and Consumers Directorate-General (DG SANCO) (see technical report and its annexes). The assignment was conducted by the Consortium ECORYS Nederland BV, TNO and Erasmus MC, University Medical Centre during June 2009-March 2011.

## *The need for a healthy workforce*

During the last century, the combined effects of improvements in living and working conditions and advances in medicine and health care contributed to substantial improvements in health and life expectancy in the EU. In 2007 in the EU-27, the life expectancy of a boy at birth was 76.1 years and of a newborn girl 82.2 years. Longer life expectancies coupled with falling birth rates and rising health and social protection costs presents a big challenge to most EU Member States as falling numbers of people in work are coupled with rising numbers of those in retirement. The need to increase work participation is a key part of meeting this challenge. However despite major efforts in the previous years, Europe's employment rates – at 69% on average for those aged 20-64 – are still significantly lower compared to other regions in the world.

Health has a big impact on work. It is well-established that poor health may have a profound impact on withdrawal from the labour force due to disability, early retirement, and unemployment, especially among workers aged 50 years and older. Poor health is also an important barrier in (re-)gaining access to the labour market. Increasing the healthy life-span spent in work could contribute to addressing the age-related expenditure problem as average experience and productivity levels could rise and longer working lives could compensate for age related increases in, health care utilisation. At the same time a healthy retirement can stimulate demand, especially for services that are an increasingly important sector of the European economy. This means that a healthy workforce contributes to future societal productivity and growth.

Promoting the health of people of working age and enabling people to work longer in good health requires interventions that address the determinants of health. It also requires programmes that facilitate workers with a disease or chronic health problem to be able to continue their job.

## *Addressing the health of the work force*

Any action on health has to take into account the fact that health is not equally distributed in society. Almost all diseases affecting work participation are more common among people with lower levels of education, income, and occupational status. Furthermore a healthy workforce is determined by many factors which influence health some of which

start in childhood, others which are related directly to work but the majority of which lie outside of work.

Health is influenced by a broad range of factors, which include individual behaviour and lifestyle, the health care system, social and economic factors, the environment, and biological factors. Policies and actions outside the health care system have a significant impact on public health.

The world of work, and the way that working life is organised in our societies today, is a major determinant of health. Individual health practices are shaped by our workplace cultures and values. The increase in mental health disorders can only be understood in the context of increasing psychosocial stressors and strains at the workplaces. Smoking and alcohol consumption are also examples of behavioural factors whose lie outside work but which can be nevertheless deeply rooted in daily working life.

Workplace health is therefore not confined within the factory or office walls. The workplace has major impacts on the health of families and communities.

#### *Purpose and specific aims of the review*

This review aims to provide a state of the art picture of the health of EU working age population and of some of the activities which are relevant to improving the health of workers and enabling more people to stay in work for longer. It aims to provide a “tool” with useful facts and promising activities which can be used in and adapted to different national/regional or local contexts to further achieve and stimulate good health and well-being of the working age population.

The specific aims of the review are:

- a state of the art review of the health of the working age population (i.e., age group of 16-64 years<sup>1</sup>) in the EU Member States – other countries which are part of the European Economic Area or are accession countries have also been included in places.
- a review and evaluation of policies and initiatives aiming to address workforce health;
- a review of effectiveness, and cost-effectiveness of initiatives (e.g., workplace health and safety initiatives, initiatives to help retain people in work who have chronic illness, workplace health promotion initiatives, initiatives to promote rehabilitation and reintegration into work following a serious health event, initiatives to support people who are on long-term sick leave to get back into work; and other initiatives).

---

<sup>1</sup> The working age population is usually defined as the age group from 16 to 64 years. However, in some statistics only figures regarding the age group of 15-64 is available.



## 2 Methodology

### *Focus on a selection of diseases*

It is not possible to comprehensively describe the health status of the working age population taking into account all diseases within the time and budget constraints of this review. Therefore, we created a short list and a long list of the most important health problems that we reviewed. To select diseases for the short list and the long list we applied three criteria in order of importance: (1) the relative burden of disease in the working age population, (2) the relation to work, and (3) the potential for improvement.

The following diseases were selected for the short and long list:

- **Cardiovascular diseases;**
- **Unipolar depressive disorders;**
- **Musculoskeletal diseases;**
- **Accidental injuries at work;**
- Respiratory disease;
- Alcohol use disorders;
- Hearing loss;
- Lung cancer;
- Road accidents.

Diseases printed in **bold** are the selected diseases for the short list, which were examined more extensively compared to the other selected diseases.

### *Geographical focus*

In our review we especially focused on the EU-27 plus in places European Economic Area Countries Norway, Iceland, Liechtenstein and accession countries - Croatia, Former Yugoslav Republic of Macedonia, and Turkey. When relevant, we also included information from other countries (e.g., USA, Canada, and Australia).

### *Assessment of the state of the health of the EU working age population*

To produce an overview of the health status of the EU working age population we reviewed relevant literature, consulted databases and performed analyses on available European databases. Suitable databases were identified and secondary analyses were performed to complement the literature review. We used data from the following databases: European Union Statistics on Income and Living Conditions (EU-SILC), EU Labour Force Survey including the ad hoc modules of 1999, 2002 and 2007 (LFS), European Working Conditions Survey (EWCS), European Occupational Diseases Statistics (EODS), United Nations Economic Commission for Europe (UNECE), Community Road Accident Database (CARE); European Injury Database (IDB), European Statistics on Accidents at Work (ESAW), Eurostat Mortality database, WHO Burden of Disease study, Survey on Health and Ageing in Europe (SHARE study),

European Community Household Panel (ECHP), and the Erasmus Productivity Loss at Work database (EPLW).

*Review and evaluation of policies and initiatives aiming to address workforce health.*

In line with our terms of reference we specifically reviewed the following categories of policies and initiatives: workplace health promotion; workplace health and safety initiatives; initiatives to help retain people in work who have chronic illness; initiatives to support people who are on long term sick leave to get back into work; initiatives to promote rehabilitation and reintegration into work following a serious health event and other policies and initiatives (e.g., public health interventions).

On the basis of both peer-reviewed scientific and grey literature, we provide a general overview of the main policies and initiatives to address workforce health in the EU. This overview is not exhaustive and is meant to provide a general idea of what the status currently is. Illustrative country-specific examples provide more details. In addition, we provide –when possible– specific information on the (cost-)effectiveness of these policies and initiatives in general and for our selection of diseases specifically.

The analysis of the scientific and grey literature served as input to the development of a web-based survey to collect additional information regarding the awareness of stakeholders with regard to selected policies and initiatives to address work-related health; and the direct suitability and utility of these policies and initiatives; and an identification of best practices. It was sent to 475 representatives of several Directorates of the European Commission as well as to individual Commission Officials and representatives of the European Parliament, including the Employment and Social Affairs Committee of the European Parliament; representatives of national health ministries; representatives of other ministries involved in health-related work (e.g., labour departments, economic affairs, finance); representatives of companies from different economic sectors; and national focal points of OSHA and presenters at relevant European conferences such as the conference on promoting workplace health of the European Network for Workplace Health Promotion. In total, we received 38 valid responses.

*Peer review*

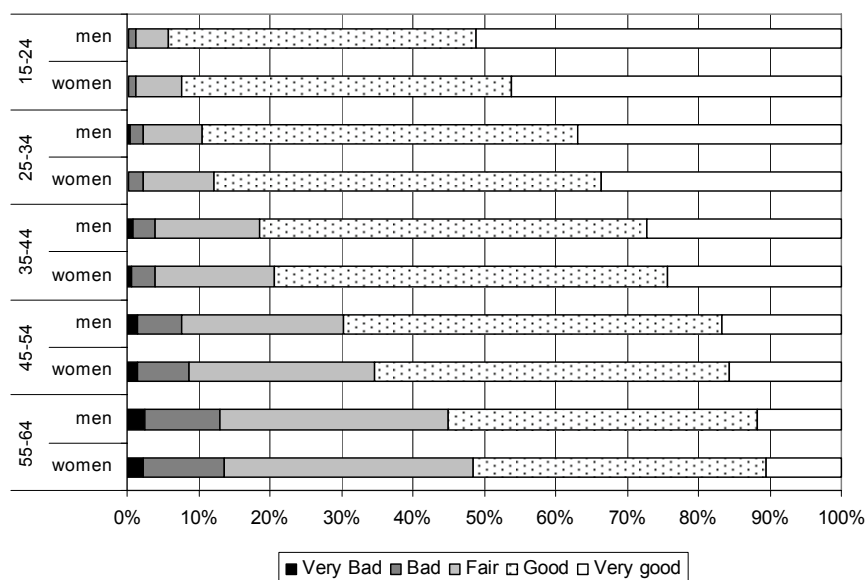
We took into account comments of six peer reviewers as well as those of Commission officials. In addition, an internal quality check has been undertaken by a senior expert in the field of disability policy and return to work policy.

