



European Agency
for Safety and Health
at Work

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Prevention through anticipation

A key to success in occupational risk prevention

The vast majority of work-related accidents and health problems can be prevented. If you look within the European Union at the best and worst countries or best and worst companies in various sectors in terms of accident prevention, there is a big difference in the number of deaths at work.

Safety and health prevention is not a one-off project — it is continuous, systematic work. The challenge is to build and maintain a preventive safety and health culture that permeates all society. Such a culture must be based on the right to a safe and healthy work environment and on the principle of prevention, on a systems approach.

The World Health Organization (WHO) defines health as not merely the absence of physical, mental and/or social illness. True health is a state of balance within a person.

A healthy workplace is, first of all, a workplace where, as far as possible, there are no occupational hazards which could, in the broadest sense, directly harm the workers' health. In other words, a working environment in which there are no accidents, no occupational diseases, no other health problems, no gender- or other types of discrimination, and which allows a work-life balance, adequate rest periods, etc. But it must also be an environment where there is room for professional development and for promoting workers' well-being.

Safety and health is one of the major problems in our workplaces: every three and a half minutes, somebody in the EU dies from work-related causes. In the EU-27, where there are 225 million people of working age of which 205 million are in employment, there are 167 000 deaths a year as a result of either work-related accidents (7 460) or occupational diseases (159 000). More than a third of the total number of deaths (74 000) can be attributed to working with dangerous substances.

Country	Total no. of people in employment	Fatal accidents reported (2003)	Estimated fatal accidents (2003)	Accidents resulting in 3+ days' absence (2003)	Work-related diseases	Work-related deaths	Deaths caused by dangerous substances
Austria	3,798,400	103	227	213,419	2,820	3,047	1,318
Belgium	4,070,400		84	78,974	2,893	2,977	1,353
Bulgaria	2,834,000	114	288	270,674	2,006	2,294	898
Cyprus	327,100	8	10	9,251	242	252	113
Czech Republic	4,733,000	199	245	230,128	3,648	3,893	1,706
Denmark	2,692,500		51	47,949	2,026	2,077	947
Estonia	594,300	31	38	35,849	683	721	309
Finland	2,385,000	43	49	46,068	1,862	1,911	871
France	24,660,900	661	782	735,214	19,279	20,061	9,014
Germany	36,172,000		901	847,094	28,568	29,469	13,358
Greece	4,103,900		68	63,932	3,203	3,271	1,498
Hungary	3,921,900	133	164	153,804	4,507	4,670	1,950
Ireland	1,836,000	65	80	75,167	1,333	1,413	623
Italy	22,133,000	916	991	931,709	16,987	17,978	7,943
Latvia	1,006,900	41	50	47,413	1,157	1,207	527
Lithuania	1,438,000	117	144	135,301	1,652	1,796	769
Luxemburg	293,400	16	7	6,581	139	146	65
Malta	147,042	12	15	13,877	113	128	53
Netherlands	7,935,000		104	97,778	5,949	6,053	2,782
Poland	13,617,000	515	633	595,577	10,357	10,990	4,637
Portugal	5,127,700		346	325,299	3,888	4,234	1,818
Romania	9,222,500	418	1,016	955,493	6,059	7,075	2,712
Slovakia	2,164,600	94	116	108,704	1,607	1,722	719
Slovenia	896,000	40	49	46,257	681	730	318
Spain	17,295,900	722	722	678,803	13,887	14,609	6,493
Sweden	4,234,000		56	52,650	3,163	3,219	1,479
United Kingdom	27,820,800	174	224	210,598	20,778	21,002	9,716
Total	205,431,242	4,422	7,460	7,013,545	159,485	166,945	73,989

The role of the European Agency for Safety and Health at Work

Europe's occupational safety and health (OSH) challenges are too complex to be tackled by a single organisation, or even a single country, so, in 1996 the European Agency for Safety and Health at Work was set up. The Agency's aim is to make workplaces safer and healthier for the working population of the 27 European Member States.