### 3 Health status of the EU working age population

The majority (77%) of the EU working age population (15-64 years), report that they are in good or in very good health. Of the rest, 18% regard their health as fair, 5% report bad health, and 1% very bad health. Nearly 1 in 4 indicate that they suffer from a longstanding problem which restricts their daily activities.

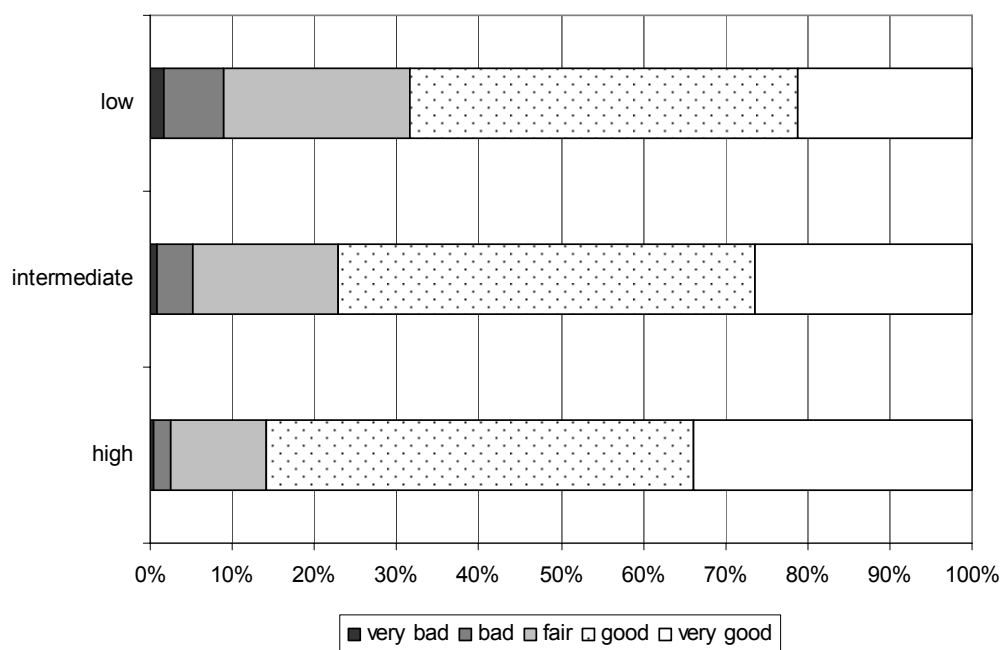
Older people more often report bad health and longstanding health problems than younger people. In general, women slightly more often perceive their health as bad compared to men (see Figure 3.1), and they report slightly more often a longstanding health problem. High educated people more often perceived their health as good or very good compared to low or intermediate educated people (see Figure 3.2), and they reported less health problems.

Figure 3.1 Self-perceived health in people aged 15-64 year in the EU-27



Source: EU-SILC 2008, Eurostat.

Figure 3.2 Self-perceived health in people aged 15-64 year in the EU-27 by educational level

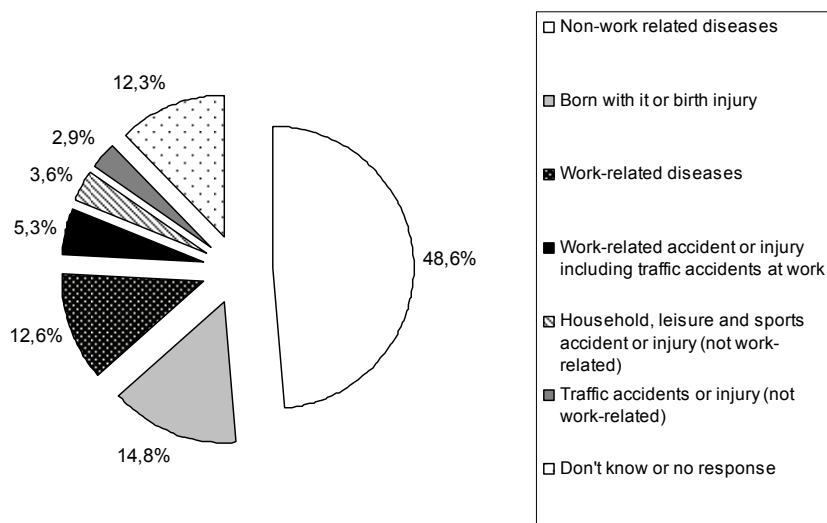


Source: EU-SILC 2008, Eurostat.

The main causes of longstanding health problems in the working age population are chronic diseases, while a much smaller part is attributable to congenital anomalies or accidental injuries (see Figure 3.3). The main diseases that caused long-standing health are musculoskeletal diseases, cardiovascular diseases, respiratory diseases, and mental, nervous or emotional problems (see Figure 3.4). European statistics on disability benefits show that, apart from musculoskeletal diseases, mental health problems cause a substantial part of disability, in particular among young people. One-third of the benefits are related to a mental condition, rising to as high as 40-45% in some countries.

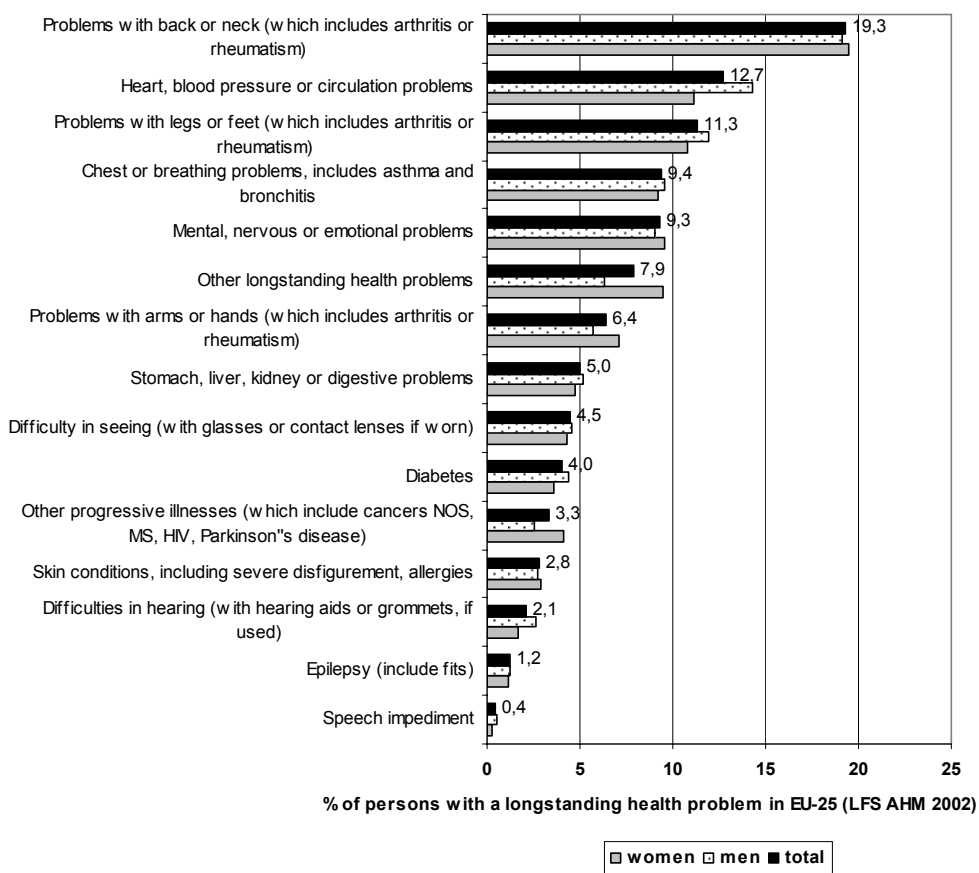
Work-related health problems are reported most often in sectors such as ‘agriculture, hunting and forestry’ and ‘mining and quarrying’, and more by low and intermediate educated people than by high educated people. Low or intermediate educated people more often identify musculoskeletal problems as the most serious work-related health problem, while high educated people more often reported ‘stress, anxiety or depression’.

Figure 3.3 Distribution of cause of longstanding health problems in the working age population (15-64) in the EU-25 in 2002



Source: LFS AHM 2002, Eurostat.

Figure 3.4 Main health problem among people aged 15-64 year with a health problem in the EU-25 i



Source: LFS AHM 2002, Eurostat.

### *Non-fatal accidental injuries*

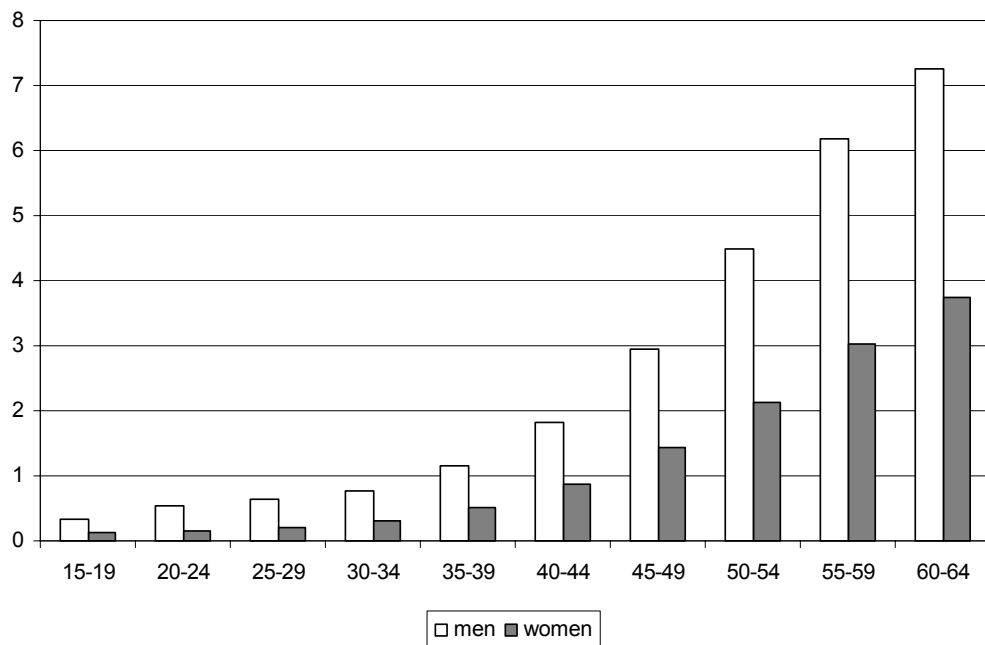
Accidents are an important contributor to poor health in the working age population. In 2007, 3.2% of the workers had an accident at work. They were reported most often in the construction sector. People in the older age groups were less likely to be involved in an accident resulting in injury, but injuries were more often fatal. Men and low and intermediate educated people more often reported accidental injuries at work than women and high educated people.

### *Mortality*

Deaths of people of working age are a major problem across the EU. Around 900,000 people of working age die each year representing about 19% of all deaths. There are very big differences between countries in the size of the problem. In some countries nearly half of all males die before the age of 65. Many of the deaths which occur in working aged people are avoidable.

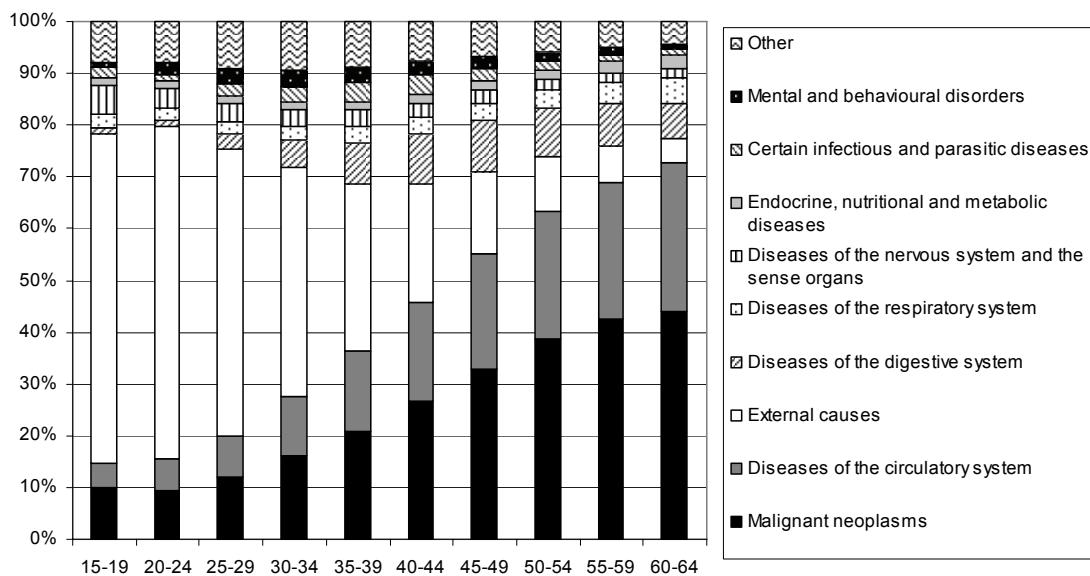
Premature mortality before the age of 65 is about twice as frequent in men as in women (see Figure 3.5) and higher among low educated people compared to intermediate and high educated people. In 2007, the most important causes of death in Europe in people aged 15 to 64 years were cancer, cardiovascular diseases, and external causes of death, most notably fatal accidents. These three causes of death represent almost three quarter of the premature mortality in the working age population. Cancer was the cause of death in 36% of people in the working age population, diseases of the circulatory system in 24% and external causes in 14%. The importance of the causes of death changes with age. In people aged 15 to 29 years, 55% to 64% of the deaths are from external causes. With age, the proportion of people dying from cancer and cardiovascular diseases strongly increases. In people aged 60-64, 72% dies from cancer or cardiovascular diseases (see Figure 3.6).

Figure 3.5 Premature mortality among people aged 15-64 in the EU-27 as a percentage of total number of deaths (2007 or most recent data)



Source: Eurostat Mortality (hlth\_cd\_annr)

Figure 3.6 Main causes of death as a percentage of total deaths by 5-year age group (2007 or most recent data)



Source: Eurostat Mortality (hlth\_cd\_asdr)

### Trends

The health of the working age population is fairly consistent over the past few years. Although a slight decrease has occurred in the percentage of people reporting bad or very bad health, the percentage of people with a longstanding health problem has remained more or less the same over the period between 2005 and 2008. One survey showed that

the proportion of workers with a work-related health problem increased between 1999 and 2007 in nine European countries, while the occurrence of accidental injuries decreased. It should be noted that the increase in work-related health problems might partly be due to increased awareness of work-related health problems. Disability benefits show a certain trend towards a higher contribution of mental health problems to the total sum of disability benefits.

According to Eurostat's Labour Force Survey the age of the European workforce is increasing and the proportion of women is higher. An older workforce may imply more health problems in the working age population in the future. The consequences of higher work participation of women is unclear, since differences between men and women with regard to health can be attributed for a large part to their working conditions and those might change as well if women participate more in the workforce.

### *Work and health*

The relationship between work and health is complex. In general, working persons have a better health status than non-working persons. This phenomenon is called the "healthy worker effect". Morbidity may increase the likelihood of withdrawal from the labour force. Health problems may also be an important barrier in (re)gaining access to the labour market. In addition, unemployment and loss of employment may adversely affect health or may worsen health in persons with health problems. On the other hand, work may adversely affect health. Work-related factors may be the only cause of the health problem, but it is much more common that work-related factors increase the risk of a health problem together with other factors. Furthermore, work-related factors may aggravate an existing health problem.

### *Summary health measures - DALYs*

Some diseases cause early death but little disability, whereas other health problems do not cause death but do cause disability. As a consequence, it is difficult to compare the importance of different health problems. To overcome this problem summary health measures have been developed to combine the information on morbidity, the disability involved, and mortality. DALYs are widely used to compare the burden of disease of different health conditions. According to DALYs mental health problems, in particular unipolar depressive disorders, and cardiovascular diseases - in particular ischemic heart disease - contribute largely to the total burden of disease of all age groups. However, mental health problems are more typical for the working age population than cardiovascular diseases. Musculoskeletal diseases do not contribute largely to the total burden of disease, but this is mainly due to the low mortality rate for this type of disease. Accidental injuries also contribute highly to the burden of disease, in particular in the working age population.



## 4 The impact of poor health on work

In Europe each year around 10% of the people that were previously employed left their job mainly for health reasons. Health reasons are more important as a reason for leaving work amongst men and in people in older age groups. In the EU Labour Force Survey amongst all people of working age, 4% indicated that they were out of the labour market and not searching for employment due to their health. Among those not searching for employment, 14% indicated that health was the main reason. Health reasons are more often mentioned as the main reason for not searching employment in the older age groups (see Table 4.1).