Located in Bilbao, Spain, the Agency has a dedicated staff of occupational safety and health (OSH) specialists and a network of partners in all EU Member States and beyond. We collect, analyse and disseminate information on occupational safety and health for the whole EU.

Identifying and sharing good practice is one of the Agency's main goals in order to achieve genuine security and promote a risk prevention culture across Europe. This good practice incorporates

solutions which have been successfully implemented in the workplaces of Member State governments, companies or public organisations.

We analyse and raise awareness of measures which can be adapted to suit other organisations and countries and which provide practical, specific and cost-efficient ways to improve safety and health at work. We use a variety of communication channels to communicate our message on safety and health at work, such as our conferences and campaigns, the Agency's website (including our electronic newsletter) and a wide range of printed and online publications.

The information on the Agency's website is available in 22 official EU languages. The website provides information on health and safety issues which are specific to certain sectors, gives an overview of European health and safety legislation and allows users to search for information by sector, type of risk or priority group, such as people with disabilities, women, migrant workers, young people, etc.

Our strong point is that we are free to talk and work with practically anybody, whether it is governments, employers or workers. Our weakness is that there are too many 'players' in this field. We deal with 27 Member States, the European Commission and the European Parliament, thousands of companies and millions of workers. Getting our message across, especially to the smaller companies, is a big challenge.

Community strategy on health and safety at work

The Agency's work programme for the next few years is connected to the priorities set by the new Community strategy published last year called 'Improving quality and productivity at work: Community strategy (2007-2012) on health and safety at work' of which one

objective is to reduce by 25% the total incidence rate of accidents at work per 100 000 workers in the EU-27.

The strategy clearly defines the Agency's role in the pursuit of these objectives. The actions which the Agency is developing and which it will implement over the next few years will respond to the demands of the strategy.

In order to ensure that the new strategy is implemented, one of the priorities the Agency has included in its work programme is to focus on small and medium enterprises, or SMEs, (in particular, micro-enterprises), which employ most of the EU's working population, have the highest accident rate (above all in sectors such as agriculture, construction and transport) and often have less access to information and advice. In that regard, the new Community strategy has allocated the Agency the task of ensuring 'that its efforts to raise awareness and promote and disseminate best practice focus to a greater degree on high-risk sectors and SMEs'.

Other key actions are to enhance risk anticipation to include risks associated with new technologies, biological hazards, complex human-machine interfaces and the impact of demographic trends, and to encourage national health and safety research institutes to set joint priorities, exchange results and include occupational health and safety requirements in research programmes.

The strategy also identifies a number of priorities to which the Agency has given particular attention, such as psychosocial risks, MSDs (musculoskeletal disorders) - which were the focus of the Agency's 2007 information campaign '***Lighten the load***' as they are still the most common health problem among workers – exposure to

dangerous substances, reproductive health hazards, OSH management, and multi-factorial risks and nanotechnologies.

Lastly, another priority of the new strategy is to finalise the methods for identifying and evaluating new potential risks. Proper risk assessment and management is a priority in the effective prevention of occupational risk, which is why the Agency's ***Europe-wide information campaign with the slogan 'Healthy Workplaces - Good for you. Good for business'*** is dedicated to risk assessment.

European Risk Observatory: prevention through anticipation

Another priority included in the Agency's work programme is the constant monitoring of the continuously changing world of work. Demographic changes as well as changes in work organisation and production methods are leading to new types of risks. Keeping up with the rapid pace of change in our workplaces is a key challenge for the EU.

The Agency set up the European Risk Observatory more than three years ago to help meet this challenge. Its aim is to identify new and emerging risks. In order to achieve this, the Observatory seeks to provide an overview of safety and health at work in Europe and to identify work trends and the underlying factors, as well as to anticipate changes in work and their likely consequences for safety and health so as to better target resources and enable more timely and effective interventions.

The Observatory collects and analyses data to give risk prevention specialists and legislators an understanding of the implications of the changing world of work for occupational safety and health and thereby helps to shape future risk prevention measures.