Table 4.1 Percentage of people not searching employment answering the main reason is 'Own illness or disability'

Category	Reasons for not searching employment		
	Employed, found a job, or searching a job	Not searching for health reasons	Not searching for other reasons
Men	81%	4%	16%
Women	68%	4%	29%
15-24	49%	1%	50%
25-34	86%	2%	12%
35-44	89%	2%	9%
45-54	85%	5%	10%
55-64	52%	9%	39%
Total	74%	4%	22%

Source: EU-LFS 2009, Eurostat

### *Poor health and exit from the workforce*

Quantitative analysis on the role of poor health in future exit among workers aged over 50 years in 11 EU countries during two year follow-up (database Survey on Health and Ageing in Europe (SHARE)) showed that the fraction of risk attributable to poor health varied between 9% for retirement, 27% for unemployment, and 61% for work incapacity. Compared to other health measures, self-perceived health was strongest related to future exit. In the analysis of another European survey (ECHP database) similar results were found, whereby self-perceived poor health was a risk factor for transition to unemployment (OR 1.43), retirement (OR 2.30), and taking care of household (OR 1.35). The population attributable fractions of a less-than-good self-perceived health for transition into unemployment, retirement, and taking care of household were 14%, 46%,

and 12%, respectively. Due to the increasing prevalence of less than good health with age, the attributable fractions of poor health increased with age.

#### *Poor health and productivity loss at work*

Depression and musculoskeletal diseases, as well as unhealthy lifestyle factors (e.g., obesity and physical inactivity) are associated with reduced on-the-job productivity. The average percentage of productivity loss at work among workers with cardiovascular diseases (heart disease or hypertension) is estimated as 7%, compared with 15% on average among workers with depression, and 34% among workers with upper extremity disorders.

Quantitative analyses among Dutch workers showed that productivity loss at work was most profound among workers with depression (58%), whereas the percentage of productivity loss attributable to the poor health condition was highest for workers with musculoskeletal diseases (6%).

#### *Economic consequences*

It can be concluded that poor health has a considerable influence on the ability to work, most profound for work incapacity. The consequences of poor health differ per diagnostic group in frequency and amount of productivity loss at work. The negative effects of poor health on work have also profound economic consequences. On average, OECD countries spend 1.2% of GDP on disability benefits alone. This figure reaches 2% when including sickness benefits. For example, in the United Kingdom it was estimated that the annual economic costs of sickness absence and reduced work participation due to poor health amounted to over annually £100 billion among 40 million persons in the working age. The Health and Safety Executive in the United Kingdom has estimated the total cost to employers in Britain of workplace injuries and work-related poor health. The total costs were estimated at £2.9 billion to £3.2 billion per year. This estimate does not take into account societal costs due to reduced work participation.

## 5 Risk factors of the main diseases/accidental injuries in the working age population

### *Cardiovascular diseases*

Cardiovascular diseases are the second most important cause of death after cancer in the working age population. About one in four deaths of all men and about one in five deaths of all women before the age of 65 are from cardiovascular diseases. Overall, mortality rates in relation to cardiovascular diseases are higher in Central and Eastern Europe.

Cardiovascular diseases are strongly associated with systolic and diastolic blood pressure, blood cholesterol levels, diabetes, and obesity and overweight. Mental ill health is also associated with cardiovascular diseases. Many of these risk factors are inter-related. For example obesity is a major risk factor of high blood pressure, blood cholesterol levels, and diabetes.

High blood pressure, elevated blood cholesterol levels, obesity, and diabetes are mostly caused by an interaction of an unhealthy lifestyle and a genetic predisposition. In addition, also work stress is related to these risk factors. Smoking is a strong risk factor, and is especially important in premature death. Moderate alcohol consumption reduces the risk of cardiovascular diseases, whereas high levels of intake increases the risk. A diet which is high in fat, salt, and free sugars, and low in complex carbohydrates, fruit, and vegetables, and lack of physical activity increase the risk.

In conclusion, the behavioural component makes cardiovascular diseases eminently preventable; particularly lifestyle interventions may have potential for change. In addition, work stress is a risk factor for cardiovascular diseases. Therefore, workplace interventions aimed to reduce stress have also potential to prevent cardiovascular diseases.

### *Unipolar depressive disorders*

Unipolar depression (clinical depression) is a mental disorder characterized by an all-encompassing low mood accompanied by low self-esteem, and loss of interest or pleasure in normally enjoyable activities. The peak age of a first-onset major depressive episode is between 25 and 45 years of age. Relapse of depression is frequent up to 10 years after first presentation. The lifetime risk of depression has been estimated to be 12% to 16%.

Depression and mental disorders are in general non-fatal, but result in substantial disability. The World Health Organization identified depression as the leading cause of moderate or severe disability worldwide in persons aged 0-59. As mentioned before, statistics on disability benefits show a certain trend towards a higher contribution of mental health problems to the total sum of disability benefits. Disability has consequences

for work participation. Several studies show that a poor mental health (often characterized by depressive symptoms) increases the risk of unemployment. Moreover, among those still employed the average percentage of productivity loss was estimated to be 15%.

Various individual risk factors of depression have been identified. Women are more often diagnosed with depression than men. Low socio-economic status has consistently been associated with depression. In this association, a variety of mechanisms may play a role, including employment opportunities, debt or financial strain, alcohol misuse, and living conditions. Other individual risk factors for depression are health status (suffering from a chronic disease) and negative life events.

Work-related factors may also contribute to the occurrence of depression, in particular psychosocial work characteristics. Putting in high effort at work and receiving low reward has been associated with depression. In addition, low decision authority, high job demands, low social support at work, and job insecurity have been related with a moderate risk of common mental disorders, i.e. depressive and anxiety disorders. Bullying strongly increases the risk of depression as well.

Some risk factors of depression, most notably psychosocial factors at work, may be amendable to change, and hence, offer opportunities for the prevention of depression.

### *Musculoskeletal diseases*

In 2002, musculoskeletal diseases were mentioned most often as the main health problem by persons in the working age population. Back and neck problems occur more often than problems with legs, feet, arms or hands. Musculoskeletal diseases are often episodic, and recurrence frequently occurs.

Musculoskeletal diseases have an unfavourable effect on work participation. Several studies show that musculoskeletal diseases increase the risk of work disability and of productivity loss at work. Analyses among Dutch workers show that the percentage of productivity loss attributable to musculoskeletal diseases is relatively high compared to other diseases.

Several individual risk factors of back, neck and upper extremity symptoms have been identified. Obesity increases the risk of low back pain, and weight-related factors might also influence upper extremity symptoms. Stress, anxiety, emotions, and pain behaviour have been related with the occurrence of low back pain, and may also play an important role in acute low back pain becoming longstanding.

Exposure to occupational risk factors plays an important role in the aetiology of musculoskeletal diseases. Occupation has been estimated to explain 34% of the low back pain in men and 22% of the low back pain in women in the general population in Europe. Physically heavy work, such as frequent manual material handling and bending and twisting at work increases the risk of low back pain. Repetitive movements, especially in combination with forceful exertions, are risk factors of neck and upper extremity symptoms. Frequent mouse usage is a risk factor for hand/arm symptoms, and precision work for neck symptoms. In addition to physical risk factors at work, psychosocial factors play a role. High job demands, low job satisfaction, low social support and low job

control have been linked to a higher risk of musculoskeletal diseases, but not all study results are consistent.

In conclusion, musculoskeletal health problems of the back, neck, and upper extremity often occur in the working age population, and interventions targeting physical and psychosocial risk factors at work may offer opportunities for prevention.

#### *Accidental injuries at work*

Accidental injuries at work are non-intentional accidents that occur at work or in the course of work, and result in fatal or non-fatal injuries. The contribution of accidents at work to the total burden of disease in the working age population is unknown. However, accidental injuries affect the working age population relatively often. In 2007, 3.2% of the workers in the EU27 reported an accidental injury in the past 12 months. This corresponds to 6.9 million persons in the EU27. In addition, approximately 6.000 fatal accidents are recorded per year in the EU27. The incidence rate of fatal and non-fatal accidents decreased in the EU15 between 1995 and 2005, with respectively 42% and 27%. Due to a lack of studies, little is known on the consequences of work-related accidental injuries for work participation.

Accidental injuries are related with health conditions. Impaired hearing, neurotic illness, diabetes, epilepsy, and the use of sedating medication are moderately associated with injuries at work. Also, several work characteristics increase the risk of accidental injuries. Most accidents - fatal as well as non-fatal - occur in the construction and manufacturing sectors. The most (non-fatal) accidents in women occur in the health and social work sector, as well as in the sector hotels and restaurants. Manual work, atypical working hours, shift work, and being less than five years in the job are related with accidental injuries. Hence, work-related factors offer opportunities for further prevention of accidental injuries at work.

#### *Other important diseases and injuries*

##### **Respiratory diseases**

- Of the persons in the working age population with a health problem, 9.4% identified 'chest or breathing problems including asthma and bronchitis' as their most serious health problem;
- Respiratory diseases are a relative important cause of death in the older age groups of the working age population;
- Important risk factors for respiratory diseases are poor air quality and smoking.

##### **Alcohol use disorders**

- Alcohol can affect almost every organ of the body and is causally related to more than 60 different disorders and diseases with short and long-term consequences, including lung disease, breast cancer and mental and behavioural disorders;
- Harmful alcohol use accounts for 12% of all male poor health and premature death (2% for women);
- Alcohol use disorders are associated with stress, poverty, lower levels of education and lower socio-economic status, early life events, the availability of alcohol, product quality, attitude towards drinking and drunkenness, and peer pressure.

**Hearing loss**

- Noise-induced hearing loss is one of the most prominent recognized occupational diseases in the EU;
- Hearing loss due to work is reported most often in the manufacturing, construction and transport sectors.

**Lung cancer**

- Lung cancer is the most common cancer and most common cause of cancer death in men;
- Smoking is the primary cause of lung cancer;
- Occupational causes of lung cancer includes exposure to arsenic, asbestos, chromates, chloromethyl ethers, nickel, tar, soot, polycyclic aromatic hydrocarbons, radon progeny, and other agents.

**Road accidents**

- In the age category 15-29, road traffic accidents are the leading cause of death;
- About 25% of all road fatalities are alcohol-related, while fatigue is a major factor as well (10-20%);
- Other risk factors are high speed driving, disregard for the use of seat-belts, child car restraints and helmets (for riders of motorized two-wheelers) and road-related factors (such as poor road design, roadway environment and visibility), and the use of mobile phones.

## 6 Policies and initiatives aiming to address workforce health

### *Workplace health promotion*

Workplace health promotion focuses on the promotion of workers health and general wellbeing and goes further than merely legislation on ensuring health and safety. It includes the active pursuit of activities that help employees to improve their own general health and wellbeing.

At national level, workplace health promotion has become increasingly important. In many Member States, Occupational Safety and Health (OSH) legislation and policies are slowly expanding to include health promotion alongside health and safety. Our survey results indicate that national and regional policies of workplace health promotion are particularly focused on alcohol intake, followed by mental health and musculoskeletal diseases.

One example of national legislation in the field of workplace health promotion is the banning of smoking in public and workplaces. Another example is the increased focus of national bodies in the field of health and safety to stimulate and disseminate workplace health promotion initiatives. These initiatives mainly offer support and information to employers to tackle workplace health promotion in their specific work environment.

Workplace health promotion initiatives are being developed particularly at company level. Sometimes these initiatives take a holistic approach including employee involvement to tackle general wellbeing, include health check-ups or they focus on a specific health issue. Health issues that are most often tackled within the workplace through workplace health promotion are smoking, alcohol abuse, promotion of healthy food and physical activity and ensuring mental health.

There is some evidence that workplace health promotion programs are effective but overall there has been a lack of good quality of research in this area. Work health promotion programmes have beneficial effects for the employer and employee in the shape of reduced accidents and injuries, increased employee satisfaction, reduced sickness absenteeism, reduced work disability, reduced premature retirement, improved company profile, increased turnover, and increased productivity. On the societal level it reduces medical costs. The impact on health outcomes is, however, inconclusive. Also, the evidence base for cost-effectiveness of workplace health promotion and prevention focusing on work performance is very limited.

Promising effective workplace health promotion policies and initiatives with respect to tackling certain health issues include:

- Workplace health promotion programmes tackling smoking – including smoking bans – lead to reduced smoking, but outcomes with respect to reduced absenteeism, productivity and incapacity to work and subjective outcomes are inconclusive;
- Interventions that have potential to produce beneficial results are brief interventions, life-style checks, psychosocial skills training, peer referral and a method called constructive confrontation strategy involving the employee’s supervisor;
- Evidence on the effectiveness of workplace health promotion programmes to tackle alcohol abuse is weak;
- Workplace health promotion programmes in the area of both nutrition and physical activity are effective, although the long-term effects remain unclear. Targeting both individual risk factors and the organisational environment and multi-component interventions (including both nutrition and physical activity) have shown to be more successful than tackling either element in isolation;
- Targeting mental health problems at the worksite through stress management training have a modest or short-term positive effect. Increasing employee control showed mixed effects. Cognitive behavioural interventions seem to be more effective for workers with common mental health problems. In addition, there is evidence that a combination of psychological and physical activity interventions will be most effective for tackling mental health problems at work. Mental health problems due to shift work can be addressed by designing the shift system in an optimal way for employees.

The EU has provided some support for workplace health promotion including through the European Network for Workplace Health Promotion (ENWHP) that was set up in 1996. The ENWHP has carried out a number of European initiatives which have established workplace health promotion as a field of action for public health at European and national level. The Luxembourg Declaration on Workplace Health Promotion (2007) has been adopted by all members of the ENWHP and outlines a set of aims for the practice of workplace health promotion.

The European Agency for Safety and Health at Work is an important EU agency in relation to workplace health promotion. It helps to meet the information needs in the field of occupational safety and health (OSH) and offers information to employees and employers with regard to how to best tackle workplace health promotion.

### *Workplace health and safety*

There is a highly developed system of workplace health and safety legislation and activities in the EU based on EU law. In addition the International Labour Organisation (ILO) plays an important role in health and safety of the working age population through the establishment of international standards on labour and social matters.

At EU level, the OSH Framework Directive (89/391/ECC guarantees minimum safety and health requirements throughout Europe while EU Member States are allowed to maintain or establish more stringent measures. In addition, the EC issues European guidelines which are non-binding documents aiming to facilitate the implementation of European directives.



EU legislation has contributed to instilling a culture of prevention throughout the EU and led to the rationalisation and simplification of national legislative systems. The impact has been bigger in those EU Member States who had either less developed legislation or legislation based on corrective principles compared to Member States that had a preventive approach to fight occupational risks. The shift of the EU Directives to move away from a technology-driven approach for accident prevention towards a policy of OSH that would be much more focused on the person's behaviour and organisational structures is recognised as having the biggest impact in the EU Member States.

The Community Strategy on Safety and Health at Work (COM/2007/0062 final) forms the political framework of the European safety and health policy for 2007-2012. It takes a holistic approach towards OSH by combining legislation, regulation with a variety of other instruments, such as social dialogue, good practice, awareness raising, corporate social responsibility, economic incentives and mainstreaming. The Strategy aims to achieve a 25% reduction of occupational accidents and diseases in the EU through a series of actions at EU and national levels in different areas. European social partners are consulted at various stages in the European decision-making process in the field of health and safety at work and have also adopted several autonomous agreements whereby EU social partners have taken up the responsibility for implementing measures at national, sectoral and enterprise level.

National policies of the EU Member States regarding safety and health are primarily based on the implementation of EU legislation and policies. Each EU Member State has developed a national strategy in OSH with regard to the EU Community Strategy on Safety and Health at Work. The national strategies have the aim to provide a clearer focus on the overall national direction and to set OSH priorities.

Throughout the EU, national and regional agencies set -beside legislation- various strategies and guidelines for interventions in the field of OSH. These vary from country to country depending on factors such as the regulatory settings in health and safety and industrial relations models. A literature review of good practices indicates that the formulation and dissemination of strategies in the field of health and safety by both national and local authorities to those who can intervene in the workplace (particularly the employer) is an effective intervention to tackle occupational accidents. Other examples of national initiatives are benchmarking, campaigns and the offering of financial incentives.

As with workplace health promotion the vast majority of existing workplace health and safety initiatives is carried out at company level. These initiatives follow the rules as set out in national legislation which applies to the company and are based on international standards, EU guidelines and regulation. This includes clear rules with respect to worker participation and risk assessment.

Our literature review indicates that workplace modification and the use of safety devices in the workplace show some evidence of effectiveness with respect to certain diseases, especially hearing loss and musculoskeletal diseases.

The evidence of the (cost-) effectiveness of educational interventions on preventing accidental injuries and musculoskeletal diseases at work is limited and not conclusive. Our review indicates that training (such as lifting training and back training) should primarily be used as complementary to working conditions improvements and as in-house programmes within close workplace vicinity and programmes that incorporate intensive training.