Through its European Risk Observatory, the European Agency for Safety and Health at Work has published a series of reports on expert forecasts on the main new and emerging risks in **three broad areas: physical risks, biological risks and psychosocial risks**. The fourth report on expert forecasts on emerging chemical risks is due to be published.

Emerging physical risks in the European Union

The report identifies the ten main emerging risks, which are: lack of physical activity; combined exposure to MSD risk factors and psychosocial risk factors; complexity of new technologies and human-machine interfaces; multi-factorial risks; insufficient protection for high-risk groups against long-standing ergonomic risks; thermal discomfort; general increase in exposure to UV radiation and combined exposure to vibration, awkward postures and heavy physical work.

The **lack of physical activity** is the result of the growing use of visual display units (VDUs) and automated systems resulting in prolonged sitting at the workplace, which, combined with the lack of physical activity, gives rise to an increased prevalence of musculoskeletal disorders (MSDs).

However, workplaces where there is prolonged standing are also a concern. The health outcomes are MSDs of the upper limbs and of the back, varicose veins and deep-vein thrombosis, obesity, and certain types of cancers.

Combined exposure to MSD risk factors and psychosocial risk factors has a more serious effect on workers' health than exposure to one single risk factor.

Unfavourable psychosocial aspects are seen to accentuate the effects of physical risk factors and contribute to an increased incidence in

MSDs. The literature focuses on VDUs and call centre jobs and on the healthcare sector.

As regards the **complexity of new technologies and human-machine interfaces**, the physical characteristics of workplaces, such as poor ergonomic design of human-machine interfaces augment workers' mental and emotional strain and therefore the incidence of human errors and the risk of accidents.

'Intelligent' but complex human-machine interfaces are found in the air industry, in the healthcare centre (computer-aided surgery), in heavy trucks and earth-moving machinery (e.g. in-cab joysticks) and in complex manufacturing activities ('cobots').

In addition, the experts especially highlighted **multi-factorial risks**. The literature focuses on call centres which are multiplying and bring new types of jobs with multiple exposure: prolonged sitting, background noise, inadequate headsets, poor ergonomics, low job control, high time pressure, high mental and emotional demands.

MSDs, varicose veins, nose and throat diseases, voice disorders, fatigue, stress and burnout are observed in call centre agents.

Another issue in the report is the **insufficient protection of high-risk groups against long-standing ergonomic risks**.

Workers with a low employment status and poor working conditions, who paradoxically are the subject of fewer training and awareness-raising measures, are identified as particularly at risk. An example is workers in the agriculture and construction sectors with poor knowledge of the thermal risks related to work in cold or hot environments.

Lack of measures against thermal discomfort at industrial workplaces, where only thermal stress has been addressed so far, is

highlighted. The impact of thermal comfort on workers' overall stress and well-being is considered as not adequately assessed. Thermal discomfort may impede workers' performance and safety behaviour, hence increasing the probability of occupational accidents.

Another physical risk identified is the risk of a **general increase of exposure to ultraviolet radiation (UVR)**.

As UVR exposure is cumulative, the more the workers are exposed during but also outside their working time, the more UVR sensitive they are at work. Hence a potentially growing need for prevention measures at the workplace.

Lastly, the report identifies the risk of **combined exposure to vibration, awkward postures and muscular work**.

Vibration, although considered a more 'traditional' risk, has gained more attention with European Directive 2002/44/EC.

Biological risks

In its second report, the European Risk Observatory identifies emerging biological risks that are most likely to affect workers in the EU. Farmers, healthcare workers or people in evolving industries such as waste treatment are particularly concerned. Communicable diseases such as SARS, avian flu or Dengue are of increasing concern. Despite existing European law, knowledge is still limited and in many workplaces biological risks are poorly assessed and prevented. The report emphasises the importance of taking a global and multidisciplinary approach involving occupational safety and health, public health, environmental protection and food safety.

Biological risks often remain underestimated although they may be very harmful for EU workers in literally any sector. The challenge is to identify them quickly as they appear and analyse the consequences

they might have on people's health and to work out policies and procedures to minimise their spread. The ERO expert forecast identifies new and increasing biological risks related to occupational safety and stresses the importance of considering all collective responsibilities and means of control, both inside and outside the workplace.

Globally, an estimated 320 000 workers die every year of communicable diseases caused by viral, bacterial, insect and animal related biological hazards. Although most of these take place in developing countries, some 5 000 fatalities will occur in the European Union. Women are more likely to be hit than men as they work more in occupations that involve biological hazards and exposure.

The most emerging risks relate to global epidemics with new contagious pathogens, e.g. severe acute respiratory syndrome (SARS), avian flu and Ebola, and re-emerging ones such as cholera and yellow fever. Given the speed and volume of international traffic and trade, these substances may spread around the globe within a few hours and start a new pandemic.

In industries with the highest risk, as many of these diseases jump the species barrier from animals to humans, workers in contact with livestock are particularly at risk. Other pathogens such as tuberculosis have become resistant to known drugs and can result in severe infections in healthcare workers.

Complex exposure situations are found in new industries such as waste treatment where workers come in contact with a variety of airborne micro-organisms and organic compounds.

Psychosocial risks

As mentioned, working environments are significantly changing with the introduction of new technologies, materials and work processes. Changes in the work design, organisation and management can produce new risk areas that can result in increased stress levels for workers and may finally lead to a serious deterioration of mental and physical health.

The third ERO report on expert forecasts shows that the main psychosocial risks are related to new forms of employment contracts, job insecurity, work intensification, high emotional demands, violence at work and a poor work-life balance.

Precarious work puts workers' health at risk. Precarious work is generally defined as low income and low quality employment with little opportunity for training and career progression. People on precarious contracts tend to carry out the most hazardous jobs, work in poorer conditions and receive less OSH safety training. Working under unstable working conditions can give rise to job insecurity which significantly increases work-related stress.

Work intensification leads to health problems

Strict deadlines and high speed makes a growing number of EU workers experience high workload and work pressure. Reduction in workplaces, increasing amount of information to handle at work as a result of new communication technologies and more demands shared between fewer workers can also lead to greater work-related stress.

Violence and bullying jeopardise workers

The problem of violence and bullying in workplaces is of growing concern. Although it affects all types of occupations and activity

sectors, it is prevalent in the healthcare and service sectors. Deterioration of self-esteem, anxiety, depression and even suicide can be the consequence.

Poor work–life balance affects families

High workloads and inflexible working hours make it more difficult to achieve a decent work-life balance, particularly for women, who often still face a 'double shift': first at work, then at home. This can lead to stress and other negative effects on people's health, especially when there is no possibility for the employees to adjust the working conditions to their personal needs. Over 40% of employees from the EU-27 who worked long hours reported being dissatisfied with the balance between work and family life.

Work-related stress is one of the biggest occupational safety and health challenges faced in Europe – affecting an estimated 22% of EU workers in 2005 – and the number of people suffering from stress-related conditions caused or made worse by work is likely to increase. Studies suggest that between 50% and 60% of all lost working days are related to stress. In 2002, the annual economic cost of work-related stress in the EU-15 was estimated at EUR 20 billion.

Gender issues and working conditions

Another major change in the European labour market is the growing number of **women**. According to a Eurostat report, women make up 44% of the employed population in the EU-27 and only a third of them are in managerial positions. In all Member States for which data were available, annual average gross earnings for women were lower than for men.

Safety and health risks of women at work tend to be underestimated and neglected. The incompatibility of working time with family life, the 'double shift' which still affects women disproportionately and the fact that there is more emphasis on accidents at work than on

occupational health (which leads to attention being turned towards male-dominated sectors and occupations) are some of the new challenges which must be faced.

The EU strategy on health and safety at work has gender mainstreaming as an objective, and to support this, the European Agency for Safety and Health at Work has carried out studies examining gender differences in workplace illnesses and accidents, gaps in knowledge and the implications for improving risk prevention, management and evaluation.