#### *Initiatives to help retain people in work who have a chronic illness*

With chronic illness we refer to a long-term health condition, such as musculoskeletal problems, cancer, asthma, migraine, epilepsy, diabetes, irritable bowel syndrome, depression, anxiety, heart problems, HIV and hepatitis. The focus of this category of initiatives is not on return to work but on keeping a chronically ill employee in work (workplace retention). Without timely and appropriate retention policies employees with a chronic illness are likely to move out of employment when their condition continues or deteriorates.

At EU level chronic illness is not specifically mentioned in policy and regulation. Chronic illness is included in regulation and legislation when it leads to a disability. An important EU legislative framework is the Council Directive 2000/78/EC of 27 November 2000 – also referred to as the Employment Equality Directive. It established a general framework for equal treatment in employment and occupation and constitutes a major step in the development of anti-discrimination policy. The Directive prohibits any direct or indirect discrimination based on religion or belief, *disability*, age or sexual orientation with regard to employment and occupation. The EU Employment Equality Directive includes a requirement (in Article 5) to provide reasonable accommodations for people with disabilities. There are two complications with respect to this Directive. First, the definition of disability under this Directive does not clearly include chronic illness. Second, with respect to Article 5 (some) EU Member States have struggled with the implementation of this requirement due to interpretation difficulties.

At national level, legislation, policies and initiatives in the EU Member States focus on the retention of people with disabilities in work and not specifically on people with a chronic illness. As a result, people with a chronic illness who are still able to work can fall through the maze of the existing disability schemes and legislation as they often first need to become disabled and/or fall out of the workforce before they are able to receive assistance. Within most EU national systems, occupational health providers are involved in the assessment of fitness to work and in assessing levels of disability for insurance purposes. Particularly in the EU Member States that joined since 2000 their role is still largely driven by compliance with legislation. In the other EU Member States the approach is much more on workplace health management which is both driven by legislative requirements and by health targets set on a voluntary basis by the working community within each enterprise. In these countries the occupational health providers take a much more holistic approach combining their role as assessor with health promotion. A problem, however, is the fact that there is surprisingly little or no communication between occupational health providers and general practitioners (GPs) to address worker's health. The crucial role that GPs can play in workplace retention – especially for chronically ill employees – is often ignored while they co-ordinate and

provide clinical management and provide sick notes which can trigger or continue period of absence of work.

A brief review of websites shows that most companies in the EU provide information with regard to disability management in general, but not on chronic illness specifically.

It appears that good chronic illness management practice requires a proactive, designed set of policies that focus not only on the activities which must take place when an employee becomes chronically ill, but also on the adoption of preventive and promotion practices in relation to worker's health (early interventions). These policies should be integrated with the general company operations and management.

Early interventions include either work (place) adjustment to retain the chronically ill employee in his/her current employment position or redeployment of chronically ill employees who can no longer do the same job as a result of their chronic illness within the same company. The evidence with regard to (cost-) effectiveness of work (place) adjustment (often ergonomic interventions focusing on musculoskeletal diseases) is inconclusive. There is some evidence that certain mechanical and interventions that modify workplace tools are effective in preventing and managing neck/upper extremity musculoskeletal conditions. Mechanical lifting aids, lumbar support, back belts and shoe inserts appear to be ineffective to tackle back pain. Good practices show that work adjustment has more chance of being successful when a chronically ill employee informs their colleagues about their chronic illness and about what they need to help them cope at work.

We also found no evidence of effectiveness for preventing and managing neck/upper extremity musculoskeletal conditions specifically with respect to adjusting the production system (changes to material production in factories) and organisational culture.

Redeployment is often included in the disability management policy of individual companies as an option to retain a (chronically) ill employee when he or she cannot undertake his/her current employment tasks anymore. The inclusion of redeployment is part of national legislation.

#### *Initiatives to support people who are on long-term sick leave to get back into work*

Initiatives to support people who are on long-term sick leave to get back into work focus on return-to-work or reintegration tools (vocational and not vocational). The definition of long-term sick leave is not standardised. We consider a long-term sick leave to be a period of 6 weeks or more. The most frequently occurring causes of sick leave are mental health, musculoskeletal and cardio-respiratory problems.

International, EU, and national legislation and policies do not specifically focus on people who are on long-term sick leave. As with people with a chronic illness, they are often included in regulation and legislation referring to people with a disability. This is a flaw as it endangers groups of people who are long-term absent from work due to illness (but not disability) to fall between all safety nets that exist with respect to social inclusion, employment, health, disability, active ageing, and social protection policies.

Nevertheless, there is a clear commitment in disability policies to improve the employment position of disabled people. At international level, the ILO Convention No 159 and its accompanying Recommendation No 168 are important instruments to ensure vocational rehabilitation and employment of disabled people. The Convention demands from the countries that ratified the Convention action which are appropriate to national conditions and consistent with national practice. In the EU, the majority of the EU Member States – excluding Austria, Belgium, Italy, and the UK – have signed the Convention.

The EU addresses disability through social inclusion, anti-discrimination, active social protection and labour market measures. As mentioned before, an important EU legislative framework is the Council Directive 2000/78/EC of 27 November 2000 – also referred to as the Employment Equality Directive. The EU also has played an important role in the development of training and employment policies in favour of people with a disability through the ‘HELIOS’ programme, the ‘Employment Initiative’ and the ‘EQUAL’ programme. In addition, the RETURN project (2000) formulated several guidelines and protocols for an effective return to work.

At national level, between 23% and 33% of our survey respondents claimed that there are national or regional policies or initiatives in place that support employees who are on long-term sick leave to return to work. However, 23% of the respondents also claimed that there are no national or regional policies or initiatives. The remainder of the respondents was not aware of such policies or initiatives.

Our review indicates that in most EU Member States return-to-work interventions are predominantly embedded in the procedures related to a disability benefit claim. A person generally applies for a disability benefit only after a long period of sick leave when their sickness benefit system is stopped. This means that persons on (long-term) sick leave sometimes only receive support to return to work (if at all relevant) when they fall under the category of persons with a disability. Not in all EU Member States support for people with a disability have a professional element to it. When it does include a focus on return-to-work, it mainly concerns legislation that a disabled worker should be able to remain in the same employment position as before, or should be given equivalent tasks, or may not be assigned to a job below his/her qualifications. Most of the national regulation contains wording that is open to interpretation and despite the fact that most of the national regulations offer the possibility of imposing sanctions on employers who do not comply, this is hardly carried out in practice. Another example concerns national get-back-to work initiatives or programmes to claimants of disability benefits (who may or not may be on long-term sick leave). The Pathways to Work initiative applied in the United Kingdom is well known and often cited. The evaluation results show however how difficult it is for such a large and expensive national programme to be (cost-) effective.

Employers, insurers and workers’ groups have expressed a growing interest in return-to-work interventions after injury or illness, especially as disability management is increasingly being integrated into employers’ and insurers’ mandates. As mentioned before in relation to chronic illness, evidence from our review shows that early intervention has a beneficial effect on the severity or progression of diseases (particularly musculoskeletal diseases). A delay in diagnosis or treatment can make recovery, job

retention or rehabilitation much more difficult. Also, communication between management or supervisors and the worker (but also health care professionals) is of importance.

Treatment only has little impact on work outcomes. There is strong evidence that proactive company approaches to sickness, together with the temporary provision of modified work and accommodations are (cost-) effective (though this evidence is less substantial for interventions in SMEs). A “stepped-care approach” which starts with simple, low-intensity, low-cost interventions, is adequate for most workers when their sickness absence lasts between three to six weeks. For workers who are sick for a longer period (between one to six months), a more structure rehabilitation approach is needed which provides progressively more intensive and structured interventions. Vocational rehabilitation seems to be most effective for tackling musculoskeletal diseases and can improve symptoms and quality life with respect to anxiety and depression, but there is limited evidence that they improve work outcomes. Also in relation to “stress” there is little to no evidence on effective vocational rehabilitation interventions for work outcomes.