Thanks to those studies, we are now aware that women suffer more stress than men, above all due to sexual harassment, discrimination, emotionally demanding work and the double burden of paid work and unpaid work in the home. They are also more often subjected to violence, when their work involves dealing with the public, and more frequently suffer from asthma and allergies in cleaning activities, in the healthcare sector and in textile and clothing manufacture. Skin diseases in sectors such as catering, cleaning and hairdressing, as well as infectious diseases in the healthcare or child care sectors, are also more common among women.

Migrant workers and working conditions

The EU Member States are also facing an increase in the number of **migrant workers**. There are currently 19 million people - 5% of the total population – 13 million of whom are not from the EU, who are more vulnerable due to risks related to precarious work, communication problems, harassment and discrimination.

The European Risk Observatory recently published a new report providing an overview of the issues relating to the occupational safety and health of migrant workers. Migration can bring career opportunities that can enhance workers' general well-being, but it can

also involve a degree of deskilling and downward social mobility which can be associated with potential health and safety problems.

The migrant worker situation is a serious cause for concern all over Europe. Migrant workers are often over-represented in dirty, dangerous and demanding jobs and in high-risk sectors such as agriculture and horticulture, construction, healthcare, households, transport and the food sector. Their work is often characterised by uncertainty, poor working conditions and low wages. There is also evidence to suggest that other migrant workers work in high skill professions such as IT.

The significant presence of migrant workers in high-risk sectors may be explained not only by labour shortages, but also by language and legal barriers along with more subtle forms of discrimination. And their presence is likely to be even higher as official statistics refer only to legal permanent migration.

It is estimated that in the nine largest economies of the former EU-15 between 4.4 and 5.5 million immigrants are working in the 'informal economy', although precise data about undeclared employment is still not available. There are serious health concerns for undeclared workers as they often do not have access to occupational health care services and lack the legal protection mechanisms for employees in dangerous occupations. Migrant workers face additional health and safety risks due to their relatively short period of work in the host countries and their limited knowledge of the health and safety systems in place. Some of them also report being subject to harassment more frequently than their native counterparts. Coupled with more unfavourable working conditions, higher rates of stress and burnout are one visible consequence.

Chemical risks

In the absence of the European Risk Observatory's fourth report on expert forecasts on emerging chemical risks, we are already aware that the new Community strategy 2007-2012 has identified dangerous substances, including their combined exposure with physical agents, as a research priority.

Some 100 000 different dangerous substances are registered on the EU market. Dangerous substances are found in many work environments. The chemical industry is the third largest manufacturing industry, employing 1.7 million people directly, with three million spin-off jobs. However, exposure to dangerous substances also occurs in workplaces outside the chemical industry: for example, on farms, in motor vehicle repair shops, in hairdressers' shops and in many other workplaces.

The significance of those data is evident considering the serious harm that can be caused by exposure to those substances. Some cause cancer, can affect the ability to reproduce or cause birth defects. Other substances may cause brain damage, harm to the nervous system, asthma, and skin problems. The harm done by dangerous substances can occur from a single short exposure or by the long-term accumulation of substances in the body.

As mentioned above, not only chemical industry workers are exposed to this risk. For example, agricultural workers use pesticides and detergents and construction workers commonly use solvents and paints. According to the *Fourth European Working Conditions Survey*, approximately 15% of employees in the EU handle or are in contact

with dangerous substances for at least one quarter of their working time. One in five workers continues to be exposed to breathing in smoke, powder or fumes.

Taking into account the risks involved and the fact that this is considered to be an emerging risk, the Agency's European Risk Observatory has identified main research priorities in the following fields:

- Carcinogens – for example, each year there are an estimated 95 581 deaths from occupational cancer in the EU-27. The Agency is preparing to suggest amendments to legislation and EU policy and practices as well as to carry out cutting-edge research on exposure to carcinogens at work, which will be published in 2008.
- The exposure to nanoparticles and ultrafine particles.
- The validation and improvement of models for worker exposure assessment, including skin exposure (measuring, modelling and risk assessment).

Occupational illness requires more attention

Beyond the statistics lies the human tragedy which highlights the pressing need to improve working conditions. Having analysed the figures, the Agency is placing a special emphasis, for example, on ensuring that occupational illnesses and all work-related disorders are treated as important and given the attention they deserve.

Illness caused by the work environment usually receives less media and political attention than accidents at work, which are far more visible and easier to report. Illnesses are less tangible than accidents, their effects manifest themselves after a longer period of time and they are sometimes thought to be due to the lifestyle of the sufferer

rather than to work-related causes. This all results in occupational illness being taken less seriously than accidents when it comes to prevention, and it is rarely discussed. However, as we have seen, the incidence rate of occupational illness is higher than that of accidents at work.

It is also important to take into account the high economic cost of job insecurity: working days lost as a result of work-related health problems or accidents amount to 550 million every year.

As has been stated, prevention is a moral and ethical issue, but it is also about company productivity and competitiveness. Poor safety and health conditions at work contribute to unemployment, sickness absence, long-term disabilities and early retirement.

Therefore, involving the social partners in a tripartite set-up is vital for the purposes of prevention. It may take more time to involve workers, employers and their organisations, but it is a guarantee for success. Workers must be made aware of the risks they face and be trained in how to protect themselves from those risks. It is the responsibility of employers to keep their employees safe and the responsibility of government to adopt and enforce provisions relating to safety.

Occupational safety and health and the prevention of occupational risks are taken seriously by an increasing number of EU institutions. They make great efforts to regulate, through directives and other Community rules, occupational safety and health conditions and several specific risks, such as noise, dangerous substances, asbestos, vibration, manual handling of loads, etc.

Corporate Social Responsibility

In recent years, the concept of corporate social responsibility (CSR) in Europe has undergone a transformation in terms of its direct influence on business activity and its relationship with occupational safety and health. It has been proven that customers and clients are influenced by a company's reputation in social and environmental areas, and that social and environmental responsibility reduces running costs.

In fact, CSR can bring OSH closer to other issues which are important for companies, such as: human resource issues, the balance between work and life, environmental issues, public safety and health issues (including product safety), profitability and productivity and other fundamental rights at work.

A safe working environment is good business. It is not only essential for the well-being of employees, but also for ensuring that enterprises are successful and sustainable, and that economies thrive in the long term.

Integration of occupational safety and health aspects in corporate social responsibility contributes to public appreciation, which is essential for business success. Occupational safety and health in corporate social responsibility also lead to benefits in terms of added value for reputation, work productivity, consumer loyalty and share value. Furthermore, social responsibility brings more recognition by the general public and the mass media.

Showing companies that there is also a business case for investing in the safety and health of their workers may motivate them to go beyond basic legal requirements. Bigger companies have already identified safety and health as a key business issue – in fact, as mentioned above, those Member States that have the best conditions of work also have the highest productivity.

The challenge is to get the smaller companies to adopt the same measures and convince them that in the long run competitiveness depends on a motivated, healthy workforce.

In recent years, many CSR initiatives have started at the level of organisations, of branches, of countries and even in transnational projects. The European Agency for Safety and Health at Work has published a report presenting a number of different company cases, selected as inspiring examples, which show that corporate social responsibility is a development strategy.

Building a preventive culture in Europe

The new Community strategy on health and safety at work warns that while the rate of workplace accidents fell over the period 2002-2006, (over the period 2000-2004 rate of fatal accidents at work in the EU-15 fell by 17%), the latest results of the fourth European survey of working conditions show that many workers in Europe continue to perceive that their jobs pose a threat to their health or safety. It is therefore necessary to pursue risk prevention methods and continue to endeavour to promote health and safety at work in the EU-27, which is, essentially, the primary concern of the European Agency of Safety and Health at Work.

Ultimately, it is necessary to build a sustainable preventive culture, integrate OSH into education and occupational training, promote the exchange of good practice among Member States and, if possible, improve risk anticipation in order to prevent deaths and illness and make workplaces increasingly healthy and safe environments.

Página web de la Agencia Europea para la Seguridad y la Salud en el Trabajo, donde encontrar información sobre los temas mencionados en este artículo y sobre cualquier otro asunto de seguridad y salud en el trabajo: <http://osha.europa.eu>