There is evidence on the effectiveness of the training element in vocational rehabilitation interventions. No difference could be found between group and individual training. Strong evidence suggests that cognitive behavioural therapy (CBT) is effective in reducing absenteeism of workers with common health problems and specifically chronic low back pain. It also seems to be more successful for people in high-control jobs. CBT, either delivered face-to-face or via a computer program, appears to be more effective than other interventions such as counselling, medicine or increasing participation or autonomy in the workplace. Other evidence suggests that long-term sickness absence or work disability duration is reduced by return-to-work interventions, including ergonomic work site visits, presence of a return-to-work coordinator, or the concept of adjustment latitude (adjustment of work tasks, work pace, workplace pace and working-time). For low back pain specifically, the effectiveness of participatory work adjustment - which concerns a step-wise counselling approach where employee and employer set up a work plan for work adjustments needed for a speedy return to work - has been demonstrated. Our review also indicates that the possibility of unscheduled breaks was found especially beneficial for return-to-work of workers in the first stage of back pain. Also, work-oriented programs for chronic back pain patients that showed positive results all had significant cognitive-behavioural components combined with intensive physical training (specific to the job or not); and were all in some way work-related and given to groups supervised by a physiotherapist of multidisciplinary team.

#### *Initiatives to promote rehabilitation and reintegration into work following a serious health event*

With a serious health event we refer to confirmed diagnosis of cancer, organ failure requiring major organ transplant, loss of independent living, functional loss (paralysis) or stroke. It concerns a health event which is unexpected and life threatening, or where there is a significant threat to one’s physical and psychological integrity. This category shows much overlap with “initiatives to support people who are on long-term sick leave to get back into work”. We try to avoid overlap by focusing on specific rehabilitation and

reintegration initiatives targeted at a serious health event that is related to the diseases under study (e.g., stroke due to cardiovascular diseases).

At EU and national EU Member State level no specific legislation, policies or initiatives exist that focus explicitly on the promotion of rehabilitation and reintegration into work following a serious health event. As for the previously two discussed categories (chronic illness and long-term sick leave), rehabilitation and reintegration (or return-to-work interventions) of workers who suffered from a serious health event are predominantly embedded in disability legislation, policy, and initiatives.

Initiatives at company level are limited as rehabilitation and reintegration of workers who specifically suffered from a serious health event (such as cancer or a stroke) are primarily treated in hospitals and rehabilitation centres. The focus is much less on “professional recovery”. Nevertheless, company level initiatives and activities that focus on reintegration of workers who are on long-term sick leave or chronically ill obviously may apply to workers who suffered from a serious health event. In addition, it should not be forgotten that “medical” interventions that focus on treatment and relief of symptoms can lead to a faster return to work, despite the fact that they are not aimed specifically at reintegration into work.

Evidence from our review suggests that – as mentioned in relation to chronic illness – the presence of a return-to-work coordinator in the hospital or in the rehabilitation centre can improve return-to-work by patients that have experienced a serious health event (specifically patients of myocardial infarction). In relation to cardiac rehabilitation (often offered after a stroke), our review indicates that there is strong evidence that a cardiac rehabilitation programme (in a healthcare setting) which is based on a bio-psychosocial model, consisting of exercise training, educational counselling, risk factor modification, vocational guidance, psychological intervention, relaxation, and stress management training improves clinical outcomes for hospital patients after major cardiac events. There is, however, little evidence that it improves vocational outcomes.

#### *Other policies and initiatives*

We have included policies and initiatives targeted at both individual and societal level (e.g., public health policy). Public health policies which are aimed at the entire population indirectly influence worker’s health, sometimes even stronger than specific workplace initiatives. Effective public health policies use the whole array of available policy instruments, either at the responsibility of a country’s government or involving it.

There is evidence that public health policies are more effective when they are multi-faceted and multi-level, i.e. when there are simultaneous, multi-dimensional efforts at the national, local and individual levels. Health in All Policies (HiAP) is an example of an integrated strategy to improve the health of the population by integrating health in “all relevant policy fields”, e.g. agricultural, transport, occupational and tax policies. In order to implement HiAP, health systems need to endorse a broad vision and reach out to other systems. This implies sustained collaboration with all ministries and the inclusion of health as an important policy concern at all government levels. The effectiveness of governance tools resides in the ability of such measures and mechanisms to promote a “whole of government approach” and to place health and the reduction of inequalities

high on the government agenda (at the local and national levels). Health Impact Assessment (HIA) is one of the most structured mechanisms for inserting health into all policies.

There is very little literature about the effectiveness of HiAP. The most promising strategy to stimulate HiAP seems to be combining coercive and incentive measures, but also providing strong and long-term support at each level of implementation of the strategy. Sub-cabinet committees for maintaining high commitment and cohesive policies, interdepartmental arrangements for coordination and mutual understanding, and dedicated units for knowledge development and capacity building also emerge as promising structural tools. Countries that have experienced joined-up processes for elaborating or evaluating their public health strategy found that it fosters a shared ownership for public health targets. Financial issues are certainly a central aspect for getting commitment from sectors other than health and to establish sub-national entities. The integration of health targets with existing financial and accountability mechanisms seem to be successful. Finally, making intersectoral work and HIA mandatory gave powerful levers for public health decision makers and practitioners to break the traditional silo between them and others sectors. More than one country has taken advantage of the renewal of public health law to introduce measures that favour HiAP.

Our review indicates that the alteration of the lay-out of public space can have a beneficial effect on the health of population (and thus indirectly worker's health) in relation to various risk factors (such as lack of physical activity) of diseases (such as coronary heart disease, anxiety, stroke, depression, diabetes, obesity) and road accidents. The following interventions in relation to public space that have shown to be effective are:

- Ensuring sufficient public amenities (e.g., sport facilities, social neighbourhood facilities and meeting places);
- Making amenities (grocery store, library, etc.) reachable by foot and by bike;
- Traffic interventions (e.g., traffic calming interventions, urban traffic calming schemes, pedestrian schemes).

Evidence in relation to interventions stimulating a transport shift to walking and cycling (e.g., by offering commuter subsidies, promoting car sharing and telecommuting) shows mixed results. Also, the impact of new road building and town bypasses on health of the population is inconclusive.

Tobacco-control interventions are among the most cost-effective investments in health and indirectly have a strong influence on worker's health. The following interventions are among the most cost-effective investments in health:

- Permanent price increases (taxation);
- Comprehensive bans on advertising and promotion of tobacco products, logos and brand names;
- Bans or strong restrictions on smoking in work places and public spaces;
- Good consumer information, education and counter-advertising campaigns;
- Large, direct warning labels on cigarette boxes and other tobacco products, and
- Treatment and help for smokers who wish to quit. This should include good access to counselling, nicotine replacement therapy (NRT).

There is also consensus that these measures likely have synergistic effects, and therefore a comprehensive approach is the most effective means of reducing tobacco consumption.

Interventions successfully curbing alcohol consumption can have great effects with respect to the overall health of the population, and thus indirectly worker's health. Taxation (current tax levels with a 25% increase in tax, compared to no tax) has the greatest impact in reducing alcohol harm, followed by brief interventions delivered by primary care providers to 25% of the at risk population. The three regulatory measures (taxation, restricted sales and advertising controls) are the most economic in terms of cost to implement. Although brief interventions are the most expensive interventions to implement, it should be noted that compared with other health service interventions, brief interventions for hazardous and harmful alcohol consumption are one of the most cost-effective interventions. Implementing the above mentioned options is extraordinarily cheap, compared to the social cost of alcohol. Compared with no programme at all, a programme that includes brief physician advice, random breath testing, current taxation plus 25%, restricted access and an advertising ban would cost only €1.3 billion (about 1% of the total tangible costs of alcohol to society and only about 10% of an estimate of the income gained from a 10% rise in the price of alcohol due to taxes in the EU15 countries) and avert 1.4 million alcohol related DALYs a year.

Our review shows that road accidents are pre-dominantly successfully tackled through policies and initiatives targeted at the societal level. The most effective state-level interventions are legislation, together with enforcement; traffic calming interventions, and pedestrian schemes. Interventions with mixed or inconclusive results are new road building and modal transport shift interventions. Evidence with regard to cost-effectiveness was found for drink-driving laws: full implementation of random breath testing (compared to no random breath testing) throughout the EU prevents between 161 and 460 DALYs per million people per year, at an estimated cost of between €43 and €62 per 100 people per year. Unrestricted breath testing can avoid 111,000 years of disability and premature death at an estimated cost of €233 million each year.

Lack of physical activity and unhealthy nutrition are important risk factors for diseases with a high burden of disease, particularly cardiovascular diseases (e.g., ischemic heart diseases and stroke) and cancer. From clinical studies and public health programmes, interventions in the area of both nutrition and physical activity have been shown to be effective. Public health interventions can lead to savings in terms of direct health care costs as well as indirect savings due to reduced absenteeism that exceed the intervention cost by a factor up to 15. Especially, food labelling, mass media campaigns and physician-dietician counselling appear to have favourable cost-effectiveness ratios from the early years after their implementation.

Our review indicates that several interventions are important in tackling mental health problems, including unipolar depressive disorder. There is consensus that depression must be seen in a social and cultural context, and actions should address societal factors as well as individual factors by building partnerships, mobilisation of inter-sectoral local networks, support for community activity and strengthening of family ties. Such a multi-level approach seems effective, although the evidence base for this is limited.



Evidence was found that the following interventions are effective:

- Improved access to psychological therapies;
- Cognitive-behavioural therapy; and
- Medication such as antidepressants in combination with psychotherapy.

The effectiveness of training of healthcare personnel to better recognize (the risk of) depression remains inconclusive. Internet may constitute a cost-effective means of combating depression by self-help interventions based on psychotherapy that have proven their effectiveness in the clinical setting such as CBT, brief problem solving therapy and interpersonal therapy. It is recommended that these interventions are offered in a stepped care approach to direct patients to more intensive therapies when needed. The benefits of the internet are that it reaches a wide population at low costs, is accessible 24/7, and does not require a face-to-face contact, it can even be used anonymously. This may encourage those who fear stigma or have difficulties travelling to and from health services.



## 7 Recommendations

*There is considerable scope to reduce premature death, illness and disability in people of working age through policies directed at key risk factors*

The current figure of 900,000 deaths per year in the working age population could be cut considerably through wider application of policies on key risk factors such as smoking, diet, physical activity and mental stress. Such policies would also reduce the proportion of people on long term invalidity benefit.

*Policies to retain people in work who are experiencing chronic illness are likely to prove beneficial against a background of declining population.*

Although there is a lack of good quality evaluations the evidence that does exist suggests that policies aimed at rehabilitation and retention of workers with chronic disease contribute both to the health of workers and to the overall productivity of workplaces. Further development of such policies, with careful evaluation of their effects, should be supported.

*More attention is needed for health promotion – both at the workplace and in public policy*

For a large part, the most important diseases in the working age population share the same risk factors: high blood pressure, cholesterol levels, smoking, diet, alcohol, physical activity, and (work-related) stress. These risk factors are amendable to change, since they are related to behaviour, in particular lifestyle.

This finding strengthens the need for workplace health promotion and preventive public policy. Preventive public policy refers to policy at any level of government which addresses the physical, social and cultural environment in which people live and the way in which people behave. By focusing on preventive public policy there is potential to change conditions that have a long-term health impact and to reach a great number of people. Health promotion in the workplace also offers an excellent structure to reach large groups and can be best embedded in existing programmes aimed at improving working conditions, including workplace design, work organisation and organisation of working time. Our review indicates that the conditions that need to be met for successful workplace health promotion include: tailored-approach; senior management involvement; alignment with overall business aims and goals; communication; optimal use of on-site resources; accessibility; focus on improving of working life and conditions and behaviour of the individual worker; supportive environment; and measurement of outcomes.

*To effectively address risk factors intersectoral (integrated) policies are needed*

Strengthening the links between public health, and other policies, such as food and transport policy is a key challenge in addressing the health of the working age population.

A range of instruments can be used at different policy levels, including legislation, networking, public-private approaches, and engaging the private sector and civil society. Health in All Policies (HiAP) is an example of an integrated strategy to improve the health of the population. However, for policy to be effective and cost-effective, action is needed from a wide range of organisations. For example, to address obesity, the food industry and civil society, statutory and voluntary organisations at a local level, such as schools and community organisations need to collaborate. A similar approach should be taken to achieve job retention or return to work for people with health problems. For example, to successfully address musculoskeletal diseases by early interventions clinicians (including GPs), employers and health care and social welfare systems need to work together. This is currently rarely the case in the Europe.

*Although occupational safety and health is well organised in EU Member States, formal employee representation and risk assessment policies can be enhanced*

International standards and EU guidelines and regulation have contributed to clear rules regarding occupational health and safety throughout the EU. Worker participation and risk assessment are important elements in OSH policies.

Although on average 75% of establishments in the EU have at least one form of formal representation of employees in place, there appear to be quite some differences between countries and economic sectors. As companies with formal representation of employees score better on health and safety measures (e.g., carrying out a risk assessment; existence of an OSH policy, management system or action plan; high involvement of line managers in OSH; regular monitoring of employees' health; support measures for employees returning from long sickness absence; regularly analysing causes of sickness absences, and OSH issues regularly raised in high level management meetings) it is recommended that companies, and especially SMEs, in all economic sectors in EU countries aim to achieve complete coverage of formal representation.

With regard to risk assessment policy, our review shows that it is important to take into account the following key elements for a good risk assessment policy:

- Risk assessment should be a dynamic process, in which evaluation of undertaken action plays an important role;
- Risk assessment policy should be integrated in the organisations activities;
- Appropriate responsibility for risk assessment: consultative teams consisting of representatives of management and employees, but in some cases also third party intervention is important;
- Physical and psychological risks should be considered.

There should be attention for short- as well as long-term effects.

*The focus should be on proactive policies and initiatives when addressing the health of people with a chronic illness, people who are on long-term sick leave or people who experienced a serious health event*

People with a chronic illness who are still able to work, people who are on long-term sick leave and people that experienced a serious health event are not specifically addressed in current legislation, policies and initiatives. These categories of people are often – indirectly – included in regulation and legislation aimed at people with a disability. This

means that they first need to become disabled and/or fall out of the workforce before they receive assistance. However, it is known that good management practice of these categories of people requires a proactive, designed set of policies that focus not only on the activities which must take place when an employee becomes ill, but also on the adoption of preventive and promotion practices in relation to worker's health (early interventions). These policies should be integrated with the general company operations and management. At EU level, return to work needs to be better integrated in EU policy at various levels (in relation to employment, quality of work and quality of life, public health policy, health and safety policy; and research policy and programmes). The extensive exchange of good practices across the EU Member States through EU programmes and policies has already led to a certain harmonisation of policies.

*Collaboration between occupational health and curative health should be stimulated to effectively address workforce health*

Ideally, retention should be achieved through better assessment, referral and liaison between the (chronically ill) employee, the general practitioners (GPs), and other healthcare providers, the employer (manager, human resources) and unions. A problem encountered in current practice is that occupational health providers and general practitioners (GPs) do not communicate (well). The crucial role that GPs can play in workplace retention – especially for chronically ill employees – is often ignored while they co-ordinate and provide clinical management. In addition, they provide sick notes which can trigger or continue period of absence of work. Improved communication and collaboration between the occupational health provider and GP can be achieved through training and system changes which enhance communication

*Retention and return to work interventions should follow a step-wise multidisciplinary approach*

Overall, our review indicates that optimal return-to-work interventions should be multi-disciplinary by focusing on:

- The physical aspect in relation to the specific health problem;
- Cognitive-behaviour of the worker experiencing a specific health problem;
- The organisational structure (e.g., how can the workplace or work tasks be adjusted); and
- Education (of the employee experiencing the health problem).

In addition, return-to-work interventions should start with simple, low-intensity, low-cost interventions, which are adequate for most workers with a limited health problem. For workers who have a more substantial health problem a more structured approach is needed which provides progressively more intensive and structured interventions.

*Poor health in the work force and its consequences should be monitored*

To gain insight into the health problems of the working age population and the consequences of poor health on work, it is necessary to monitor poor health and its consequences for work performance and productivity loss. We detected some data gaps in the present European monitors. For the monitoring of health problems in the working age population, we recommend to include also non-working people and to assess all important health problems, not only the main health problem. It is also advised to include measures of work performance and productivity loss, since these measures are almost

absent in the current databases. Finally, on the condition that age-specific data are available, we recommend the use of summary health measures (e.g., DALYs or healthy-life years) for the monitoring of health problems in the working age population, as they combine data on mortality, morbidity and accidental injuries.

*There is a need to measure the (cost-) effectiveness of interventions*

The evidence base of the (cost-) effectiveness of (preventive) interventions is limited. There is evidence available on the effectiveness of interventions focusing on particular risk factors (e.g., tobacco and alcohol use) and some evidence on specific (workplace) interventions. However, the interventions are often limited in terms of assessing impact on changes in health behaviour or health status (i.e., excluding work outcomes). Evidence of the (cost-) effectiveness of policy initiatives at national and European levels is even more limited.

Future research in the area of preventive policies and initiatives to tackle the important health determinants should predominantly focus on developing an appropriate and common evaluation approach for evaluation, focusing specifically on cataloguing the long-term impact. As cost-effectiveness studies of public health and work-related interventions are still in their infancy, future research should also focus on how the capacity to undertake independent evaluations could increase.



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